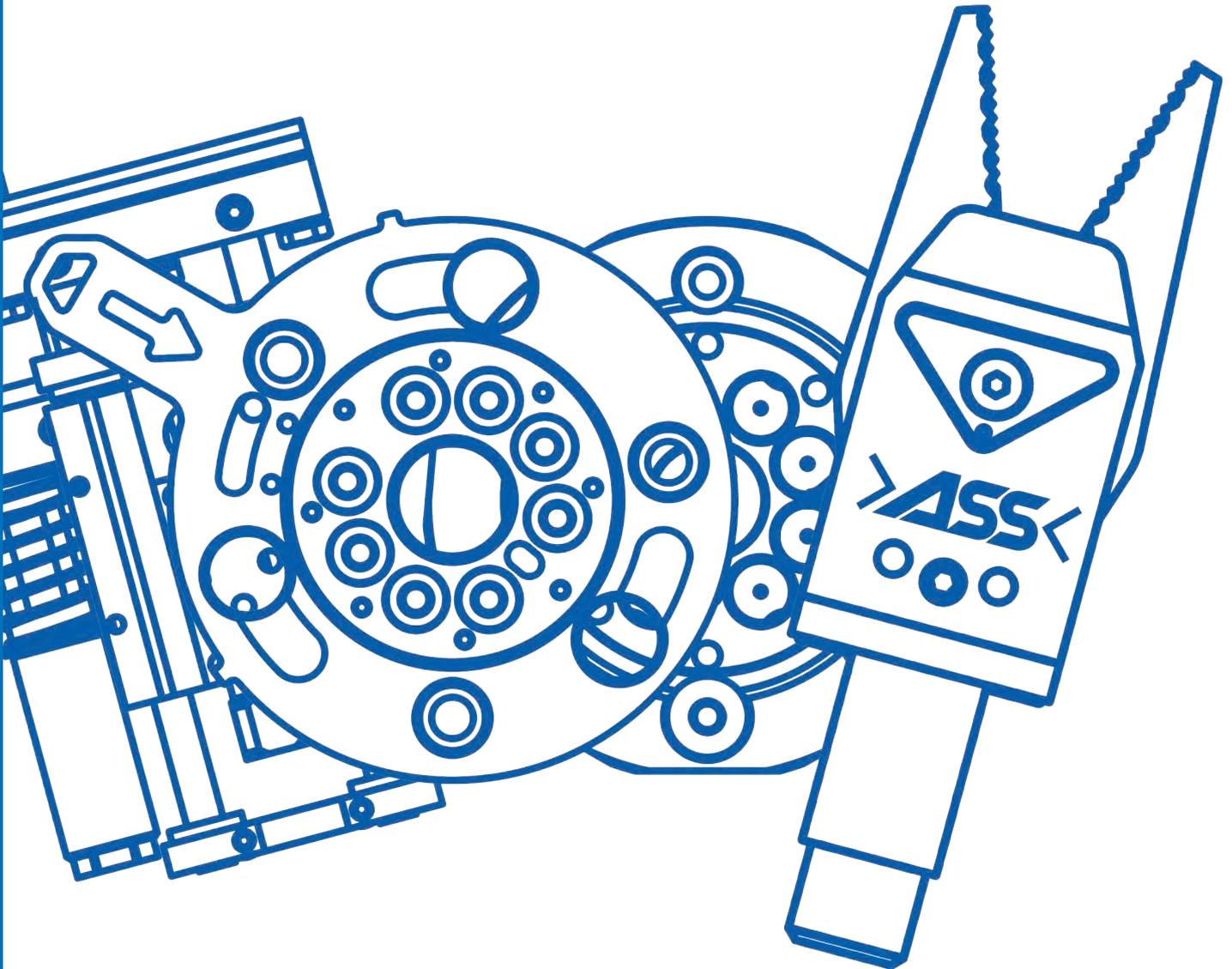


CO<sub>2</sub> NEUTRAL  
PRODUCTION

**ASSK**  
Automations-Systeme



# Robot Hand Kit (EOAT)

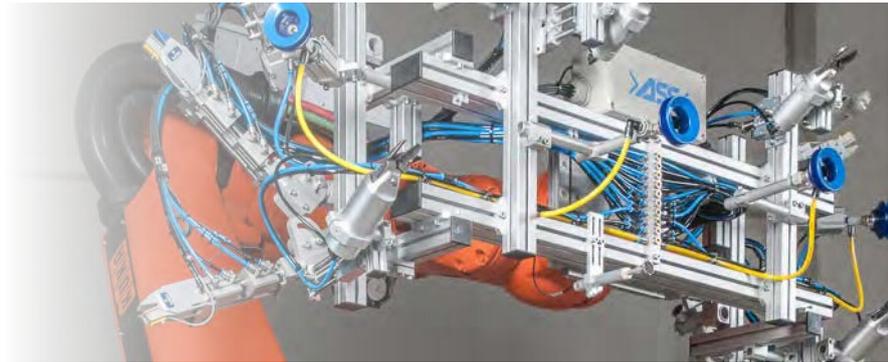
## EOAT COMPONENTS

The ASS Robot Hand Kit (EOAT) consists of over 2,000 standardized gripper parts that are constantly being expanded and supplemented. The comprehensive ASS modular system offers tailor-made solutions for your application. Various mutually compatible size series allow you to build your own EOAT or customize them.



## END-OF-ARM-TOOLING

We design, construct and manufacture robotic hands according to your requirements. From our standardized gripper parts and, if required, specially manufactured special parts, we manufacture your specially tailored robotic hand solution. The EC machine directive is taken into account accordingly for each gripper and delivered with a declaration of conformity or declaration of incorporation.



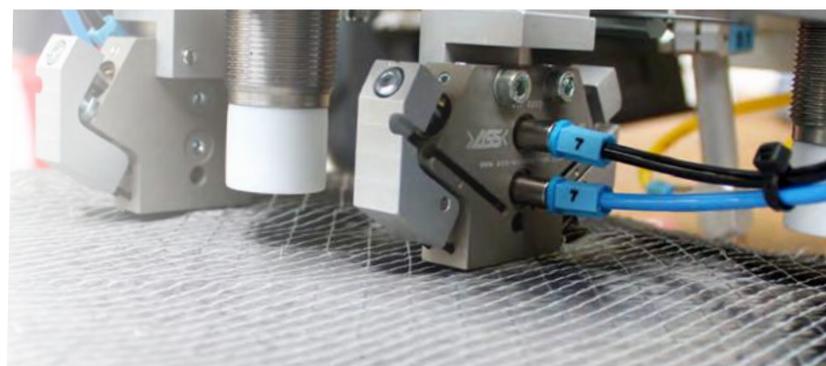
## AUTOMATION SYSTEMS

The requirements in production for highly automated production processes with short set-up and maintenance times are increasing. Our automation systems enable our customers to increase production efficiency and process reliability while saving costs and continuing to guarantee high processing quality.



## LIGHTWEIGHT CONSTRUCTION

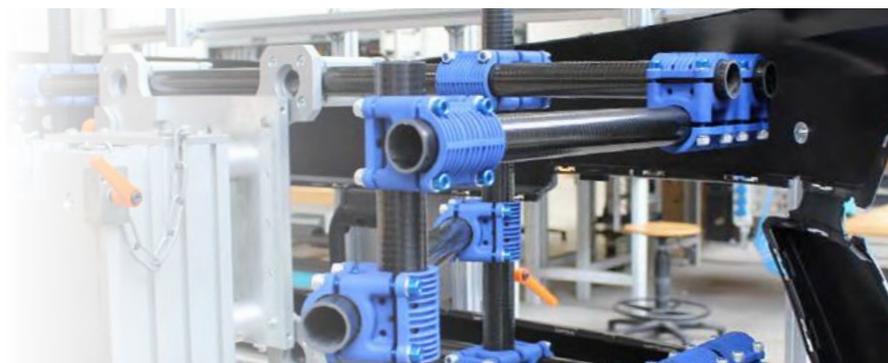
Increasingly lighter construction methods and materials require the ever-increasing use of components made of fiber composites as well as the handling of all kinds of limp parts. Temperature or material properties hardly play a role. We at ASS offer you the right and process-reliable solution for your requirements.



## SPECIAL SOLUTIONS

Non-marking coatings, gripper base frame made of carbon round tube, individual contours in 3D printing or specially manufactured gripper parts:

The process-reliable solution of your handling task is always in the foreground, regardless of whether it is a single gripper part, a robot hand or a turnkey solution.



## EXPERIENCE

Around 120 employees have been developing intelligent solutions for a wide variety of tasks in the fields of automation and robotics for almost 40 years.

We are represented by our subsidiary ASS End of Arm Tooling, Inc. from Plymouth, MI in the USA, Canada and Mexico and our sales partners worldwide.



## QUALITY

ASS components are developed, designed and produced at the certified climate-neutral site in Overath.

The technically high-quality and durable products offer you efficient and economical use.

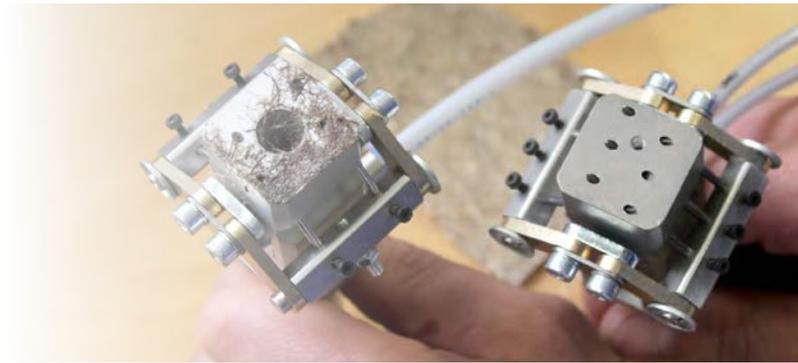
Of course we are certified according to ISO 9001:2015.



## TESTING & FIELD TRIALS

Our technical team will be happy to advise you on site. With the help of various demonstrators, various products can be tested in your area directly on site.

Material tests in Overath are part of the normal procedure. These are particularly in demand for limp or adhesive materials and for sprue separation.



## CLIMATE NEUTRALITY

Since January 2021, we at ASS Maschinenbau in Overath have been a certified climate-neutral location.

All employees contribute to increasing quality and sustainability in their respective areas of expertise in order to cover all areas of the Greenhouse Gas Protocol.

The ASS products thus make a positive contribution to reducing your carbon footprint.



## ABILITY TO DELIVER

The development and production in Overath enables quick reactions to your wishes.

The very high proportion of in-house production paired with our warehouse is a guarantee for high availability and ability to deliver.



## Application Examples

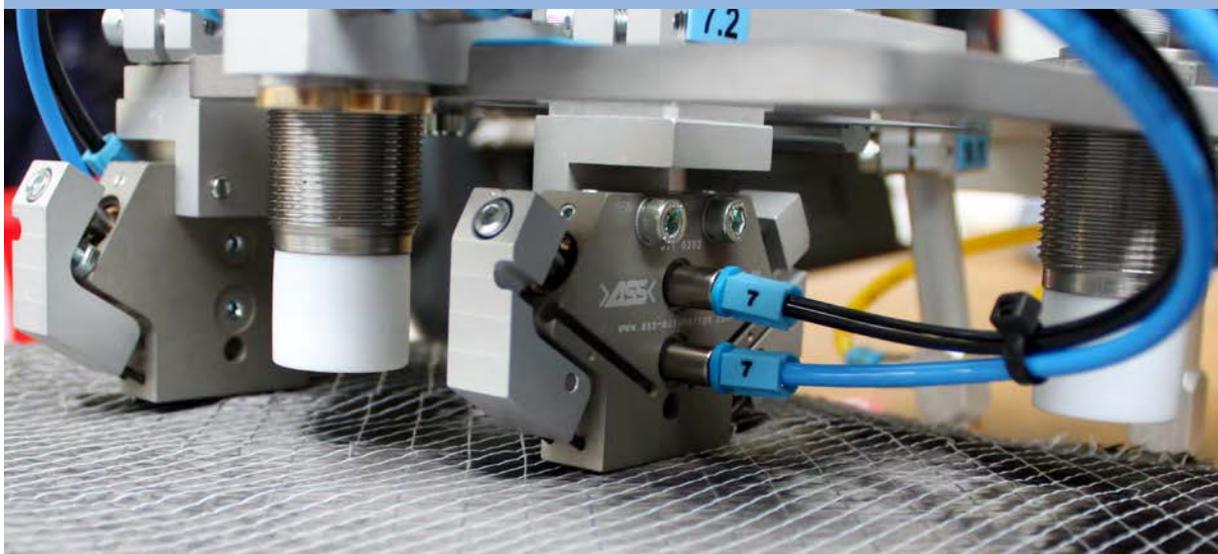
The following application examples show a small excerpt of the most diverse handling and automation solutions. The modular system makes it possible to adapt gripping solutions to all product areas and production processes. Therefore, the mechatronic components, robot hands (EOAT), processing stations, devices and automation systems can be found in plastic injection molding, lightweight automotive construction, e-mobility, white goods and numerous special solutions.

The spectrum ranges from small robot hands made of standard components to highly individual special solutions. As a contact person for your individual tasks, we are at your disposal for a non-binding consultation.

## Automated production of brake fluid reservoirs



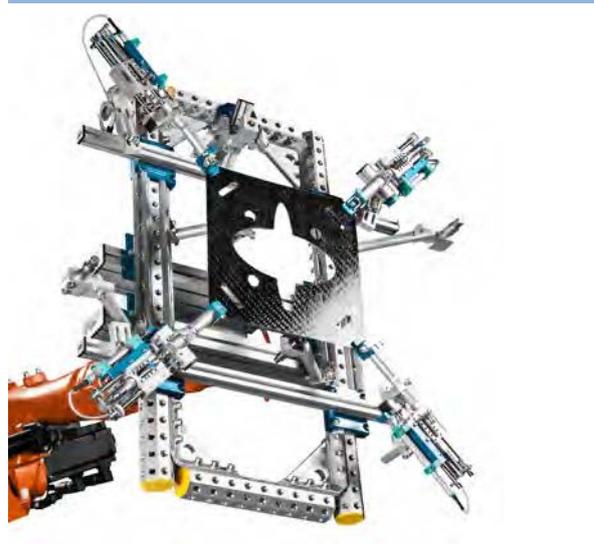
## Handling of CFRP for E-Mobility



**Handling of CFRP**



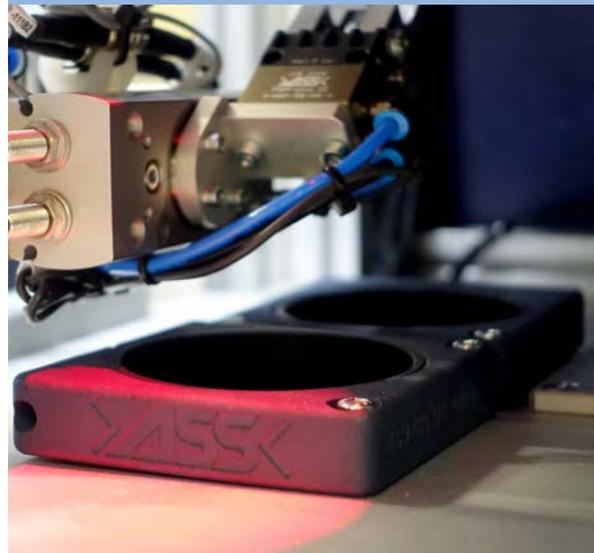
**Handling of Organosheet**



**Feeding machine**



**Optical query**



**Bumper demoulding**



## Automated assembling + testing



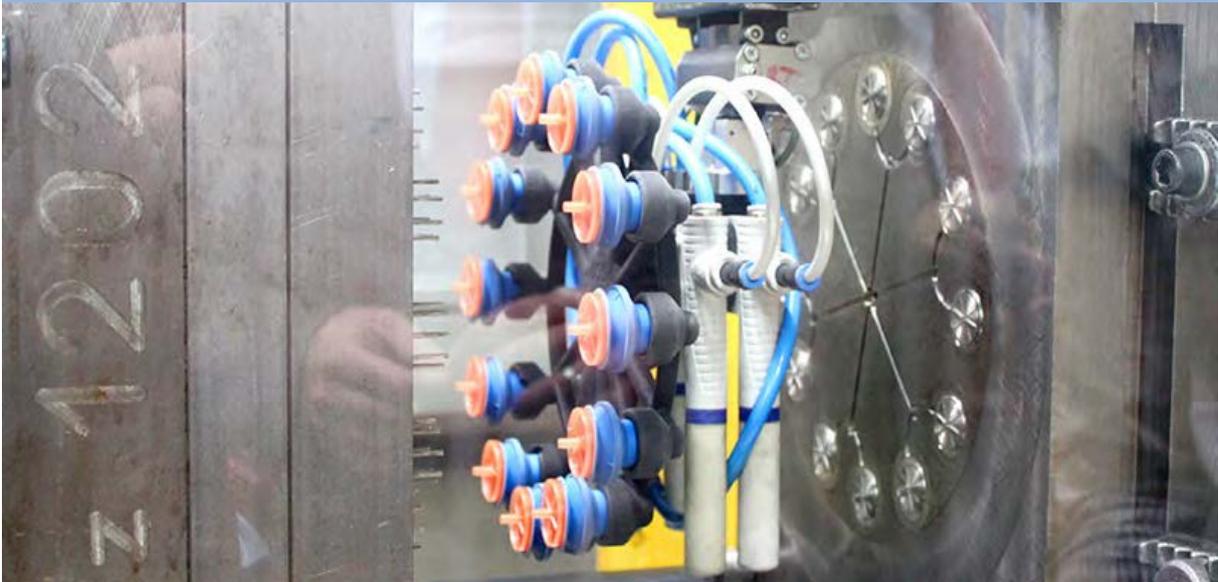
## Bin-Picking



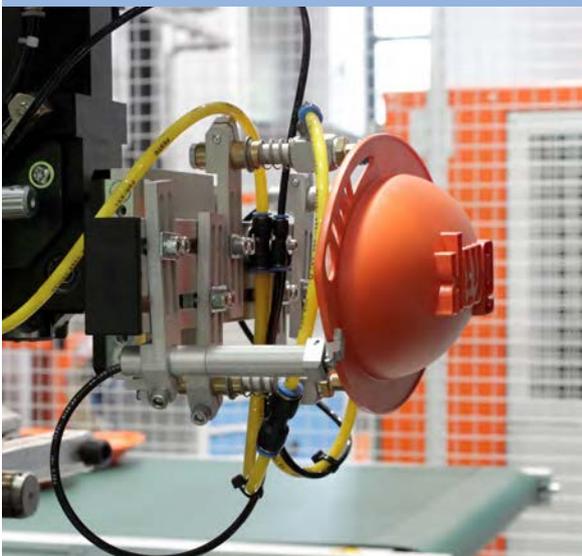
## Automation system around the plastics injection moulding machine



**3D printed robot hand**



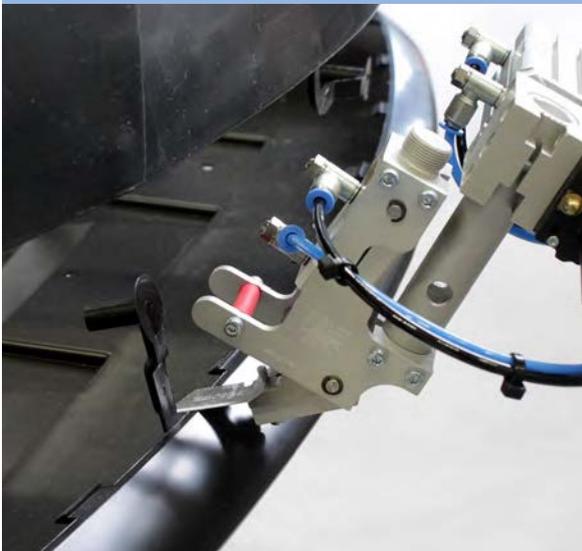
**Demoulding gripper**



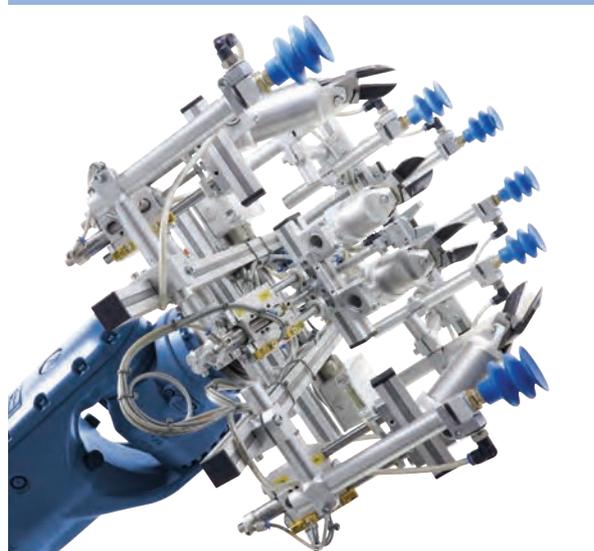
**De-gating Station**



**De-gating**



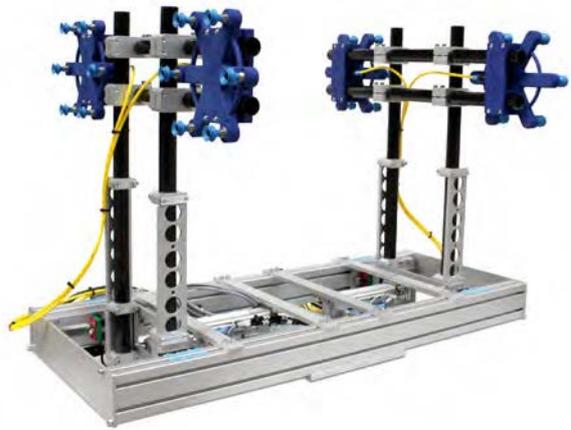
**Combined Demoulding + De-Gating**



### Zuführtechnik



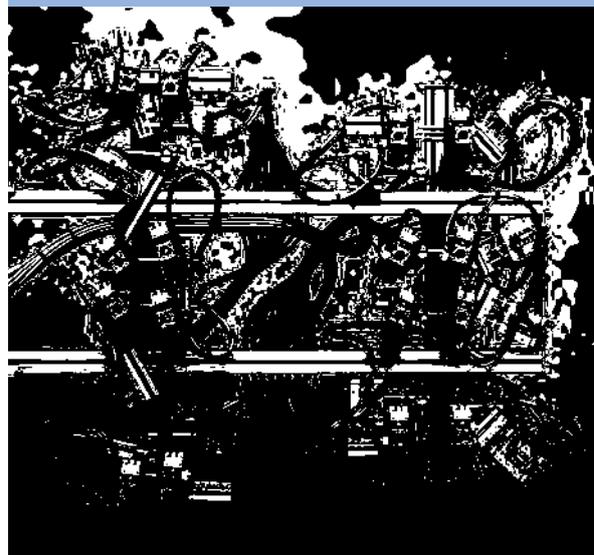
### Lightweight EOAT



### EOAT for limp materials



### EOAT for limp materials



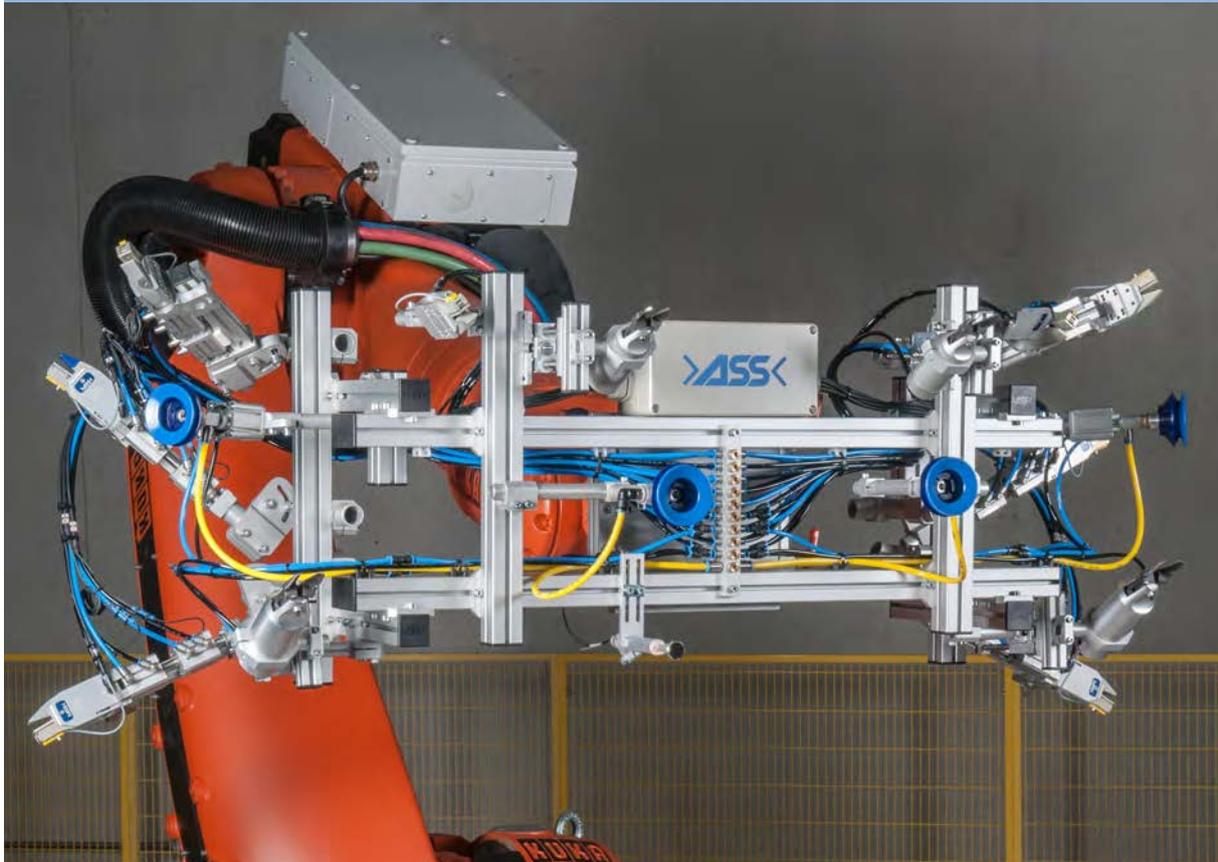
### EOAT for large plates



### Special robot hand



**Bumper demoulding with integrated de-gating**



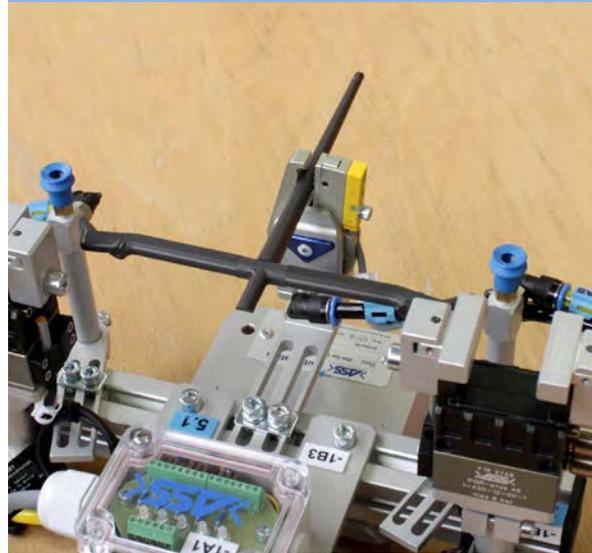
**Automation system with processing, assembly and testing tasks**



### Contour nest



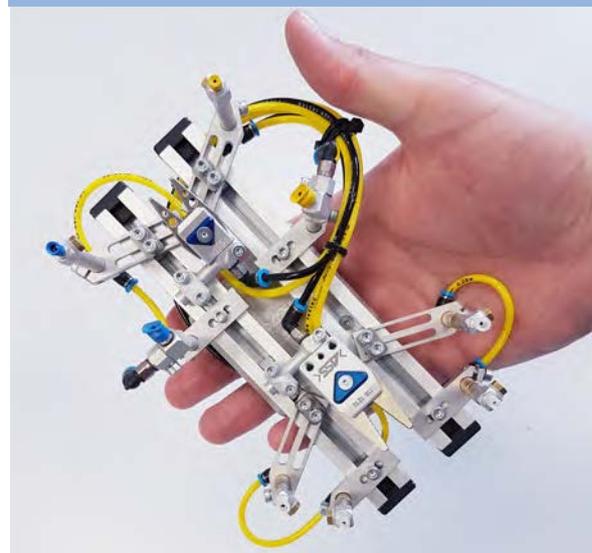
### Secure sprue gripping



### Control technology



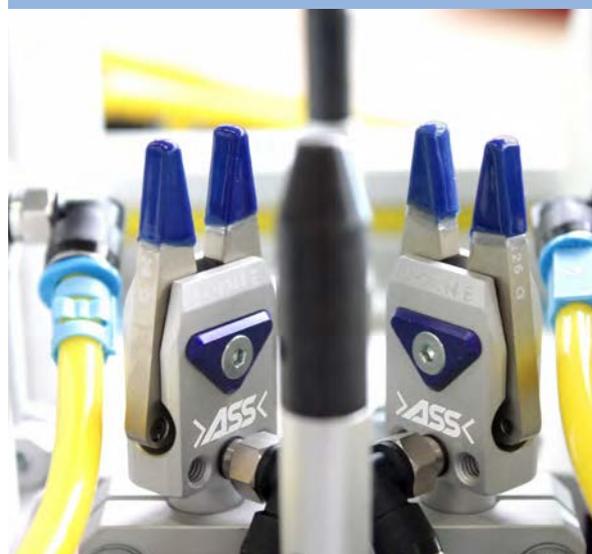
### Micro System



### Tubular System



### EP Coating



## Automation system with assembly and testing tasks



### Advice to catalogue´s content:

The contents of this catalog were created with the greatest possible care. All information is based on empirically determined values and careful calculations or the information provided by the respective manufacturer. All information is as of 10/2022.

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<https://shop.ass-automation.com/>



<b>ASS Portfolio I</b>	<b>2</b>
<b>Advice to catalogue´s content</b>	<b>11</b>
<b>Table of Contents</b>	<b>12</b>

## 000 Quick Change System



Application examples 000	18
SWM / Quick Change System	22
SWM OSK / EOAT (Robot Hand) Quick Change Chuck	24
SWM LL / Pneumatic Connection for Quick Change System	25
GPM / EOAT (Robot Hand) Base Plate	26
GPM / EOAT (Robot Hand) Base Plate	27
<b>New</b> GPM BP / EOAT Base Plate with Adapter	28
<b>New</b> GPM-SWH / EOAT Base Plate for SWH	29
SWM KH / Quick Change System with Lever Locking Device	30
SWM E / EOAT (Robot Hand) Quick Change System, Extruded	31
SWM E OSK / EOAT (Robot Hand) Quick Change Chuck, Extruded	32
SWM E LL / Pneumatic Connection for Quick Change System, Extruded	33
GPM E / EOAT (Robot Hand) Base Plate, Extruded	34
<b>New</b> GHV ND / EOAT (Robot Hand) Holding Fixture, new design	36
GPR / Adapter GPM to SWM	36
GPG / EOAT (Robot Hand) Base Plate features Ball Bushings	37
GPG-P / EOAT (Robot Hand) Base Plate, pneumatic	38
SWH / Quick Change System, Semi-Automatic	39
SWH G 50 / Quick Change System, Semi-Automatic, Gripper Side, Ø50mm	40
<b>New</b> SWH RV 50 / Quick Change System, Semi-Automatic, Robot Side, Ø50mm, with locking	40
SWH G 90 / Quick Change System, Semi-Automatic, Gripper Side, Ø90mm	41
<b>New</b> SWH RV 90 / Quick Change System, Semi-Automatic, Robot Side, Ø90mm, with locking	41
<b>New</b> SWH RVR 90 / Quick Change System, Semi-Automatic, with locking and check valve, Ø90mm	42
SWH G 150 / Quick Change System, Semi-Automatic, Gripper Side, Ø150mm	43
<b>New</b> SWH RV 150 / Quick Change System, Semi-Automatic, Robot Side, Ø150mm, with locking	43
GP SWH G / EOAT Base Plate for SWH	44
<b>New</b> RHZ SWH R / SWH Centering Pin	45
SWH DS / Spacer for SWH	46
SWH SH / Sensor Bracket for Quick Change System SWH	46
SWH ES / Electrical Interface D-SUB for SWH	47
SWH-PG 4 / Pneumatic Interface Expansion, 4-times, Gripper Side	48
SWH-PR 4 / Pneumatic Interface Expansion, 4-times, Robot Side	48
<b>New</b> SWH-PG 2 90 / Pneumatic Interface Expansion, 2-times, Gripper Side	49
<b>New</b> SWH-PR 2 90 / Pneumatic Interface Expansion, 2-times, Robot Side	49
GHV SWH / Holding Fixture for SWH	50
SWS / Automatic Quick Change System	51
SWS 011 / Automatic Quick Change System	52

SWS 040 / Automatic Quick Change System	52
SWO / Electric Connection for SWS 011	52
KAS / Cable Plug for SWS 011	52
SWS 040Q / Automatic Quick Change System	53
SWS 071 / Automatic Quick Change System	53
SWO / Electric Connection for SWS 040, 040Q, 071	53
KV / Cable Plug for SWS 040, 040Q, 071	53
G6A-GPM 3 / Robot Hand Base Frame based on GPM	54
<b>New</b> G6A-SWH G / Robot Hand Base Frame based für SWH	55

## 050 Profile-Channel Nut



Application examples 050	56
L-Profile / „Light System“ 18x10 and 18x18	58
X-Profile / „X-System“ X 25x10 and X 25x18 Profile	59
X-Profile / „X-System“ 25x25 and 50x25	60
JU-Profile / „JU-System“	61
K-Profile / Construction Profile	62
GWP1/GPF / Channel Nut with one Thread	64
GWP2 / Channel Nut with two Threads	64
GWP3 / Channel Nut with three Threads	66
GWP EX U / Channel Nut with Swivel-in-Function	66
PLU / Channel Nut	67
ADP / Profile Channel Cover	67
KKP / Cable and Hose Channel	68
KKB / X-JU: Twist on Cable and Hose Saddle	68
KLB / Hook-and-Loop Tape	68

## 100/115 Clamps



Application examples 100/115	69
<b>New</b> WST / Universal Angle Clamp	72
WST BS / Universal Angle Clamp, Blue Scale	72
WSF U / WSF M U / Flat Angle Clamp	73
<b>New</b> WSL U / Universal Long Angle Clamp	73
<b>New</b> WSL VU / Universal Long Angle Clamp – Heavy Duty Version	74
WSL G / Long Angle Clamp with Ball Joint	74
WSL GA / Long Angle Clamp with Swivel Head	75
WSL KG / Long Angle Clamp with Swivel and Ball Joint	75
DKS / 90° Mounting Bar	76
<b>New</b> WSW / WSW M / Angle Clamp and Angle Clamp, mirrored	77
<b>New</b> KVB / Cross Connector	77
KVB G / Cross Connector with Ball Joint	77
KVB S / Cross Connector, front side	78
<b>New</b> KKS / Cross Clamp	78
PKS / Parallel Clamp	78

## 120 Profile Connectors



Application examples 120	79
KPL F / Cross Joint Connector Flat	82
<b>New</b> KPL / Cross Joint Connector	82
KPL D / Cross Joint Connector, form-locking, swiveling	83
KBV / Square Joint Connector	83
KPL / Cross Joint Connector X/JU to Europrofile	84
KPL V / Cross Joint Connector X/JU to Europrofile, Strong Version	84
EVB / Corner Joint Plate	85
WIV / Corner Reinforcement Connector 90°	86
UVV / Universal Joint Connector, adjustable	87
UVF / Universal Joint Connector, fixed	87
SV / Butt Connector	88
KV / Clinch Nut	89
<b>New</b> EPL / End Plate for Profiles	89
SVB / Butt Connector SVB X 25-25	90
SVB / Butt Connector SVB X 25-50-25	90
SVB / Butt Connector SVB X 50-25-U	91
SVB / Butt Connector SVB X 50-25-50-25	91
<b>New</b> SVB / Butt Connector SVB JU 40-40	92
<b>New</b> SVB / Butt Connector SVB JU 80-40-80-40	92
VBG / Straight Support Joint Connector	93
VBL / L-Style Support Joint Connector	93
VBT / T-Style Support Joint Connector	94
VBW 45 / 45 Degree Support Joint Connector	94
VBW 0-90 / Adjustable Support Joint Connector	95
VBW 120 / 120 Degree Support Joint Connector	95

## 190 Accessories-Profile



Application examples 190	96
ADK / Profile End Caps	96
STB / Step Drill	97
GB / Tap Drill	97

## 200 Vacuum Cup-Connectors



Application examples 200	98
SAS / Vacuum Cup Connector, lateral	98
WSS / Angle Connector for Vacuum Cups	99
WLS / Long Angle Connector for Vacuum Cups	99
WLS GA X / Long Angle Clamp for Vacuum Cups with Swivel Head	100
WSD / 360° Swivel Connector for Vacuum Cups	100

## 220 Vacuum Cups



Application examples 220	101
Vacuum Cup properties	101
Versions-Adapter	101
VS O / Vacuum Cup - oval, with Adapter	102
VN O / Suction Cup - oval, without Adapter	103
VS 1 / Vacuum Cup - 1 Bellow, Adapter	104
VN 1 / Suction Cup - 1 Bellow, without Adapter	106
VS 1 PL / Vacuum Cup - 1 Bellow, Longlife, with Adapter	108
VN 1 PL / Suction Cup - 1 Bellow, Longlife, without Adapter	108
VS 2 / Vacuum Cup - 2 Bellows, with Adapter	109
VN 2 / Suction Cup - 2 Bellows, without Adapter	112
VS 2 PL / Vacuum Cup - 2 Bellows, Longlife, with Adapter	113
VN 2 PL / Suction Cup - 2 Bellows, Longlife, without Adapter	113
VS 3 / Vacuum Cup 3 Bellows, with Adapter	114
VN 3 / Suction Cup - 3 Bellows, without Adapter	116
VS 3 PL / Vacuum Cup - 3 Bellows, Longlife, with Adapter	118
VN 3 PL / Suction Cup - 3 Bellows, Longlife, without Adapter	118

## 224 Vacuum Cups-Special



Application examples 224	119
Vacuum Cup properties	119
VAS SBR / Vacuum Cup, for rough surfaces, with Adapter	120
VSN SBR / Special Suction Cup, without Adapter	120
VS 1 PN / Special Vacuum Cup for sheet metal, with Adapter	121
VS 1 NK / Vac. Cup Natural Rubber, 1 Bellow, with Adapter	121
VS 2 2K / 2-Comp. Vacuum Cup, 2 Bellows, with Adapter	122
VN 2 2K / 2-Comp. Suction Cup, 2 Bellows, without Adapter	123
VS 3 2K / 2-Comp. Vacuum Cup, 3 Bellows, with Adapter	124
VN 3 2K / 2-Comp. Suction Cup, 3 Bellows, without Adapter	125
VS 1 E / Vacuum Cup made of ED	125
VS HT+ / Vacuum Cup, heat-resistant 300°C, with Adapter	126
VS O 2 / Suction Cup - oval, 2 Bellows, with Adapter	126

## 230 Manifold

Application examples 230	127
VTB 1 / Manifold Block 4 Ports	127
VTB 2 / Manifold Block 8 Ports	128
LVT / Light Weight Manifold Block	128

## 290 Adapter

Application examples 290	129
VSA / Adapter for Suction Cups VN and Vacuum Cups VS	129
AVS / Adapter for VAS-SBR	130
AVI / Adapter, female	130
AVA / Adapter, male	130
VSA 2K / Adapter for 2-Component Suction and Vacuum Cups	131
VSE / Vacuum Cup Inserts	132

## 300 Gripper Arms



	Application examples 300	133
	SKS / Short Angle Arm	135
	WKA / Angle Arm	136
	WKA BS / Angle Arm, Blue Scale	136
	GLA / Elbow Gripper Arm	137
	GLA BS / Elbow Gripper Arm, Blue Scale	137
<b>New</b>	GLA K / Elbow Gripper Arm, conical clamping	138
	GLA V / Elbow Gripper Arm, heavy duty	139
	GLA V BS / Elbow Gripper Arm, heavy duty, Blue Scale	139
	GLA VM / Elbow Gripper Arm, heavy duty, mirrored	140
	GGW / Gripper Arm, +/-90 degree	141
	GGW W / Gripper Arm, spring comp., lock. ag. rotation, 90°	142
<b>New</b>	GGG / Gripper Arm, spring comp., lock. ag. rot., for GRZ	143
	GGG 90 / Gripper Arm, spring comp., lock against rot., for GRZ, 90°	143
<b>New</b>	GGO / Gripper Arm for Oval Vacuum Cups	144
	GSE / Gripper Arm for Suction Cups with air connection	145
	GSE U / Gripper Arm for Vacuum Cups, with air duct	146
	GGE / Swivel Head Gripper Arm for Vacuum Cups	147
	GAF / Spring Compensated Gripper Arm for Vacuum Cups	148
	GAF U / Spring Comp. Gripper Arm for Vac. Cup, w. air duct	149
	GFV U / Gripper Arm, spring comp., lock. ag. rot., w. air duct	150
<b>New</b>	GIF U T / Gripper Arm, internal spring, telescope	151
	GGG / Gripper Arm, spring comp., lock. ag. rot., for Vacuum Cups	152
	GGK / Gripper Arm, spring compensated, with a Linear Guidance	153
<b>New</b>	GGK A / Gripper Arm, linear guidance, spring comp., lock. ag.rot., axial	154
<b>New</b>	GGK A R / Gripper Arm, linear guidance, rotation free, axial	155

## 400 Grippers



	Application Examples 400	146
	Application examples 400	156
<b>New</b>	GRZ 10-08 / Gripper Size 10-08	164
	SH GRZ 10-08 / Sensor Bracket	166
	VL U / Extension with air duct for GRZ 10	166
	AGP GRZ / Adapter for GRZ Board Mounting	166
	GRZ 10-12 / Gripper Size 10-12	167
	GRZ 14 R / Gripper with Chequered Jaws	170
	GRZ 14 R,CS,I / Gripper with Chequered Jaws and Sensor with Plug	170
	GRZ 14 D A / Gripper, double acting	171
	GRZ 14 Body	172
<b>New</b>	GRZ 14 Gripper Jaws / Gripper Jaws Size 14	172
	SH GRZ 14 / Sensor Mounting Bracket	174
	AD GRZ 14 U / Adapter with Air Duct	174
<b>New</b>	AAE / Sprue Shifter for gripper GRZ	175
	GRZ 20-16 / Gripper Size 20-16	176
<b>New</b>	GRZ 20-16 K / Gripper Size 20-16, boosted	179
	GRZ AD 20-16 / Gripper Extension Adapter	180

	GRZ-20-16 HW / Jaw Hook for GRZ 20-16	180
	GRZ 20-20 R / Gripper with hard coated Aluminium Jaws	181
	GRZ 20-20 R,CS,I / Gripper with Sensor, inductive	181
<b>New</b>	GRZ 20-20 AS / Gripper with adapted Scissors	182
	GRZ 20 / Body	183
<b>New</b>	GRZ 20 Gripper Jaws / Gripper Jaws Size 20	184
	AD 20 GRZ 20 / AD 14 GRZ 20 U / Adapter	186
	SH GRZ 20 / Sensor Bracket	186
<b>New</b>	AD GRZ 20 S / Adapter, sidewise connection	187
	GRZ 25 / Grippers Size 25	188
	GRZ 25 Body	189
<b>New</b>	GRZ 25 Gripper Jaws / Gripper Jaws Size 25	190
<b>New</b>	GRZ 32 / Grippers Size 32	192
<b>New</b>	AD GRZ 32 S / Adapter for mounting GRZ 32 sidewise	194
<b>New</b>	PGR-P / Parallel Gripper, pneumatic	195
	AS-P PGR-P / Sensor Bracket Precise for PGR-P	197
	GB PGR / Unmachined Jaws for Parallel Gripper	197
<b>New</b>	AP-P PGR / Adapter for PGR-P and PGR for profiles	198
	AP PGR / Mounting Bracket for PGR-P and PGR	198
	PGR / Parallel Gripper	199
	IGP 14 / ID Gripper	200
	IGP 20 / ID Gripper	201
	IGB / ID Gripper, Bellow	202
<b>New</b>	IGB H / Innengreifer, Bellow, Lifting	203
	AD IGB / Adapter for IGB	204
	SH IGB / Sensor Bracket for IGB	204
	Exchange Bellows for ID Gripper IGB	205

## 450 Gripper Fingers



	Application examples 450	206
	GRF 95° / Gripper Finger	209
	GRF 95° EP / Gripper Finger with EP covering	209
	GRF 35° / Gripper Finger	210
	GRF 90° / Gripper Finger	210
<b>New</b>	GRF 95° P2 / Gripper Finger with Precision Monitoring	211
<b>New</b>	GRF 95° EP P2 / Gripper Finger w. EP covering and Precision Monitoring	211
<b>New</b>	GRF 35° P2 / Gripper Finger with Precision Monitoring	212
	GRW 35° / Gripper Finger	212
	GFD 90 / Double Action, Cam Locking Gripper Finger	213
	GRF SH AL and GRF SH ICS / Positioning of Sensor Clamp	214
	QGR 20 / Crosswise Gripper	215
<b>New</b>	PMG / Pneumatic Magnetic Gripper	216
	GRF SH AL / Sensor Mounting Bracket	217
	GRF SH MFS + ICS / Sensor Mounting Bracket	217
	ZTS PA / Gripper Finger Guide (for GRF ...)	218
	ANS PA / Gripper Holding Bracket	218
<b>New</b>	ANS AL EP CS / Holding Bracket with EP coating and monitoring	219
	ANS 20 PA EP / Gripper Holding Bracket, with EP coating	220
	ANS PA K / Gripper Holding Bracket, convex	220

## 460 Needle Grippers



Application examples 460	221
NGR 12 D / Needle Gripper with Through Hole	224
NGR 12 DL / Needle Gripper w. Through Hole, Light Weight	224
<b>New</b> NGR 12-8 DK / Needle Gripper, 8 Needles, with Through Hole, compact design	225
NGR 12-8 D / Needle Gripper, 8 Needles, w. Through Hole	226
NGR 12 / Needle Gripper	226
NGR 12-6 / Needle Gripper with 6 Needles, adjustable	227
NGR 16-18 EZ / Needle Gripper, compact, adjustable	228
NGR 12-10 D / Needle Gripper with covered Contact Area	229
Draw Tube 20x100 NGR 12-10 D	230
GG-20-NGR / Spring compensated Gripper Arm for NGR 12-10 D	230
NGR 12-6 DS A / Needle Gripper, slim, PTFE coat. needles	231
NGR 20-6-25 D / NGR for Sheet Molding Compound Parts	232
NGR X 16-10 / Needle Gripper for X-Profile	233
Spare Needles for Needle Gripper	233

## 600 Nipper Bodies



Application examples 600	234
Safety instructions for handling manually operated nippers	236
ASN AR / Automatic-Round-Single Action	237
ASN HR / Manual-Round	237
ASN HRK / Manual-Round with Power Booster	238
ASN ARK / Automatic-Round-Power Booster	238
ASN AQ / Automatic - Square	239
ASN ARD / Automatic-Round-Double Action	239
ASN ARKS / Nipper Body, Automatic-Round-Power Boost-Durable	240
ASN AR VS / Nipper Body, Automatic-Round-Strengthened	241
ASN SE / Nipper Bodies 90° with Stroke	242
ASN HP / Mounting Bracket for ASN SE	242
ASZ AH / Sprue Gripper for Nipper Bodies ASZ and ASN	243
ASZ KA / Combination Clamp for Sprue Gripper + Nipper ASZ / ASN	243
ASZ KS / Mounting Bracket for Nipper Bodies ASN	244
ASZ KS BS / Mounting Bracket for Nipper Bodies ASN, Blue Scale	244
ASZ HS / Mounting Bracket for Nipper Body ASN	244
ASZ KF / Spring Loaded Mounting Bracket for ASN	245
ASN SB / Swivel Bracket for Nipper Body	245
<b>New</b> ASN ARKS KS / Mounting Bracket for Nipper Body ASN ARKS	246
ASN SH / Sensor Mounting Bracket for Nipper Bodies	246
ASN G / Stationary Cutting Unit „Guillotine“	247

## 610 Nipper Blades



Cutting abilities Nipper Blades	248
SES / Nipper Blades Standard	249
SES-3 / Nipper Blades Standard for ASN 3	249
SES-5 / Nipper Blades Standard for ASN 5	249
SES-7 / Nipper Blades Standard for ASN 7	250
SES-10 / Nipper Blades Standard for ASN 10	251
SES-20 / Nipper Blades Standard for ASN 20	252
SES-30-50 / Nipper Blades Standard for ASN 30-50	253
SES 20 / Nipper Blades with Inverted Cutting Edge	254
SES-30-50 / Nipper Blades with Inverted Cutting Edge	254
SEW / Nipper Blades, 90° Angle	255
SEW-20 / Nipper Blades with 90° Angle for ASN 20	255
SEW-30-50 / Nipper Blades with 90° Angle for ASN 30-50	257
SEK / Nipper Blades, „Pinch“	258
SEK-7 / Nipper Blades „Pinch“ for ASN 7	258
<b>New</b> SEK-10 / Nipper Blades „Pinch“ for ASN 10	258
SEK-20 / Nipper Blades „Pinch“ for ASN 20	259
SEK-30-50 / Nipper Blades „Pinch“ for ASN 30-50	259
SEZ / Z-Form	260
SEG / Nipper Blades, Straight Form	261
SEG-3 / Nipper Blades, Straight Form for ASN 3	261
SEG-5 / Nipper Blades, Straight Form for ASN 5	261
SEG-20 / Nipper Blades, Straight Form for ASN 20	261
SEG-30-50 / Nipper Blades, Straight Form for ASN 30-50	262
SEK 20-45-17 / Nipper Blade, Special Design, „Pinch“ 45°	263
SER 3-11,5-R2,5 / Nipper Blade, Special Design, Radius	263
SEG ASN SE / Nipper Blades Straight for ASN SE	264
SEG-ASN-ARD / Nipper Blades Straight Form for ASN ARD	265
SEF / Spare Springs for Cutter Blades	265
SEG-ASN-ARD / Nipper Blades for ASN 50 AR VS	266
SE... ARKS / Nipper Blades for ASN ARKS	267
SK / Nipper Blade Protectors	268

## 700 Special Elements



Application examples 700	269
HUZ / Gripper with Stroke	276
HUZ D / Gripper with Double Stroke	277
HUZ 25 / GRZ 25 with Stroke	278
HUZ 25 D / GRZ 25 with Double Stroke	279
HUZ-P D / Gripper with Double Stroke, Precision Slide	280
HUZ-P 25 D / Gripper with Double Stroke, Precision Slide	281
HUZ P / Gripper with Stroke, Precision Slide	282
HUZ P 25 / Gripper with Stroke, Precision Slide	283
<b>New</b> HUZ-PL 32 / Greifzange auf Hub, Präzisionsgleitlager, Leichtbau	284
<b>New</b> HUZ-PL 32 D / Greifzange auf Doppelhub, Präzisionsgleitlager, Leichtbau	285
ZSM-HUZ PZ / Stopover for HUZ-P	286
AU HUZ-P / Adapter for HUZ-P	287
ZHS / Stroke unit for vacuum cups	288

<b>New</b>	ZHS VG / Stroke unit for vacuum cups, non-rotating	288
<b>New</b>	HUS / Double Stroke Unit for Vacuum Cups	289
	G-HUS 32-20 / Stroke Unit for Vacuum Cups, locked against rotation	290
<b>New</b>	HUS DUV 32-30 / Stroke Unit for Vacuum Cups, locked against rotation, double acting, with air duct	291
	HUE / Slide Unit	292
	HUE G / Slide Unit with Sliding Guide	293
	HUE X / Slide Unit for adapting X-Profile	294
	HUE G Profile / Slide Unit with Sliding Guide on Profile	295
	ZHG / Cutter Slide	296
	ZHD / Cutter Slide, double acting	296
	KHR / Blade Holder	297
	DKZ / Mounting Bar, central	297
	KHR-S / Blade Holder, swivelling	298
	DB / Stroke Reducer	299
	KHZ / Short Stroke Cylinder	299
	SZD / Special Cylinder	300
	ADZ / Adapter for Short Stroke Cylinder KHZ and SZD	301
	GAZ / Gripper Arm for Short Stroke Cylinder KHZ and SZD	301
	GAZ S / Gripper Arm for Short Stroke Cylinder with Swivel	302
<b>New</b>	GAZ SK / Gripper Arm for Short Stroke Cylinder with Swivel, conical clamping	303
	VLR / Extension Tubes	304
	ZTB / Centering Pin	304
	DPL / Pressure Plate for Short Stroke Cylinder	305
	DPL PU / Pressure Plate for Short Stroke Cylinder	305
	DST / Pressure Plate	305
	HEU 10 / Stroke Unit with Piston-Ø 10 mm	306
	HEU / Stroke Unit with Piston-Ø 16 mm	307
	HEU L 16 / Stroke Unit Light Weight with Piston-Ø 16 mm	308
	HEU 20 / Stroke Unit with Piston-Ø 20 mm	309
	HEU 25 / Stroke Unit with Piston-Ø 25 mm	310
<b>New</b>	GP HEU / Adapter Plate for Stroke Unit	311
	KN HEU / Mounting Adapter for Needle Gripper on Stroke Units	311
	HEU 16 A XY / Adapter for XY-Stroke Unit	312
	AE HEU / Mounting Adapter for HEU Stroke Unit	312
	AU HEU / Mounting Adapter for HEU Stroke Unit	313
	AP HEU / Mounting Adapter for Stroke Units to a Profiles	313
	A3 HEU 10 / Mounting Adapter for HEU 10 with 3 Mounting Options	314
	ADU / Universal Mounting Bracket	315
	AP ADU / Flange for Adapter Plate ADU	315
	VHE 20 / Vacuum-Stroke Unit	316
<b>New</b>	VHE 20 VG / Vacuum-Stroke Unit, non-rotating	316
	SF 20 / Stacking Guide	316
	SFP / Stacking Guide Specific	317
	ZTE V / Docking Finger, Pneumatic	318
	ZBU V / Docking Connector	318

## 800 Electronica and Sensors



Application examples 800	319
LES 6 / Photoelectric Sensor - Compact	320
LRS 18 / Photoelectric Sensor - Cylindric	320
GGE 14...F / Gripper Arm for Photoelectric Sensor LES – 6	321
SH / Sensor Bracket for round sensors	321
SEO 5 / Mechanical Switch without Cable	322
SEO 10 / Mechanical Switch without Cable	322
GEO 10 / Housing for Mechanical Switch SEO 10	322
VTY / Splitter Y-Form	323
ASY / Adapter Y-Form	323
ICS 8 / Sensor, C-Nut, Plug, M8	324
IEK 8 / IES 8 / Sensor	324
MFS T2 3,7 / Sensor with two Acting Points „Teachable“	325
IRK 4 / Proximity Switch for Parallel Gripper PGR-P and PGR	325
IE AL K / Proximity Switch	325
KK / Junction Box	326
EVM / Bus Module	326
RPL / Relay Board	327
RPLG / Relay Board with Enclosure	327
LPL / Logical Board, LPL-G(-S) / Logical Board with Box	328
KG / Connector with Cable 3, 4 or 8 Pin Female	330
KW 18 / Elbow Connector 3 or 4 pin Female with Cable	330
VRS 8 / Plug and Socket Connection 3 and 4 Pin	330

## 850 Pneumatics



VAE 10 / Vacuum Producer with Blow-Off	332
VEL / Vacuum Producer – Lightweight	332
STV / Smart Flow Valve	333
PSS / Pneumatic Hose	333
PDA / Seal Ring	334
STA / Straight Quick Hose Connector	334
VSL, PSL / Quick Hose Connector L-90°	335
VSL / Quick Hose Connector L-90°	335
PSL / Quick Hose Connector L-90°	335
STG / Straight Quick Connector	335
STT / T Hose Quick Connector	336
STX / X Hose Quick Connector	336
STY / Y Hose Connector	336
DRV / One Way Restrictor	337
PSK / Quick Release Coupling	337
STN / Plug-In Nipple	337
PDN / Double Union with Hex	338
RNL / Reducing Union Long	338
RNK / Reducing Union Short	339
PMM / Thread Coupling	339
PVS / Hex Plug	339
SVG / Straight Hose Connector	340
SVT / T Hose Connector	340
SVL / L Hose Connector	340
SVY / Y Hose Connector	341
SVV / V Hose Connector	341

PSD / Silencer	341
ADS / Exhaust Throttle-Silencer	342
SEV / Quick Exhaust Valve	342
FSL / Particle Filter for Vacuum or Pneumatic Lines	342

## 990 Tubular System / Micro System



Application examples Tubular-System	343
<b>New</b> Tubular-System EOAT Baseframe Kit3	43
<b>New</b> GPM R / EOAT (Robot Hand) Base Plate, Tubular-System	344
<b>New</b> RVG / Connector for Base-Plate GPM	345
<b>New</b> R-Profile / Tubular-System	345
<b>New</b> RV 1 / Connector, round	346
<b>New</b> VLK 1 / Extension, single-cone	346
<b>New</b> RV 2 / Double-Connector, round	347
<b>New</b> VLK 2 / Extension, double-cone	347
<b>New</b> RK K / Mounting Adapter Cone	348
<b>New</b> RKN K / Mounting Adapter for VLK	348
<b>New</b> RKN G / Mounting Adapter for panels	349
<b>New</b> RKT / Connector, round, T-style	349
<b>New</b> RKW / Connector, round, angle 45°	350
<b>New</b> ADK R / Profile End Cap, round	350
Micro Series EOAT Kit	351
WST L 6 U / Universal Angle Clamp „Micro Series“	352
WSL L 6-25 U / Universal Long Angle Clamp „Micro Series“	352
KVB L 6 / Cross Connector „Micro Series“	352
KKS 6-6-10 / Cross Connector „Micro Series“	353
<b>New</b> PKS / Parallel Connector „Micro Series“	353
RMB-ROB / Reduction with and without collar „Micro Series“	353
VS N3 A / VN N3 A / Vacuum Cups Nitril, antistatic „Micro Series“	354
WKA 6-6 / Angle Arm „Micro Series“	355
GSE U 6 / Gripper Arm for Suction Cups with air duct „Micro Series“	355
GGE 6 / Swivel Head Gripper Arm for Vacuum Cups „Micro Series“	356
GAF U 6 / GAF U 6 M / Spring Comp. Grip. Arm f. Vac.Cups, air duct „Micro Series“	356
GRZ 06-06 / Gripper Size 06-06 „Micro Series“	357
GRZ 06-06 / Gripper Size 06-06 with EP Coating „Micro Series“	357
GRZ 10-06 / Gripper Size 10-06 „Micro Series“	358
<b>New</b> GRZ 06-08 / Gripper Size 06-08 „Micro Series“	358

## 990 3D Printing / EP Coating / Others



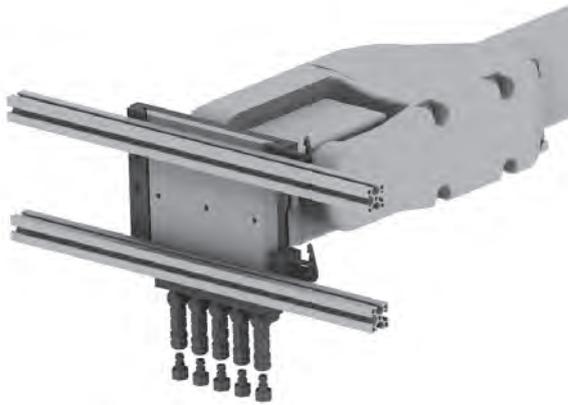
EOAT Training in our facility	359
Robot gripper installation at your facility	359
EOAT Starter Kit	359
KUG / Glue and Polyurethane Pad	359
EP / Elastomeric Polyurethan Coating	360
PA-Forming / 3D Printing made by SLS Laser Sinter	361
Application examples / 3D Printing	362
PGR-E / Parallel Gripper, electrical	363
NGR 16-18 EE / Needle Gripper, adjustable, electrical	363
Bin Picking	364
Assembly Fixture / Table Top	364
Assembly Fixture / Mobile	365

## **New** Solutions for E-Mobility 366

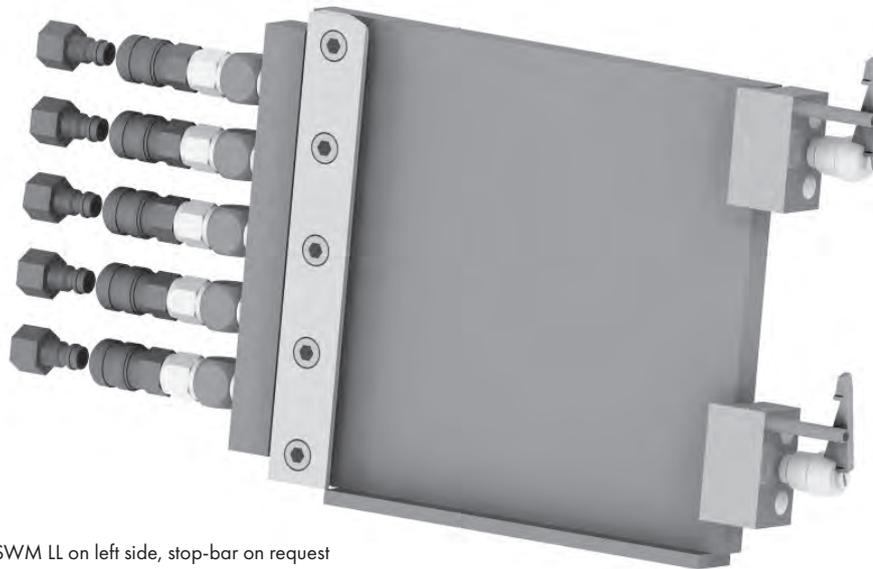
## **New** Solutions for Flexible Materials 368

## Index 370

## Application examples SWM



Special GPM, only on request



For mounting SWM LL on left side, stop-bar on request



## Handling Weight SWM

Recommended maximum handling weights of the various SWM sizes:

Description	Handling Weight [kg]
SWM 01	1
SWM 0	5
SWM 1	10
SWM 2	20
SWM 3	40
SWM 3S	60
SWM 0 E	3
SWM 1 E	6,5
SWM 2 E	12

Handling weights depending on center of gravity distance, hole pattern, acceleration values of the robot etc.

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

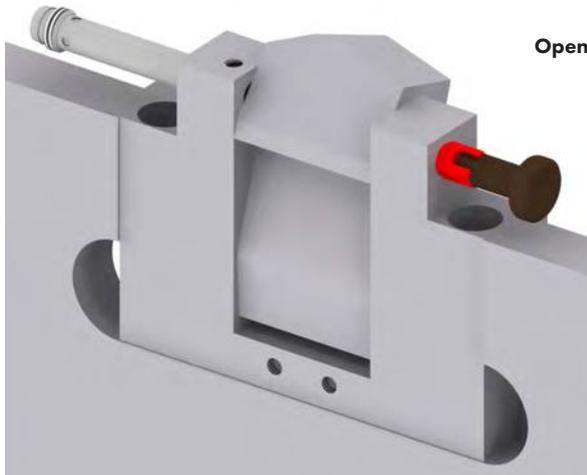
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

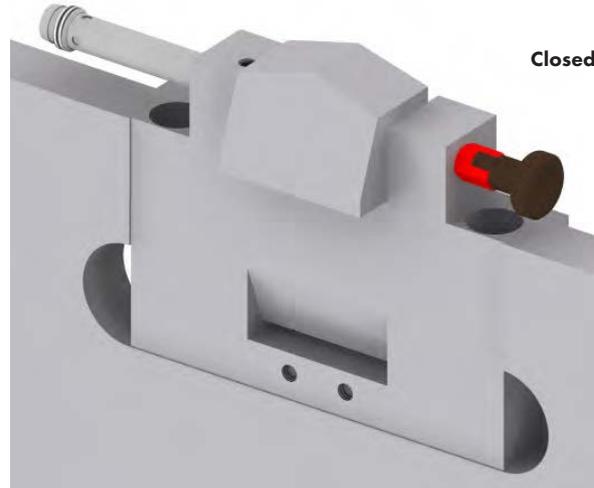
**990**  
PA-Forming  
Others

**Application examples SWM Safety-Lock**

Only SWM 3, SWM 3-S, SWM 3-OSK and SWM 3-S-OSK.



Open

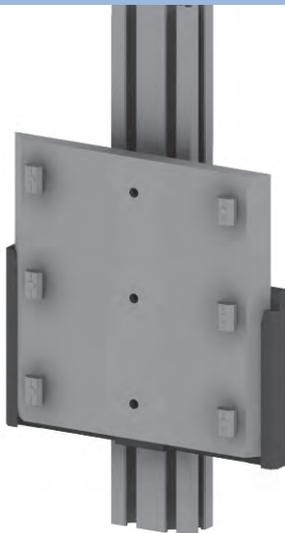


Closed

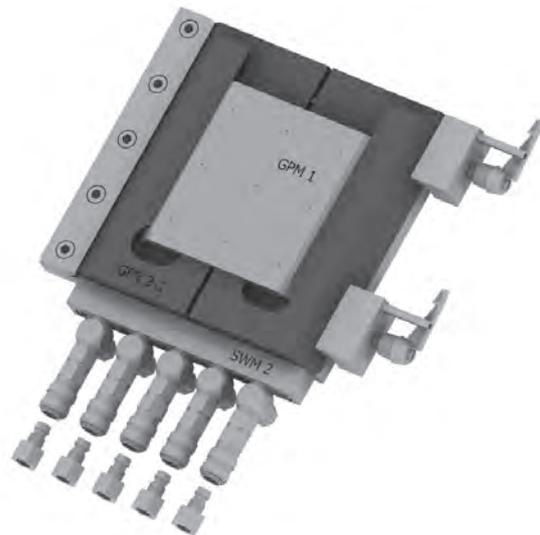
**Application example SWM KH**



**Application example GHV**



**Application example GPR**



**Application examples GPG**



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## Application example SWH



## Application example GHV-SWH and GP SWH G



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**Application example SWH-PG and SWH-PR**



With the SWH-PG/PG 4, a spacer is installed in the SWH 50 (far left) and SWH 150 (third from left). The figure on the right shows the SWH-PG/PR 2.

The SWH-PG/PR 2 90 is suitable for the SWH 90 series.

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

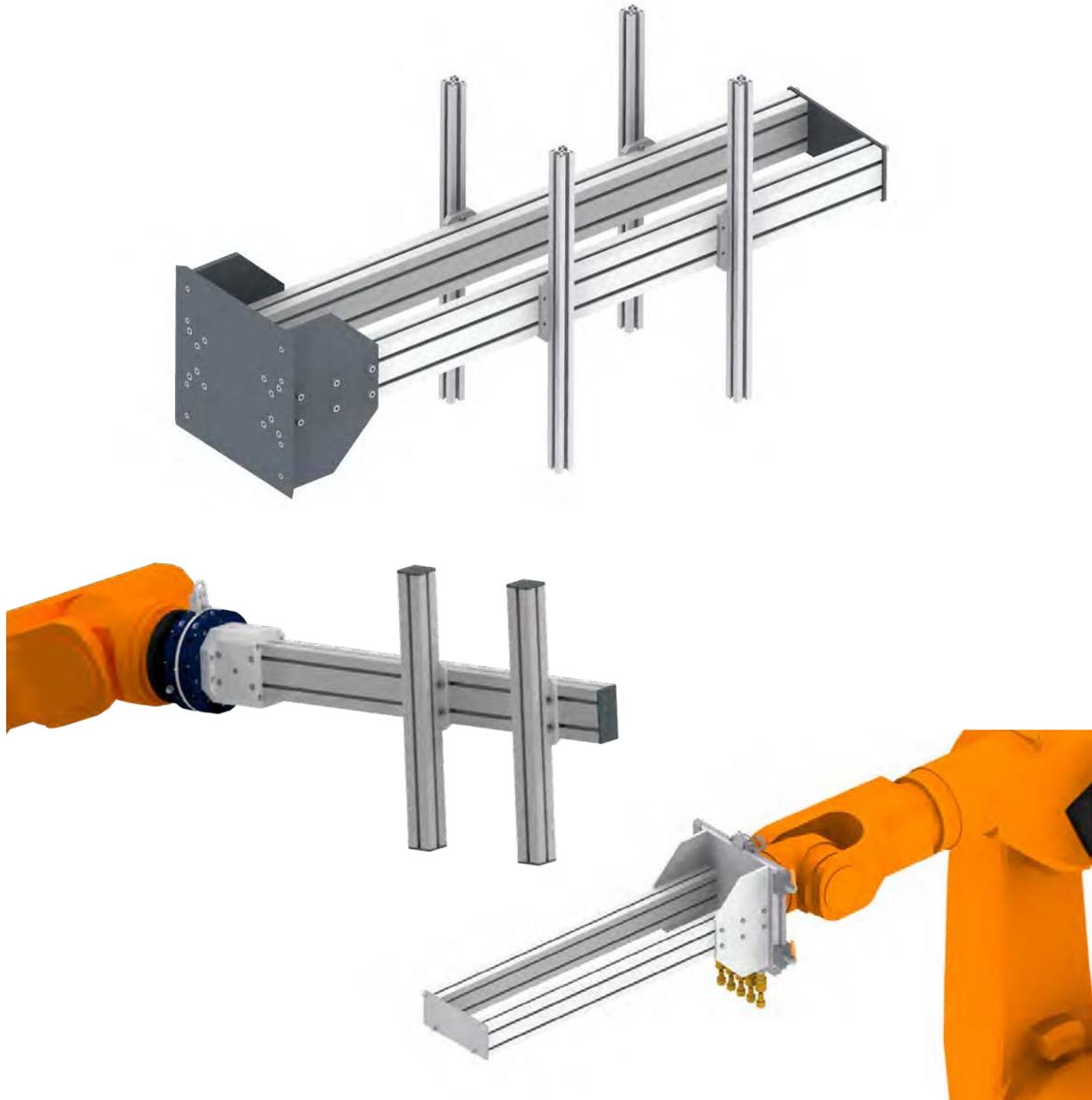
**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**Application examples G6A**



**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

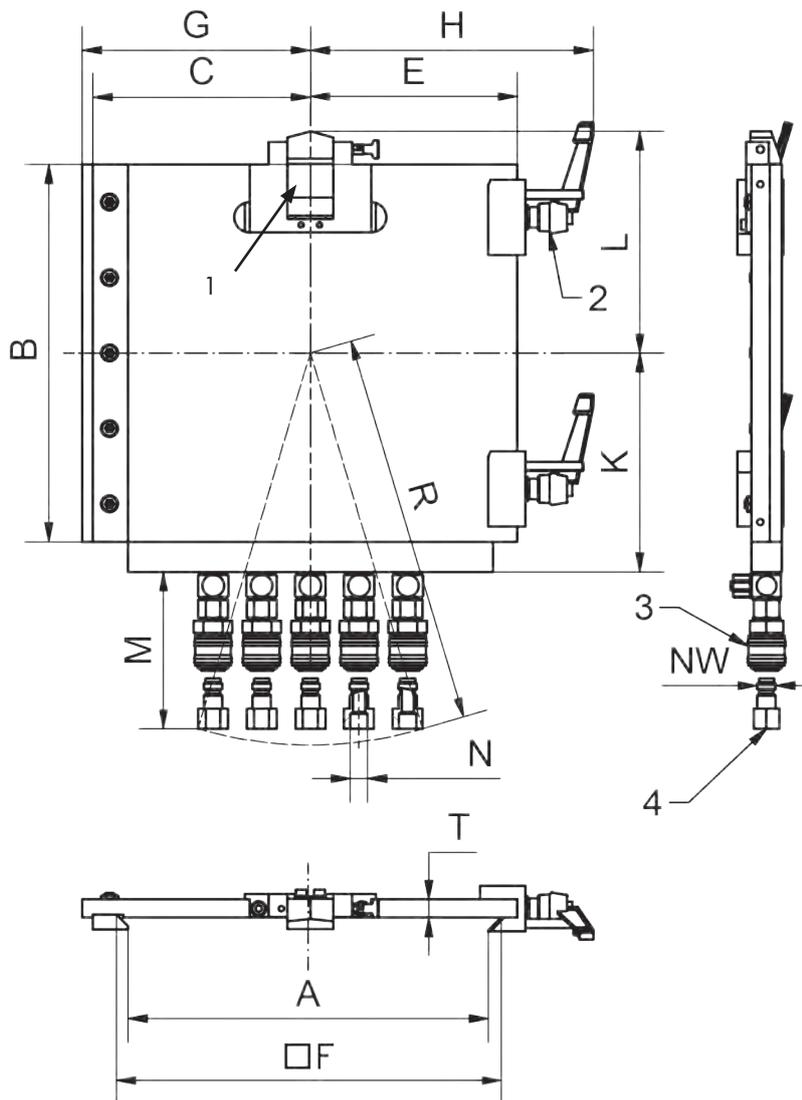
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWM / Quick Change System



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## SWM / Quick Change System (Continuation)

**Remarks:**

**Application: complete quick change system to set up robot hands and mount them to the robot**

- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- integrated pneumatic
- quick release couplings
- **SWM 3-S: made of galvanized steel, GPM also made of steel**
- **safety latch only for SWM 3 and SMW 3-S**
- **indictive monitoring possible (sensor on demand)**

**Drawing:**

- 1 security latch system only with SWM 3 and 3-S
- 3 air connections
- 4 STN plug in nipple
- NW plug in nipple size

**Scope of delivery:**

- Quick change system
- 2 base plates (GPM)
- pneumatic connection
- 1 set of plug in nipples (STN)

**Customized hole pattern for individual robot systems on request.**

**Sensor for security latch (SWM 3 and 3-S) on request.**

### Dimensions

Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	L [mm]	M [mm]	N [mm] ["]
1-000-05-00	SWM 01	29	40	25	22	40	28	32	26	20		
1-000-10-00	SWM 0	45	60	38	33	60	37,5	43	38	30	27	M5
1-000-15-00	SWM 1	85	100	58	54	100	57,5	63	58	50	27	M5
1-000-20-00	SWM 2	141	160	101	79	160	101	130	96	80	60	G1/8
1-000-25-00	SWM 3	231	250	150	136	250	150	186	145	147,5	65	G1/4
1-000-26-00	SWM 3-S	231	250	150	136	250	150	186	145	147,5	65	G1/4

### Pneumatic Features

Part No.	Description	NW [mm]	R [mm]	T [mm]	No. of plugs	STN connector	number of hand levers	Safety latch	Material	Weight [g]
1-000-05-00	SWM 01			13.5			1		Aluminum	198
1-000-10-00	SWM 0	2.5	75	10	5	M5	2		Aluminum	559
1-000-15-00	SWM 1	2.5	100	10	5	M5	2		Aluminum	1037
1-000-20-00	SWM 2	5	200	12	5	G 1/8	2		Aluminum	3039
1-000-25-00	SWM 3	8	265	12	5	G 1/4	2	X	Aluminum	7212
1-000-26-00	SWM 3-S	8	265	12	5	G 1/4	2	X	Steel	12856

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

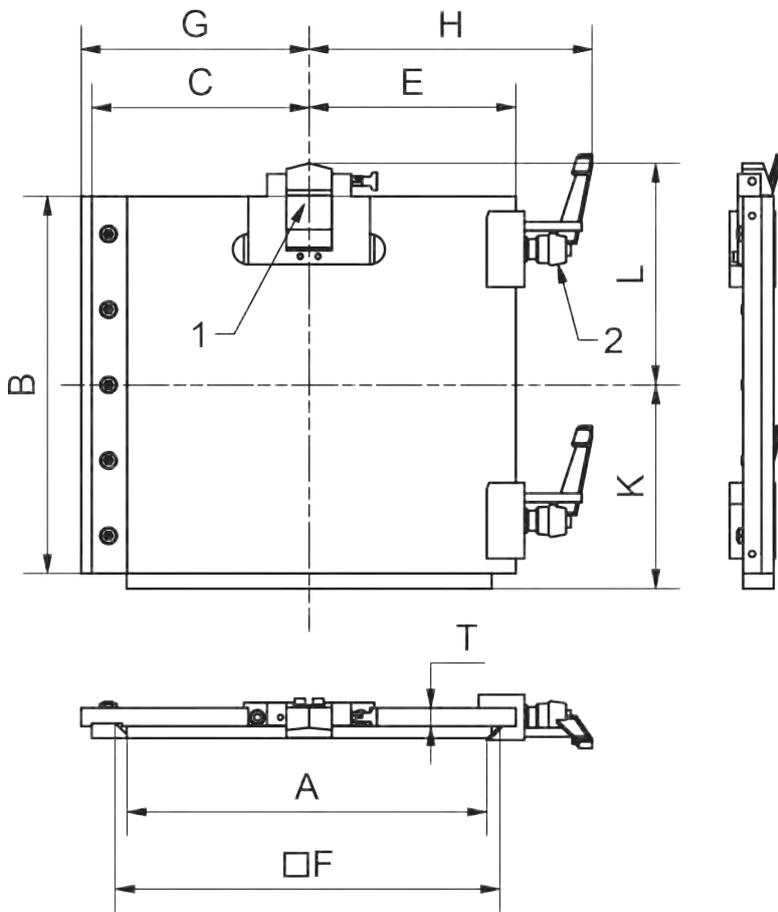
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWM OSK / EOAT (Robot Hand) Quick Change Chuck



**Remarks:**

- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- quick release couplings
- chuck mechanism made of steel
- SWM 3-S-OSK made of steel for higher payloads
- straight pin for avoiding unwanted loosening of hand lever
- safety latch only for SWM 3 OSK and SMW 3-S OSK
- **inductive monitoring possible (sensor on demand)**

**Drawing:**

1 security latch only on SWM 3 OSK

**Scope of delivery:**

- SWM without pneumatic connections and base plates

**Customized hole pattern for individual robot systems on request.**

**Sensor for security latch (SWM 3/3-S OSK) on request.**



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	L [mm]	T [mm]
1-000-40-00	SWM 0 - OSK	45	60	38	33	60	37.5	43	35	30	10
1-000-43-00	SWM 1 - OSK	85	100	58	54	100	57.5	63	55	50	10
1-000-46-00	SWM 2 - OSK	141	160	101	79	160	101	130	85	80	12
1-000-49-00	SWM 3 - OSK	237	250	150	136	250	150	186	135	147.5	12
1-000-53-00	SWM 3-S - OSK	237	250	150	136	250	150	186	135	147.5	12

Part No.	Description	number of hand levers	Safety latch	Material	Weight [g]
1-000-40-00	SWM 0 - OSK	2		Aluminum	274
1-000-43-00	SWM 1 - OSK	2		Aluminum	492
1-000-46-00	SWM 2 - OSK	2		Aluminum	1391
1-000-49-00	SWM 3 - OSK	2	X	Aluminum	3210
1-000-53-00	SWM 3-S - OSK	2	X	Steel	7507

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## SWM LL / Pneumatic Connection for Quick Change System



**Remarks:**

- dimensions for pneumatic connection see SWM

**Drawing:**

- Ø A quick connect EOAT (Robot Hand) side
- Ø B pneumatic connector to robot

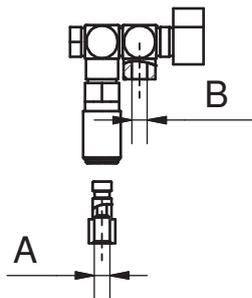
**Scope of delivery:**

- set of Plug-In Nipple (STN) and screws

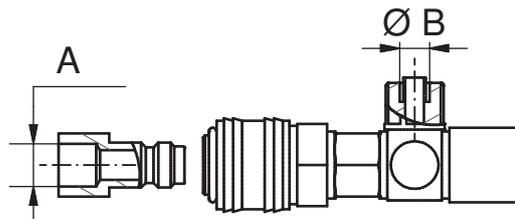
**Accessories e.g.:**

- Straight Quick Hose Connector STA
- Pneumatic Hose PSS

SWM LL 0 / SWM LL 1



SWM LL 2 / SWM LL 3



Part No.	Description	Number of connectors	A [mm]	B [mm] for hose	Weight [g]
1-000-10-04	SWM 0 LL 5	5	M5	M5	156
1-000-10-07	SWM 0 LL 7	7	M5	M5	220
1-000-15-04	SWM 1 LL 5	5	M5	M5	166
1-000-15-07	SWM 1 LL 7	7	M5	M5	226
1-000-20-04	SWM 2 LL 5	5	G1/8	4x 6/4 - 1x 8/6	418
1-000-20-07	SWM 2 LL 7	7	G1/8	6x 6/4 - 1x 8/6	565
1-000-20-09	SWM 2 LL 9	9	G1/8	8x 6/4 - 1x 8/6	717
1-000-25-05	SWM 3 LL 5	5	G1/4	5x 8/6	891
1-000-25-11	SWM 3 LL 7	7	G1/4	7x 6/4	1153
1-000-25-13	SWM 3 LL 9	9	G1/4	9x 6/4	1,836

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## GPM / EOAT (Robot Hand) Base Plate

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
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Needle Gripper

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**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

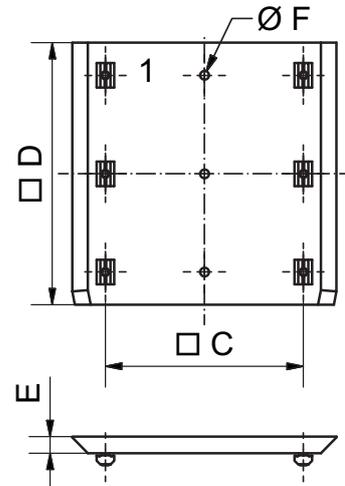
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

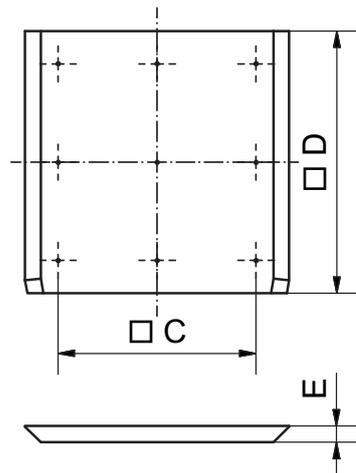
**990**  
PA-Forming  
Others



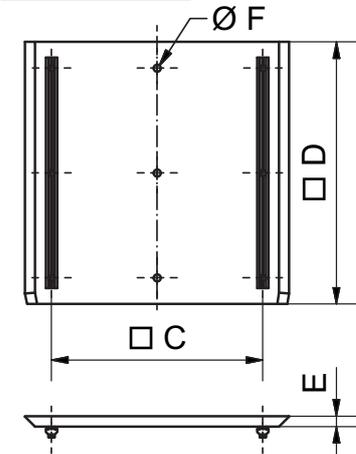
Version 1



Version 2



Version 3



## GPM / EOAT (Robot Hand) Base Plate

### Remarks:

#### Version 1:

- with channel nuts respectively sunk screw and bore holes

#### Version 2:

- without channel nuts
- GPM are marked (dimension C)
- GPM 1 V: thicker plate for higher payloads, reinforced version of GPM 1 for better countersinking of screws
- GPM 3 S (Steel): for higher payloads

#### Version 3:

- with end-to-end channel nut and bore holes
- easy mounting, strong connection
- profiles can be mounted length- or crosswise

**Customized hole pattern for individual robot systems on request.**

### Remarks for scope of delivery:

- SK = sunk screw (DIN 6912)
- GWP = channel nut with one bore hole and screw (DIN 912)
- GWP3 = long channel nut with three bore holes and screws (DIN 912)

Part No.	Description	Version/Scope of delivery	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-005-05-00	GPM 01	Version 2, without GWP, without marking	-	40	8	-	Al	29
1-005-10-00	GPM 0	Version 2, without GWP, with marking	35	60	8	-	Al	71
1-005-15-00	GPM 0 L	Version 1, 4x SK, M4, for L 18-10 and X 25-10 Profile	35	60	8	-	Al	74
1-005-17-00	GPM 0 L/X	Version 1, 4x GWP, M4, optimal for L 18-18 and X-Profile	35	60	8	-	Al	96
1-005-25-00	GPM 1	Version 2, without GWP, with marking	70	100	8	-	Al	198
1-005-27-00	GPM 1 L	Version 1, 4x SK, M4, for L 18-10 and X 25-10 Profile	70	100	8	-	Al	202
1-005-28-00	GPM 1 V	Version 2, without GWP, with marking	70	100	10	-	Al	241
1-005-31-00	GPM 1 L/XV	Version 1, 4x GWP, M5, optimal for L 18-18 and X-Profile	70	100	10	-	Al	268
1-005-30-00	GPM 1 L/X	Version 1, 4x GWP, M5, optimal for L 18-18 and X-Profile	70	100	8	-	Al	225
1-005-40-00	GPM 2	Version 2, without GWP, with marking	120	160	10	-	Al	652
1-005-45-00	GPM 2 X	Version 1, 6x GWP, M5, optimal for X-Profile	120	160	10	5,5	Al	688
1-005-50-00	GPM 2 JU	Version 1, 6x GWP, M6, optimal for JU-Profile	120	160	10	6,6	Al	688
1-005-60-00	GPM 3	Version 2, without GWP, with marking	200	250	10	-	Al	1603
1-005-65-00	GPM 3 X	Version 1, 6x GWP, M5, optimal for X-Profile	200	250	10	5,5	Al	1644
1-005-66-00	GPM 3 X DN	Version 3, 2x GWP3, M5, optimal for X-Profile	200	250	10	5,5	Al	1778
1-005-70-00	GPM 3 JU	Version 1, 6x GWP, M6, optimal for JU-Profile	200	250	10	6,6	Al	1663
1-005-71-00	GPM 3 JU DN	Version 3, 2x GWP3, M6, optimal for JU-Profile	200	250	10	6,6	Al	1787
1-005-62-00	GPM 3 S	Version 2, without GWP, with marking	200	250	10	-	Stahl	4695

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## GPM BP / EOAT Base Plate with Adapter



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

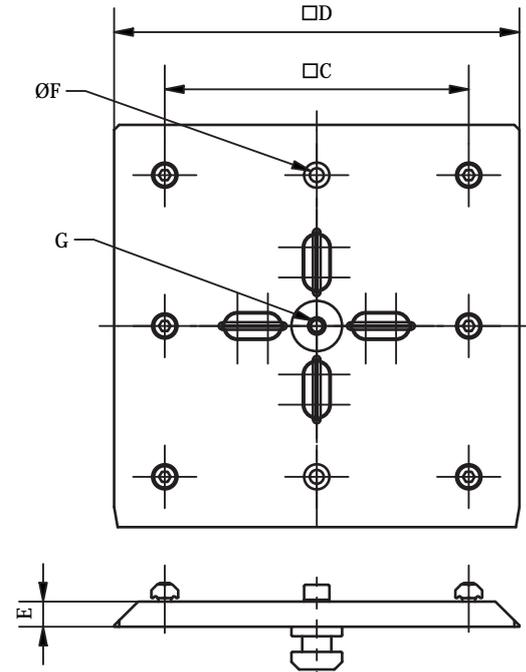
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

1-005-93-00



1-005-95-00



**Remarks:**

- special EOAT base plate for the appropriate quick-change system

**Scope of delivery:**

- includes mounting material

Part No.	Description	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-005-93-00	GPM 1 X BP	70	100	8	-	M6	243
1-005-95-00	GPM 2 X BP	120	160	10	5,5	M6	686

**GPM-SWH / EOAT Base Plate for SWH**



**Remarks:**

- special EOAT base plate for SWH Quick Change System
- SWH can be mounted directly on this base plate.
- for all profile systems: L, X, JU
- possibility to be mounted directly on SWM

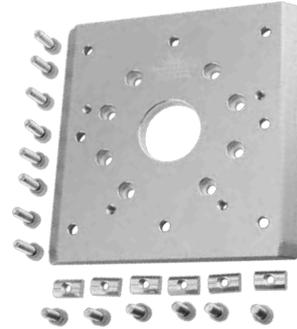
**Scope of delivery:**

- includes mounting material

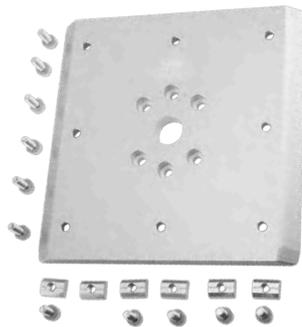
9-07-005-050-0



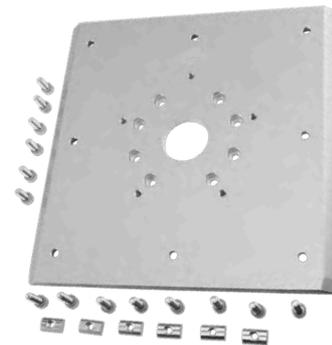
9-07-005-054-0



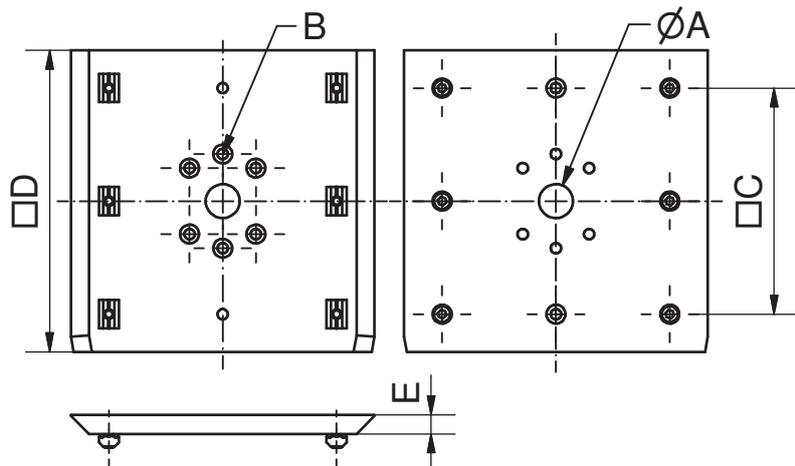
9-07-005-052-0



9-07-005-056-0



Application example



Part No.	Description	A [mm]	B Hole pattern	C [mm]	D [mm]	E [mm]	Compatible with profile	Weight [g]
9-07-005-050-0	GPM-1-SWH- G90	18	SWH-G90	70	100	10	L, X	251
9-07-005-052-0	GPM-2-SWH-G90	18	SWH-G90	120	160	10	L, X	661
9-07-005-054-0	GPM-2-SWH-G150	40	SWH-G150	120	160	10	X, JU	636
9-07-005-056-0	GPM-3-SWH-G150	40	SWH-G150	200	250	10	X, JU	1,562

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

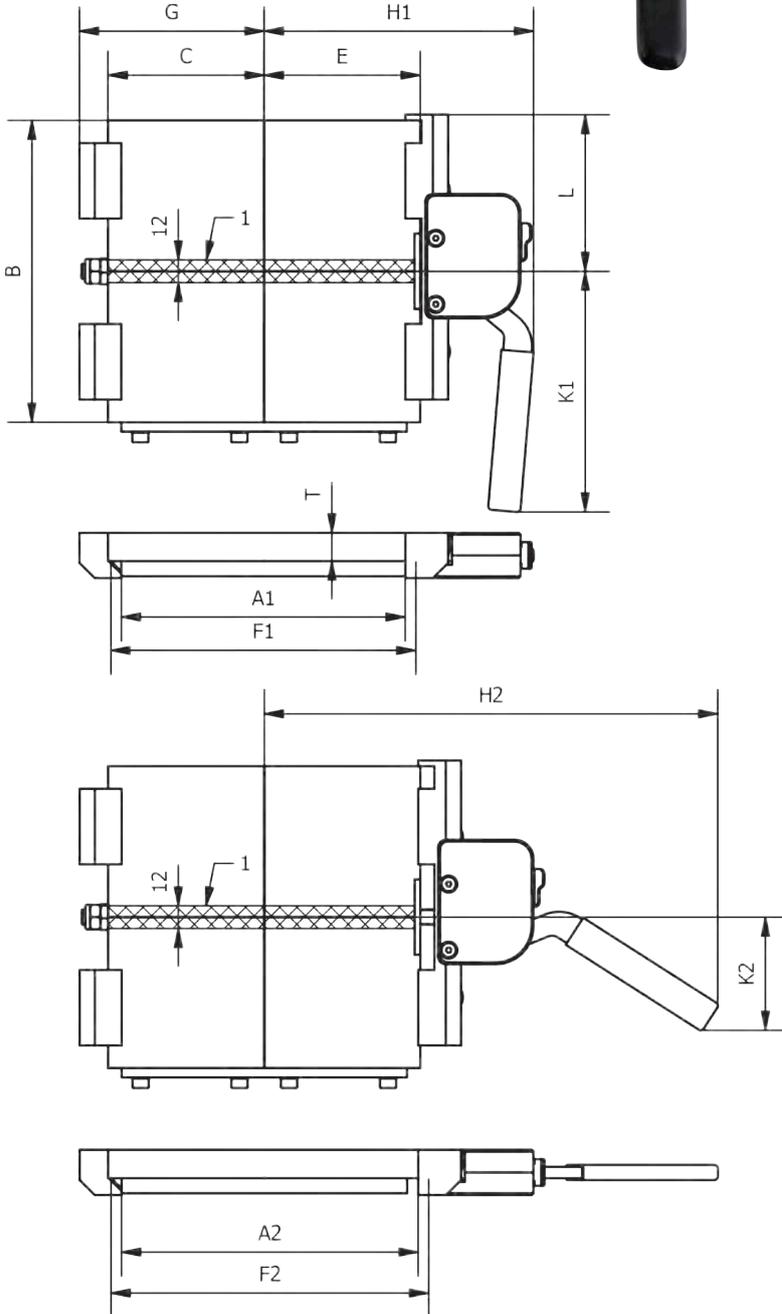
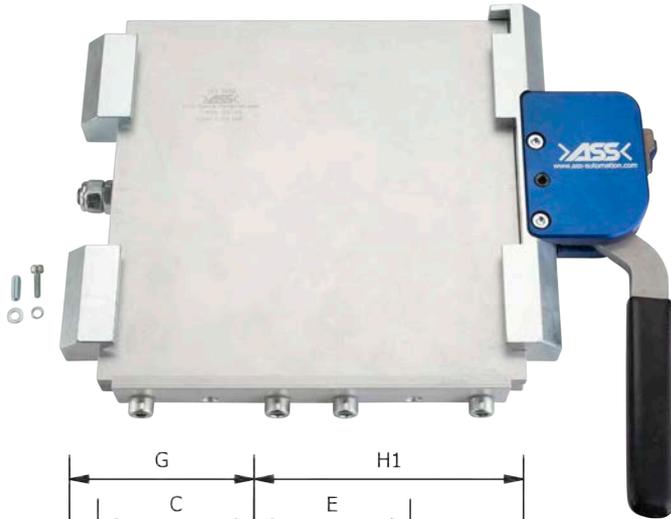
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWM KH / Quick Change System with Lever Locking Device



**Remarks:**

- with integrated safety lock against unwanted opening of the lever locking device
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand
- to preserve position of robot hand
- Material: Aluminium, clamps made of steel
- **inductive monitoring possible (sensor on demand)**

**Drawing:**

- 1 hatched area:  
no machining allowed!

**Scope of delivery:**

- SWM KH without pneumatic connections and base plates

**Accessories e.g.:**

- Sensor IEK 8 or IES 8
- Pneumatic Connection SWM LL
- Base Plate GPM

**Customized hole pattern for individual robot systems on request.**

050 Profiles Channel Nuts

100/115 Clamps

120 Profile Connectors

190 Profile Accessories

200 Vacuum Cup Connectors

220 Vacuum Cups

224 Special Vacuum Cups

230 Manifold

290 Adapters for Vacuum Cups

300 Gripper Arms

400 Gripper Parallel Gripper

450 Gripper Fingers

460 Needle Gripper

600 Nipper Bodies

610 Nipper Blades

700 Special Elements

800 Electrics and Sensors

850 Pneumatics

990 Tubular System Micro System

990 PA-Forming Others

Part No.	Description	A1 [mm]	A2 [mm]	B [mm]	C [mm]	E [mm]	F1 [mm]	F2 [mm]	G [mm]	H1 [mm]	H2 [mm]	K1 [mm]	K2 [mm]	L [mm]	T [mm]	Weight [g]
1-000-66-00	SWM 2 KH OSK	149	156	160	82	82	160	167	97	142	240	130	60	83	15	1900

## SWM E / EOAT (Robot Hand) Quick Change System, Extruded

### Remarks:

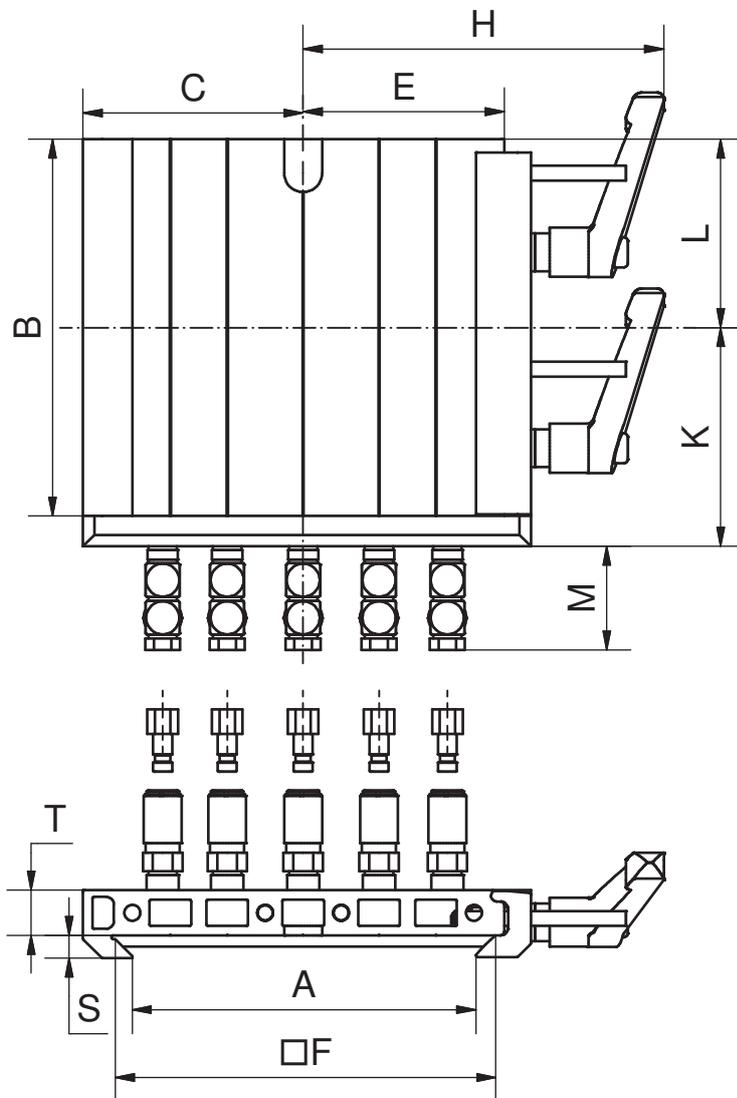
**Application:** complete extruded quick change system to set up robot hands and mount them to the robot

- extreme weight reduction compared to quick change system SWM
- EOAT (Robot Hand) base plate only fits in one direction
- all SWM E with toggle nut
- straight pin for avoiding unwanted loosening of hand lever
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand

### Scope of delivery:

- Quick change system
- 2 base plates (GPM E)
- pneumatic connection
- 1 set of plug in nipples (STN)

**Customized hole pattern for individual robot systems on request.**



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	H [mm]	K [mm]	L [mm]	M [mm]	S [mm]	T [mm]	Material	Weight [g]
1-002-05-00	SWM 0 E	51	60	38	33	60	75	38	39	27.5	6	12	Al	422
1-002-10-00	SWM 1 E	90.5	100	58	53	100	95	58	62.5	27.5	6	12	Al	815
1-002-15-00	SWM 2 E	150.5	160	90	83	160	122.6	92	90	59.5	5.7	14	Al	2199

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWM E OSK / EOAT (Robot Hand) Quick Change Chuck, Extruded

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

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Pneumatics

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Tubular System  
Micro System

**990**  
PA-Forming  
Others



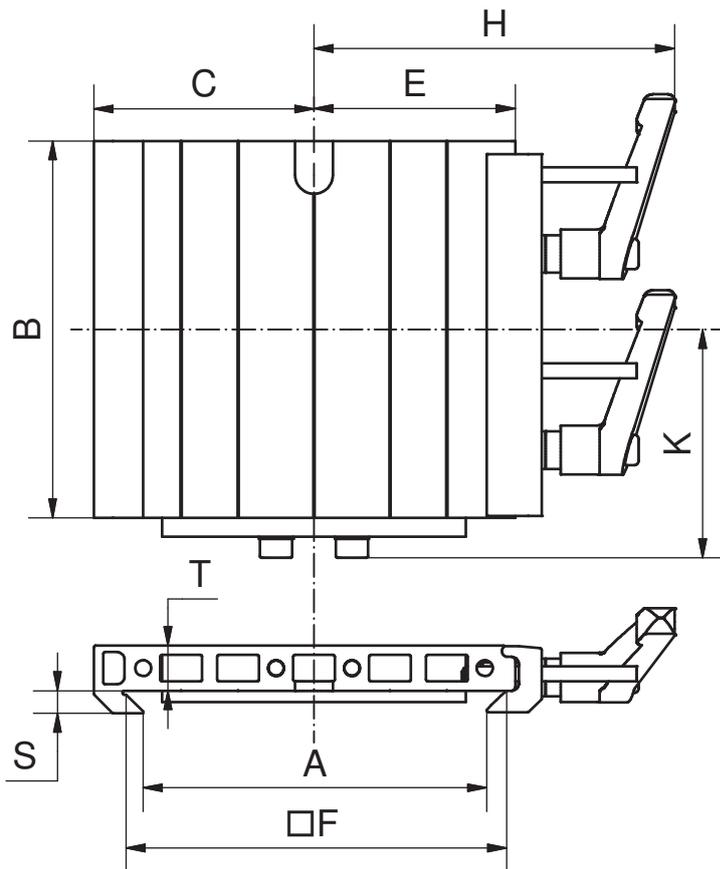
**Remarks:**

- extreme weight compared to standard quick changer
- EOAT (robot hand) base plate only fits in one direction
- all SWM E OSK with toggle nut
- straight pin for avoiding unwanted loosening of hand lever
- easy exchange of the EOAT (Robot Hand)
- extremely short EOAT (Robot Hand) change over times
- minimizes machine down time
- no need for demounting the robot hand

**Scope of delivery:**

- Quick change system without base plates and pneumatic connection

**Customized hole pattern for individual robot systems on request.**



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	H [mm]	K [mm]	S [mm]	T [mm]	Material	Weight [g]
1-002-40-00	SWM 0 E-OSK	51	60	38	33	60	75	37.6	6	12	Aluminum	173
1-002-43-00	SWM 1 E-OSK	90.5	100	58	53	100	95	60.6	6	12	Aluminum	371
1-002-46-00	SWM 2 E-OSK	150.5	160	90	83	160	122.6	91.6	6	14	Aluminum	905

## SWM E LL / Pneumatic Connection for Quick Change System, Extruded



**Remarks:**

- dimensions for pneumatic connection see SWM

**Drawing:**

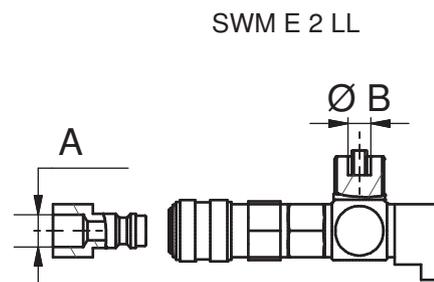
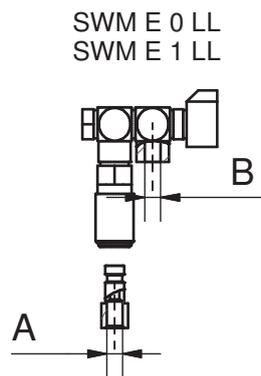
- Ø A quick connect EOAT (Robot Hand) side
- Ø B pneumatic connector to robot

**Scope of delivery:**

- set of Plug-In Nipple (STN) and screws

**Accessories:**

- Straight Quick Hose Connector STA
- Pneumatic Hose PSS



Part No.	Description	Number of connectors	A [mm] ["]	B [mm] for hose	Weight [g]
1-002-05-03	SWM E 0 LL 5	5	M5	M5	157
1-002-10-03	SWM E 1 LL 5	5	M5	M5	169
1-002-10-06	SWM E 1 LL 7	7	M5	M5	224
1-002-15-03	SWM E 2 LL 5	5	1/8	4x6/4-1x8/6	422
1-002-15-06	SWM E 2 LL 7	7	1/8	6x6/4-1x8/6	559

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## GPM E / EOAT (Robot Hand) Base Plate, Extruded

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

**220**  
Vacuum Cups

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Special  
Vacuum Cups

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Parallel Gripper

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Needle Gripper

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Nipper Bodies

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

Version 1



Version 2



**Remarks:**

- suitable for SWM E
- extreme weight reduction
- anti-rotation of the robot hand base plates by additional positive locking (dimension B)

**Version 1:**

- with channel nuts respectively sunk screw and bore holes

**Version 2:**

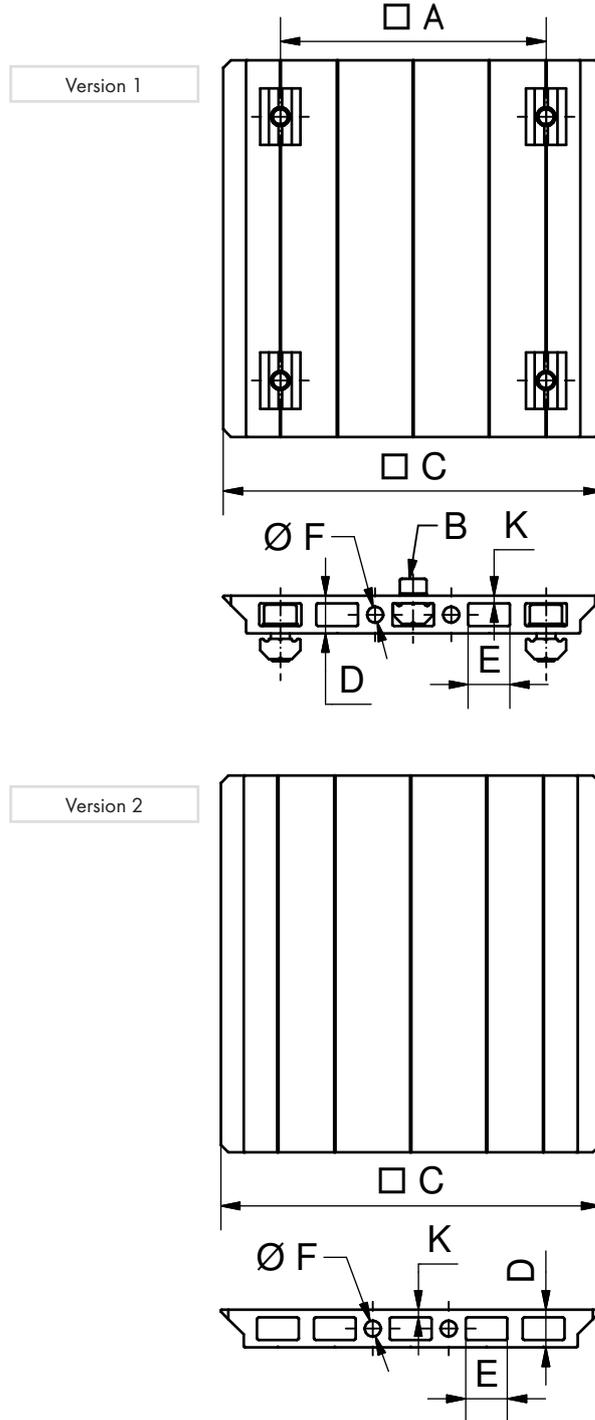
- without channel nuts

**Customized hole pattern for individual robot systems on request.**

**Remarks for scope of delivery:**

- SK = sunk screw (DIN 10642)
- GWP = channel nut with one bore hole and screw (DIN 4762)

## GPM E / EOAT (Robot Hand) Base Plate, Extruded



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

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Profile  
Connectors

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Profile  
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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

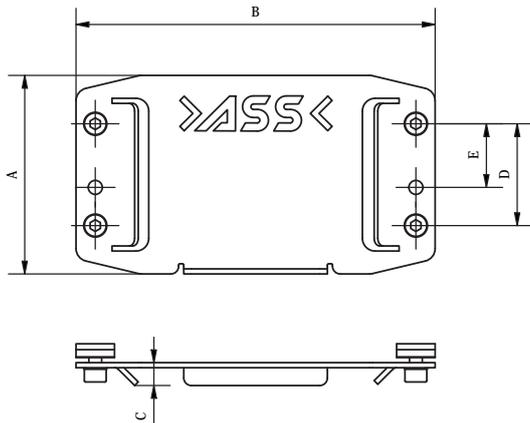
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

Part No.	Description	Version/Scope of delivery	A	C	D	E	F	K	Material	Weight [g]
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
1-007-05-00	GPM 0 E	Version 2, without GWP		60	10	11		2	Al	52
1-007-13-00	GPM 0 E L/X	Version 1, 4x GWP, M4, with anti-rotation, optimal for L 18-18 and X-Profile	30	60	10	11		2	Al	82
1-007-20-00	GPM 1 E	Version 2, without GWP		100	10	11	4,2	2	Al	147
1-007-23-00	GPM 1 E L	Version 1, 4x SK, M4, with anti-rotation, for L 18-10 and X 25-10 Profile	70	100	10	11	4,2	2	Al	178
1-007-25-00	GPM 1 E L/X	Version 1, 4x GWP, M5, with anti-rotation, optimal for L 18-18 and X-Profile	70	100	10	11	4,2	2	Al	185
1-007-35-00	GPM 2 E	Version 2, without GWP, with anti-rotation		160	12	11	4,2	2,5	Al	467
1-007-40-00	GPM 2 E X	Version 1, 4x GWP, M5, with anti-rotation, optimal for L 18-18 and X-Profile	130	160	12	11	4,2	2,5	Al	500

# 000 | Quick Change Systems

## GHV ND / EOAT (Robot Hand) Holding Fixture, new design



**Remarks:**

**Application:** e.g. for storing EOAT at racks walls

- made of stainless steel

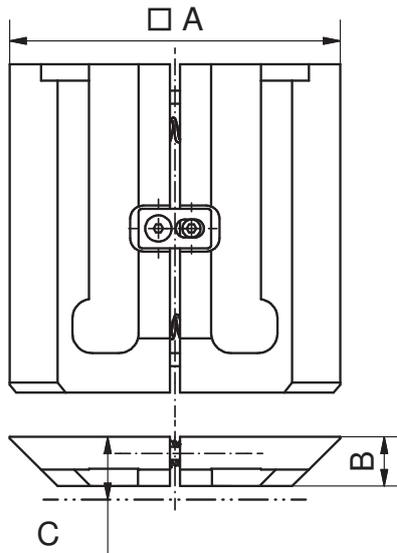
**Scope of Delivery:**

- mounting material for X- and JU-profile



Part No.	Description	Suitable for	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material
1-006-04-00	GHV 01 ND	GPM 01	50	80	9	25	12,5	Stainl. Steel
1-006-07-00	GHV 0 ND	GPM 0, GPM 0 E	50	100	9	25	12,5	Stainl. Steel
1-006-10-00	GHV 1 ND	GPM 1, GPM 1 E	80	140	9	40	25	Stainl. Steel
1-006-13-00	GHV 2 ND	GPM 2, GPM 2 E	115	210	11	40	25	Stainl. Steel
1-006-16-00	GHV 3 ND	GPM 3	135	300	11	40	25	Stainl. Steel

## GPR / Adapter GPM to SWM



**Remarks:**

**Application:** adapter plate allows a smaller GPM size in a larger SWM

- no need to convert the robots side
- see application examples

**Drawing:**

C height of GPM installed in GPR

Part No.	Description	A [mm]	B [mm]	C [mm]	Adaption	Material	Weight [g]
1-005-81-00-1	GPR 1-0	100	15	18	GPM 0 to SWM 1	Aluminum	269
1-005-83-00-1	GPR 2-1	160	15	17	GPM 1 to SWM 2	Aluminum	712
1-005-85-00	GPR 3-1	250	20	22	GPM 1 to SWM 3	Aluminum	2858
1-005-86-00-1	GPR 3-2	250	20	23	GPM 2 to SWM 3	Aluminum	2377

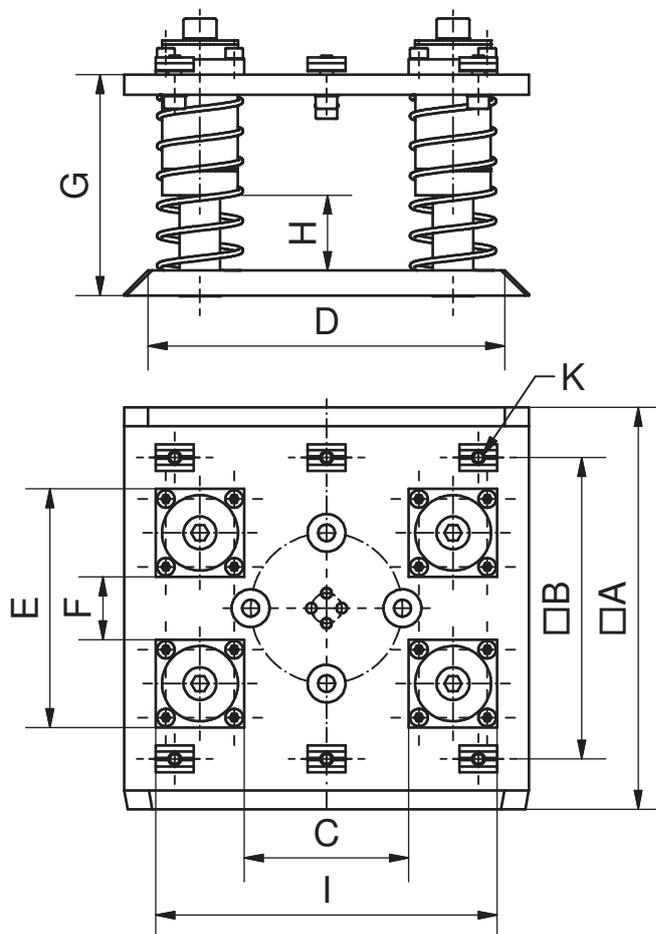
## GPG / EOAT (Robot Hand) Base Plate features Ball Bushings

### Remarks:

- robot hand base plate with bore holes and channel nuts respectively sunk screws
- moving plate can be rotated 90°
- spring tension can be reduced by removing springs

### Remarks for scope of delivery:

- SK = sunk screw
- GWP = channel nut



Part No.	Description	Version/Scope of delivery	A [mm]	B [mm]	C [mm]	D [mm]
1-006-20-00	GPG 1-20 L/X	2x ball bushings, 4x GWP, 4x SK, optimal for L- and X-Profil	100	70		85
1-006-26-00	GPG 2-30 X	4x ball bushings, 6x GWP, optimal for X-Profil	160	120	25	141
1-006-29-00	GPG 3-30 X	4x ball bushings, 10x GWP, optimal for X-Profil	250	200	105	231
1-006-30-00	GPG 3-30 JU	4x ball bushings, 10x GWP, optimal for JU-Profil	250	215	105	231

Part No.	Description	E [mm]	F [mm]	G [mm]	Stroke H [mm]	I [mm]	K [mm]	Weight [g]
1-006-20-00	GPG 1-20 L/X	85	15	51,5	20		M5	579
1-006-26-00	GPG 2-30 X	135	65	88	30	95	M5	2211
1-006-29-00	GPG 3-30 X	215	145	88	30	175	M5	3687
1-006-30-00	GPG 3-30 JU	215	145	88	30	175	M6	3872

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## GPG-P / EOAT (Robot Hand) Base Plate, pneumatic

050  
Profiles  
Channel Nuts

100/115  
Clamps

120  
Profile  
Connectors

190  
Profile  
Accessories

200  
Vacuum Cup  
Connectors

220  
Vacuum Cups

224  
Special  
Vacuum Cups

230  
Manifold

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Adapters for  
Vacuum Cups

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Gripper Arms

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

610  
Nipper Blades

700  
Special Elements

800  
Electrics and  
Sensors

850  
Pneumatics

990  
Tubular System  
Micro System

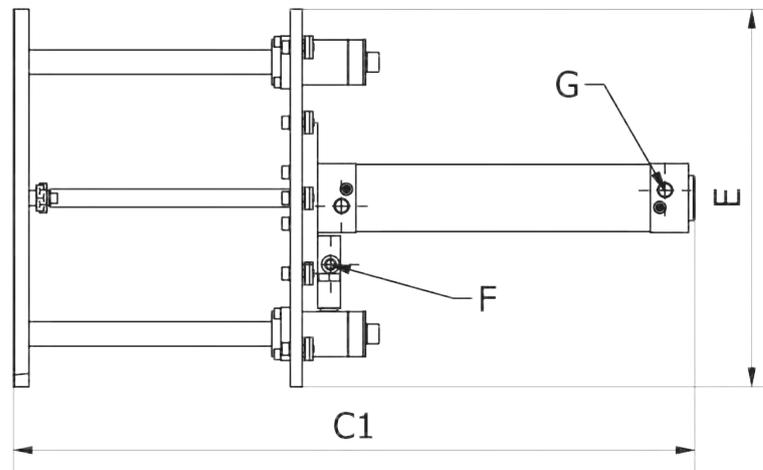
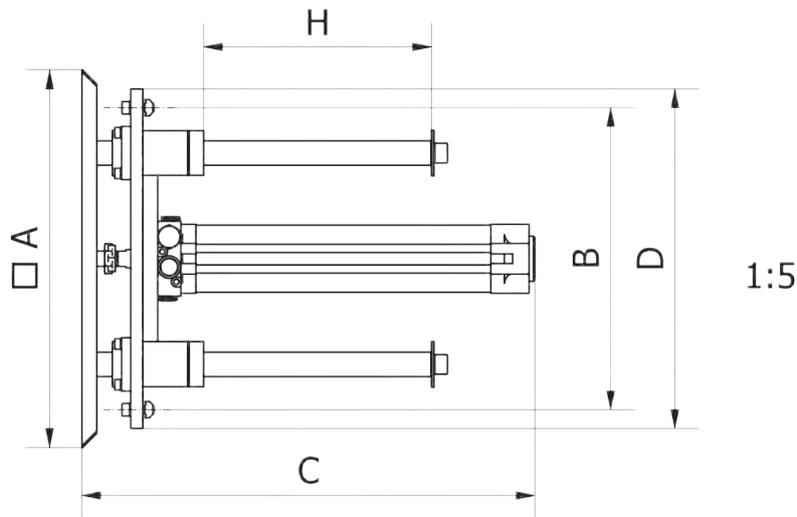
990  
PA-Forming  
Others



**Remarks:**

**Application: for extraction of falling items**

- spring force of standard GPG raises proportionately with the translation
- counterforce of this version is constantly during the translation
- counterforce is adjustable by the integrated press-control valve
- produced air cushion dumps by the press-control valve
- **variants on demand**



Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [mm]	F ø [mm]	G ["]	H [mm]	Piston ø [mm]	Weight [g]
9-07-006-060-0	GPG-P-3-150 X	250	200	298	448	225	250	6/4	1/8	150	32	5857

## SWH / Quick Change System, Semi-Automatic



**Remarks:**

**Application:**

**Semi-automatic quick-change system for the fast, positionally accurate exchange of grippers on robots.**

- body made of high strength aluminum
- body of high quality blue anodized
- 6, 8 or 10 pneumatic interfaces
- suitable for compressed air and vacuum
- we recommend querying the locking
- sensor holder SWH SH is included in the scope of delivery
- gripper and robot sides supplied separately
- maximum air pressure is 6 bar, use dry and filtered air only

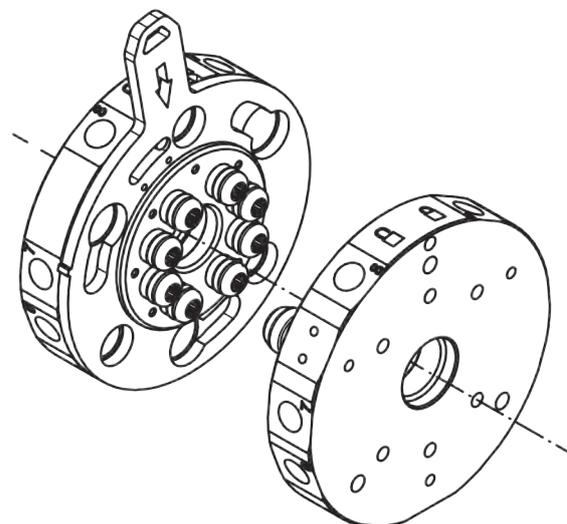
**Accessories e.g.:**

- EOAT Base Plate GPM-SWH
- Base Plate GP SWH G
- Centering Pin RHZ SWH R
- Holding Fixture GHV SWH
- pneumatic interface extensions SWH-PG and SWH-PR
- electrical interface extension SWH ES (D-SUB 15-pin)
- Sensor Bracket SWH SH

**Recommended maximum handling weights of the various SWH sizes:**

Description	Handling Weight [kg]
SWH 50	5
SWH 90	20
SWH 150	40

Handling weights depending on center of gravity distance, hole pattern, acceleration values of the robot etc.



**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

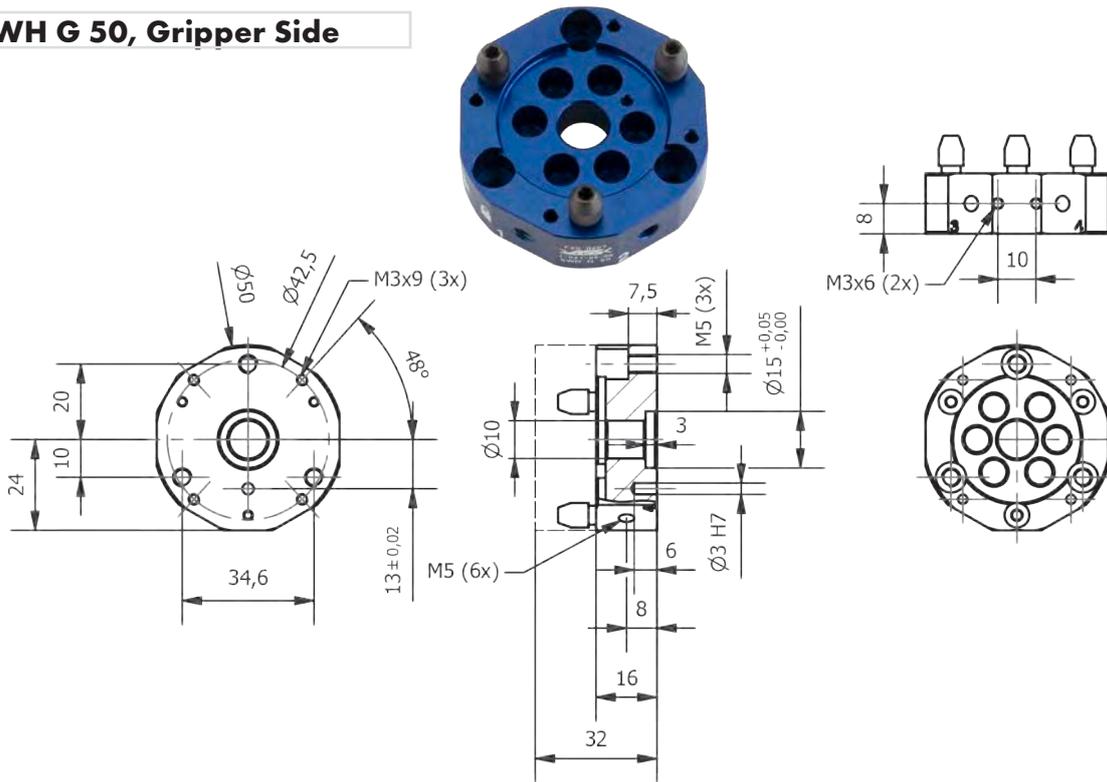
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

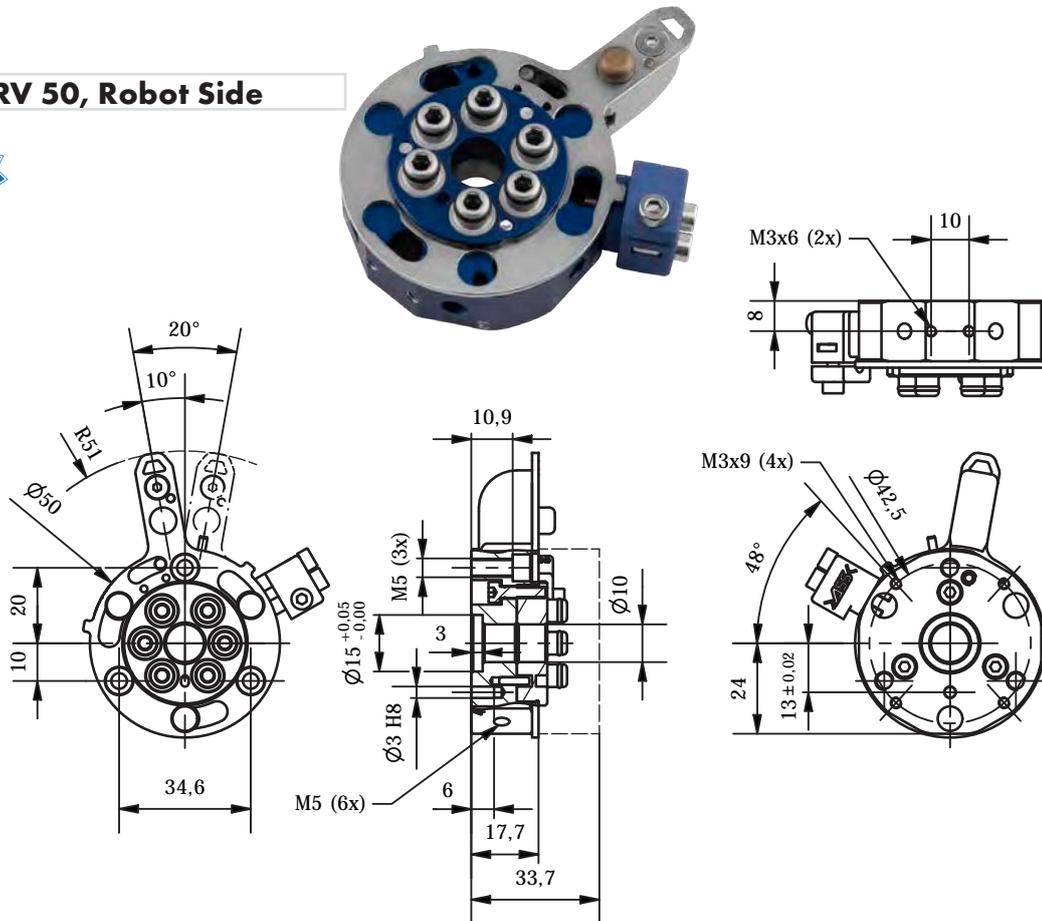
# 000 | Quick Change Systems

## SWH 50 / Quick Change System, Semi-Automatic, Ø50mm

### SWH G 50, Gripper Side



### SWH RV 50, Robot Side



Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-05-00	SWH G 50	50	Gripper (EOAT) Side	6x M5	68
1-020-04-00	SWH RV 50	50	Robot Side with locking	6x M5	105

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

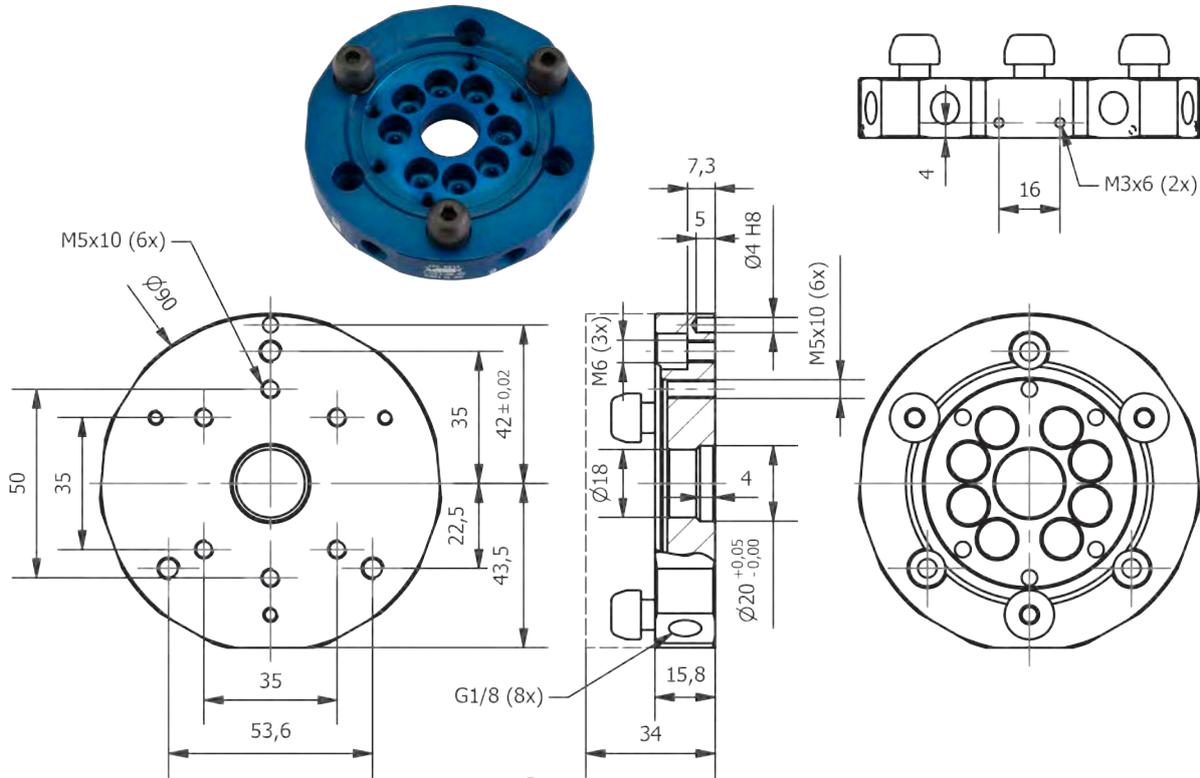
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

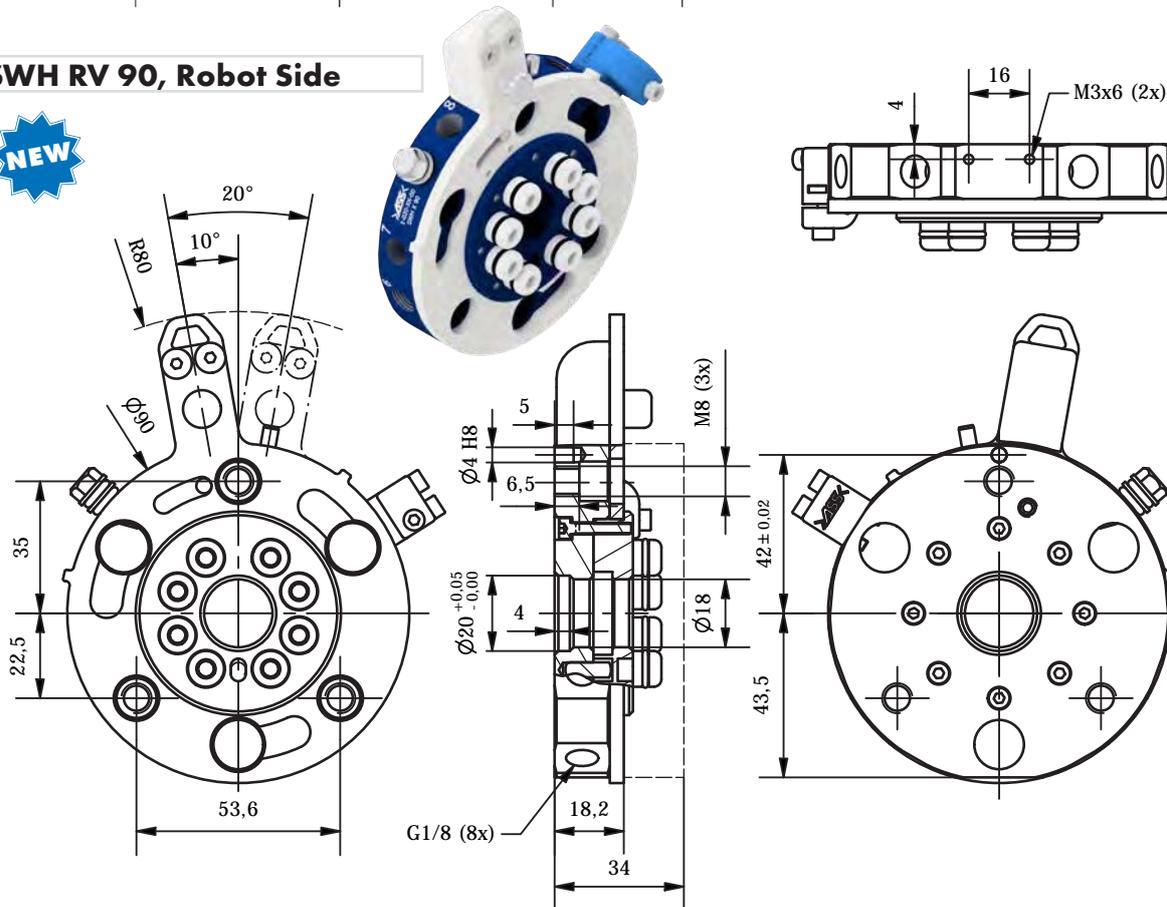
**990**  
PA-Forming  
Others

## SWH 90 / Quick Change System, Semi-Automatic, Ø90 mm

### SWH G 90, Gripper Side



### SWH RV 90, Robot Side



Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-09-00	SWH G 90	90	Gripper (EOAT) Side	8x G1/8	212
1-020-07-00	SWH RV 90	90	Robot Side with locking	8x G1/8	357

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

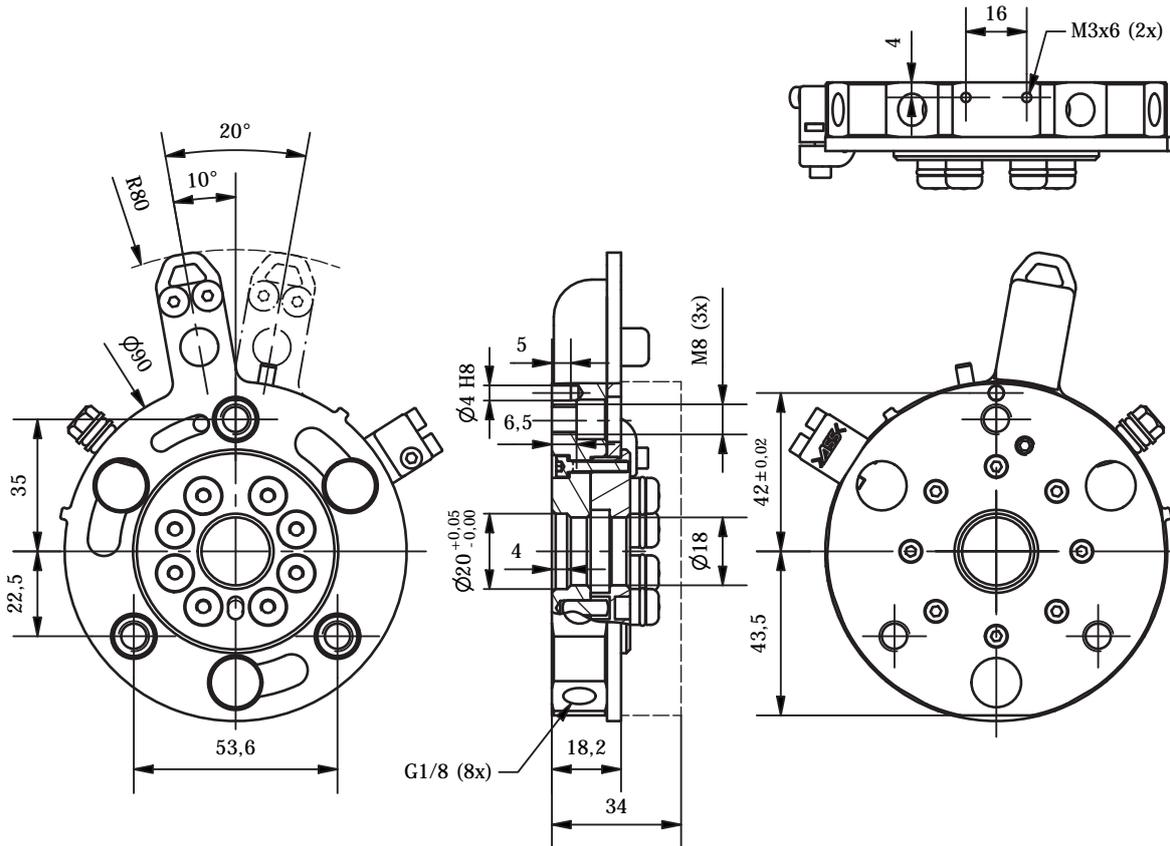
# 000 | Quick Change Systems

## SWH RVR 90 / Quick Change System, Semi-Automatic, with locking and check valve, Ø90 mm

### SWH RVR 90, Robot Side



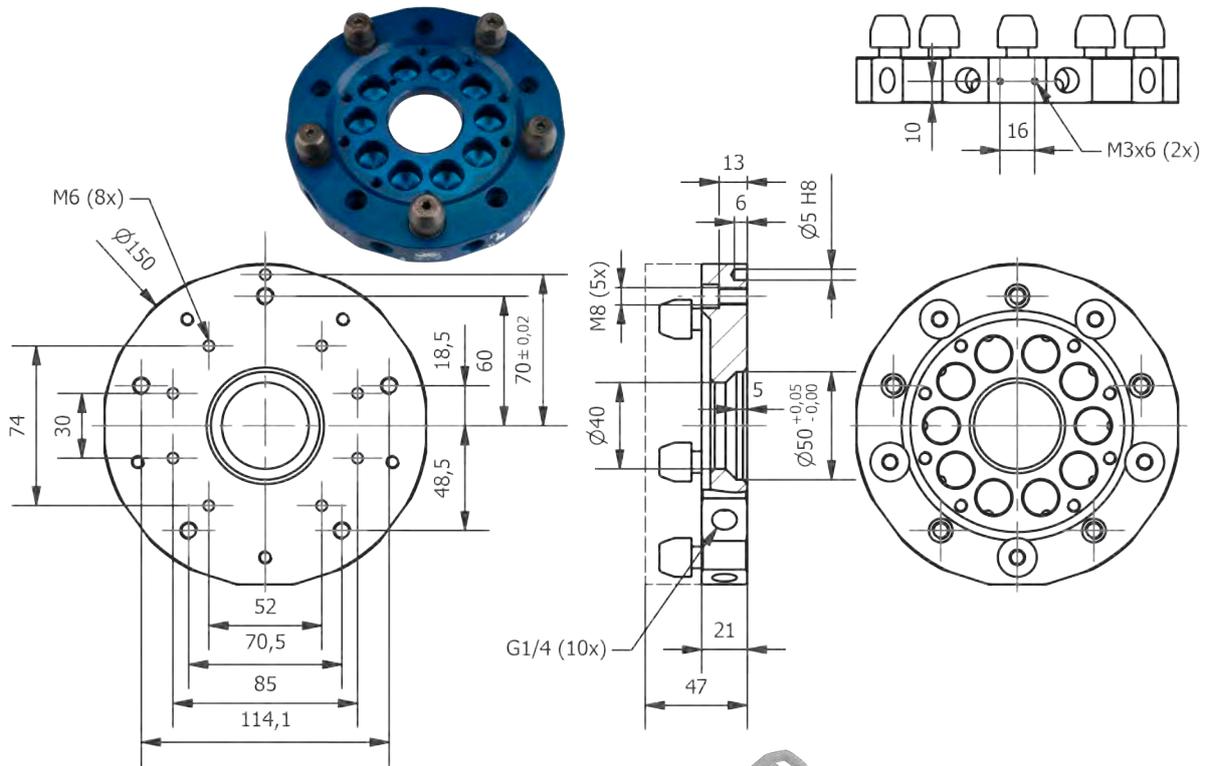
- 050**  
Profiles  
Channel Nuts
- 100/115**  
Clamps
- 120**  
Profile  
Connectors
- 190**  
Profile  
Accessories
- 200**  
Vacuum Cup  
Connectors
- 220**  
Vacuum Cups
- 224**  
Special  
Vacuum Cups
- 230**  
Manifold
- 290**  
Adapters for  
Vacuum Cups
- 300**  
Gripper Arms
- 400**  
Gripper  
Parallel Gripper
- 450**  
Gripper Fingers
- 460**  
Needle Gripper
- 600**  
Nipper Bodies
- 610**  
Nipper Blades
- 700**  
Special Elements
- 800**  
Electrics and  
Sensors
- 850**  
Pneumatics
- 990**  
Tubular System  
Micro System
- 990**  
PA-Forming  
Others



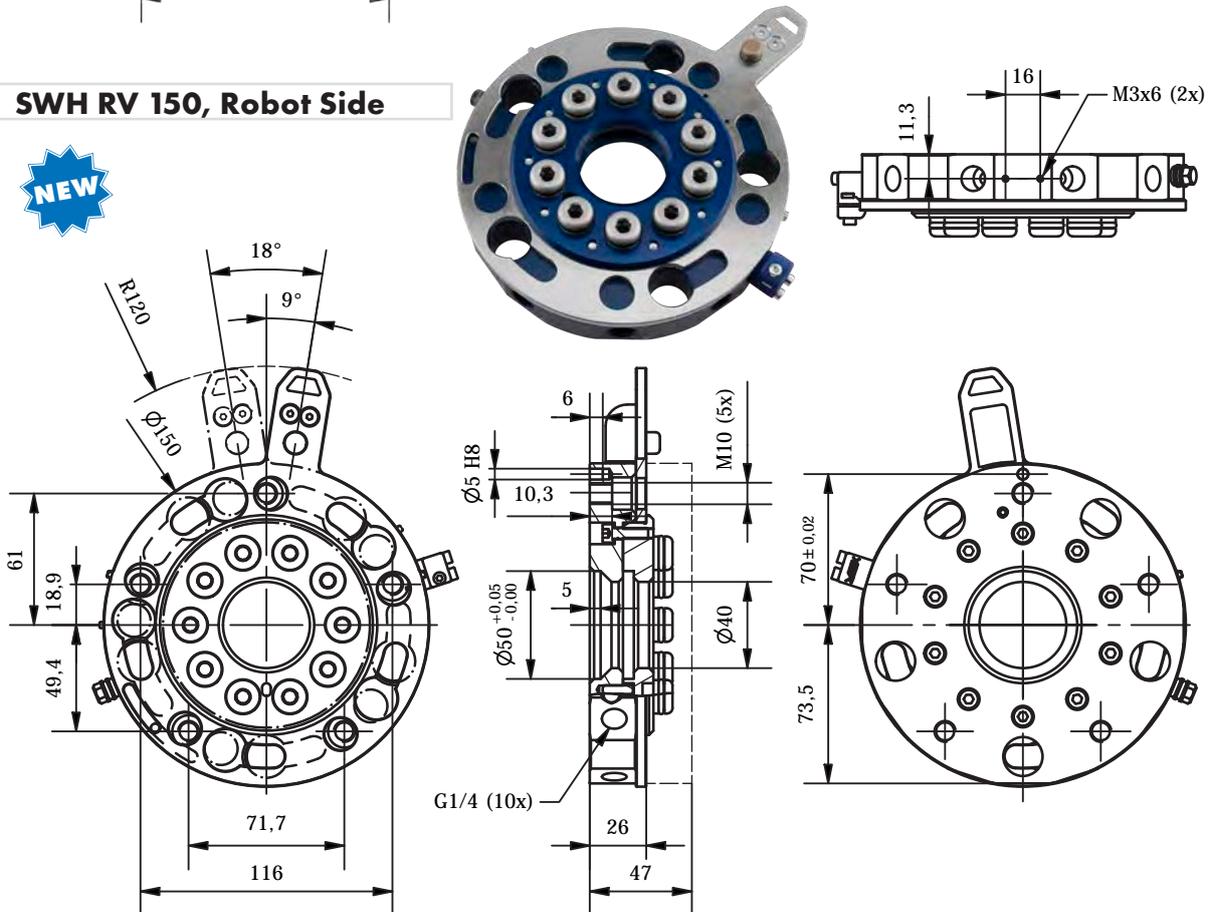
Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-020-08-00	SWH RVR 90	90	Robot Side with locking + check valve	8x G1/8	365

## SWH 150 / Quick Change System, Semi-Automatic, Ø150 mm

### SWH G 150, Gripper Side



### SWH RV 150, Robot Side



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

Part No.	Description	Ø [mm]	Version	Air Connection	Weight [g]
1-021-15-00	SWH G 150	150	Gripper (EOAT) Side	10x G1/4	810
1-020-14-00	SWH RV 150	150	Robot Side	10x G1/4	1215

# 000 | Quick Change Systems

## GP SWH G / EOAT Base Plate for SWH

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
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Connectors

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Vacuum Cups

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

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Nipper Blades

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Special Elements

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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others



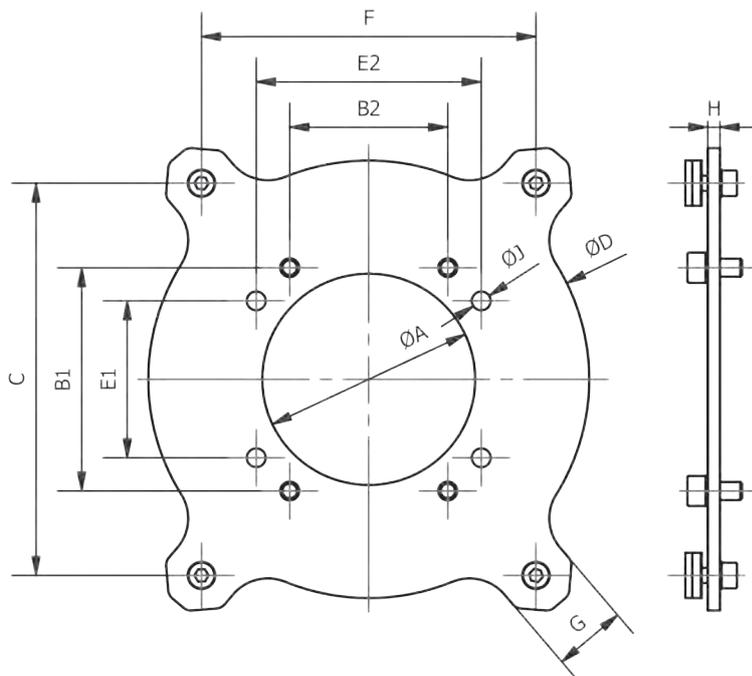
**Remarks:**

**Application: Gripper Base Plate allows mounting profiles at the SWH quick change system**

- base plate for SWH quick change system
- flat and lightweight design
- SWH G (grripper side) can be mounted directly on this base plate
- profiles can be mounted directly on the base plate
- **see application example**

**Scope of delivery:**

- mounting material



Part No.	Description	ØA [mm]	B1 [mm]	B2 [mm]	C [mm]	ØD [mm]	E1 [mm]	E2 [mm]	F [mm]	G [mm]	H [mm]	ØJ [mm]	Material	Weight [g]
1-023-05-00	GP SWH G 50	25	30	34.6	46.8	52	-	-	43.7	16	4	5.2	Aluminium	54
1-023-09-00	GP SWH G 90	37	35	35	76	87	50	-	76	16	3	5.2	Steel.	180
1-023-15-00	GP SWH G 150	70	74	52	130	145	52	74	110	24	4	6.2	Steel.	512

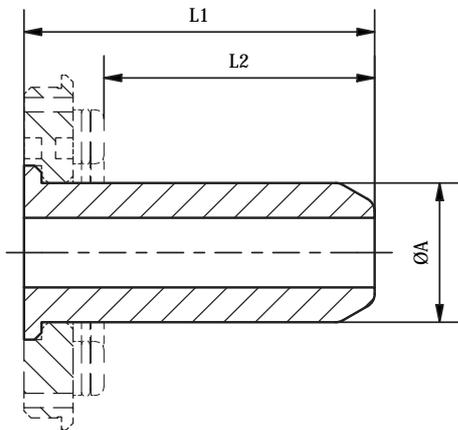
**RHZ SWH R / SWH Centering Pin**



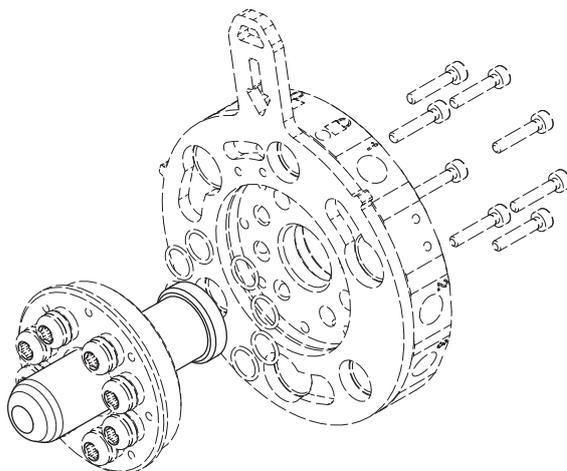
**Remarks:**

**Application: Centering Pin for easy mounting SWH R to SWH G**

- is mounted to the robot side
- makes adding heavy EOAT to the robot easier



Application example



Application example



Part No.	Description	A Ø [mm]	L1 [mm]	L2 [mm]	suitable for	Material	Weight [g]
1-026-09-00	RHZ SWH R 90	18	60	47	SWH R 90 / SWH RVR 90	Aluminium	37
1-026-15-00	RHZ SWH R 150	40	100	77	SWH R 150 / SWH RV 150	Aluminium	263

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Connectors

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Vacuum Cups

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Special  
Vacuum Cups

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Parallel Gripper

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Needle Gripper

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Sensors

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Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWH DS / Spacer for SWH

1-025-05-00

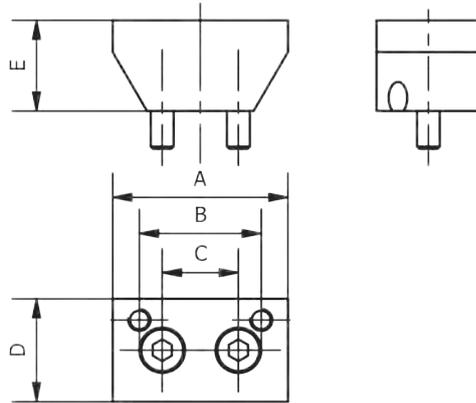


1-025-15-00

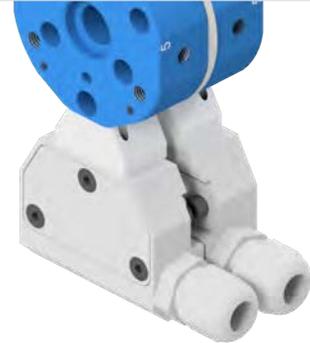


**Remarks:**

- is required for connecting the electrical and pneumatic interface to the SWH quick-change system
- for SWH 90 no spacer is needed



**Application example**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	suitable for	Weight [g]
1-025-05-00	SWH DS 50	23	16	10	13.6	12	SWH 50	6
1-025-15-00	SWH DS 150	28	16	-	15	8	SWH 150	7

## SWH SH / Sensor Bracket for Quick Change System SWH

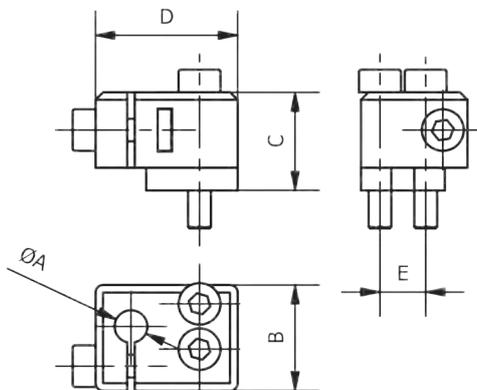


**Remarks:**

- holding bracket for an inductive sensor
- to monitor the positions SWH locked / unlocked
- to assemble on the gripper and robot side

**Accessories e.g.:**

- Sensor IRK 4



**Application example**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	suitable for	Material	Weight [g]
1-024-05-00	SWH SH G 50	4	14	13	18.7	6	SWH G 50	PA	6
1-024-09-00	SWH SH G 90150	4	14	13	21.3	8	SWH G 90 + G 150	PA	7

**SWH ES / Electrical Interface D-SUB for SWH**

**Remarks:**

- D-SUB interface
- electrical interface for the SWH quick-change system
- suitable for SWH 50, 90 and 150
- for SWH 50 and 150 a spacer SWH DS is required
- 15 pin

**Scope of delivery:**

- incl. cable

1-025-01-00



**Mounted condition**

1-025-01-00



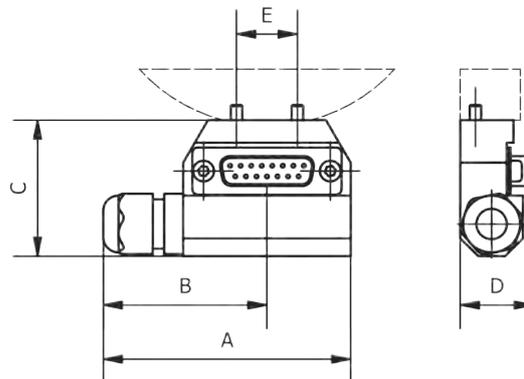
1-025-02-00



**Application example**



1-025-02-00



Part No.	Description	Version	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Cable length [mm]	Material	Weight [g]
1-025-01-00	SWH ES R	Robot side	67,2	43	36	19,2	16	2000	Aluminium	52
1-025-02-00	SWH ES G	EOAT side	67,2	43	36	19,2	16	1000	Aluminium	45

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 000 | Quick Change Systems

## SWH-PG 4 / Pneumatic Interface Expansion, 4-times, Gripper Side

## SWH-PR 4 / Pneumatic Interface Expansion, 4-times, Robot Side

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

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**300**  
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**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

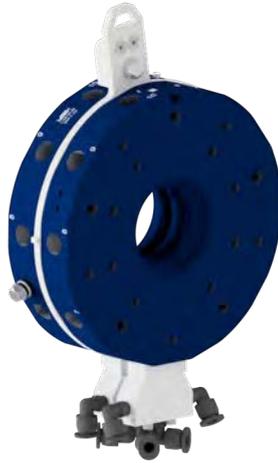
**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

Application example



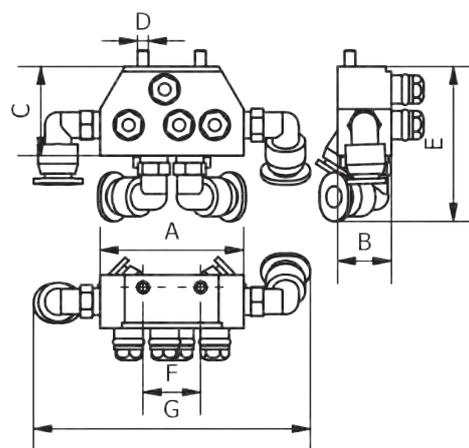
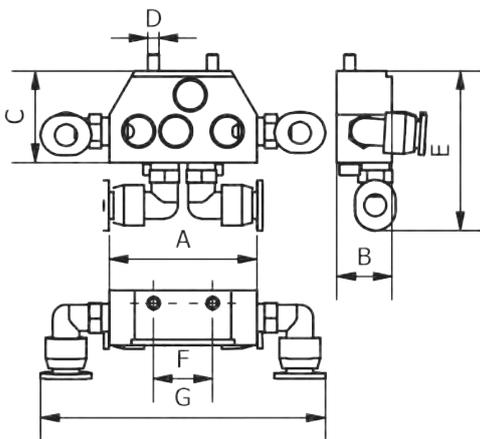
**Remarks:**

- for SMH 50 and 150 a spacer SWH DS is required
- 4 additional air-circuits
- tube diameter 6/4 mm
- suitable for vacuum
- **regularly grease O-Ring with lubricant**
- easy backfitting, no need for modifications on WGS
- **maximum air pressure is 6 bar, use dry and filtered air only**

1-023-20-00



1-023-25-00



Part No.	Description	Variant	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-023-20-00	SWH-PG 4	EOAT side	40	15	25	M3	44	16	77	50
1-023-25-00	SWH-PR 4	Robot side	40	15	25	M3	44	16	77	63

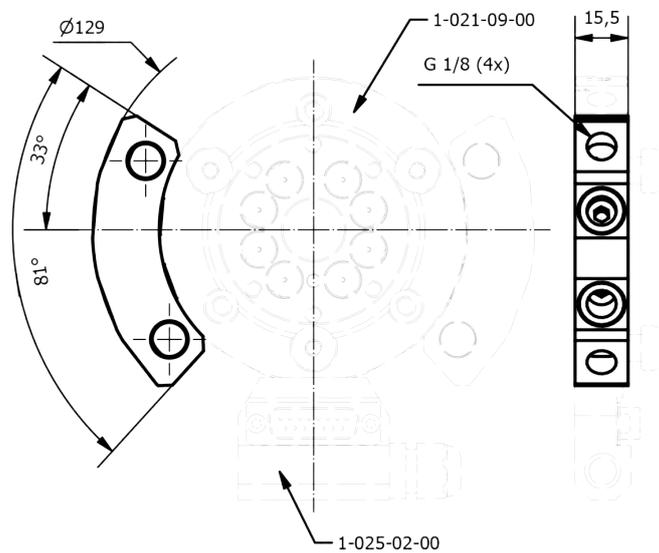
## SWH-PG 2 90 / Pneumatic Interface Expansion, 2-times, Gripper Side

## SWH-PR 2 90 / Pneumatic Interface Expansion, 2-times, Robot Side

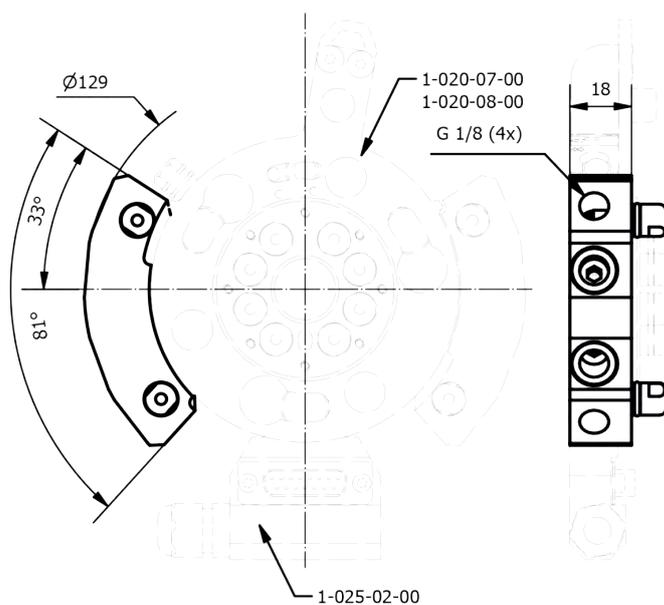
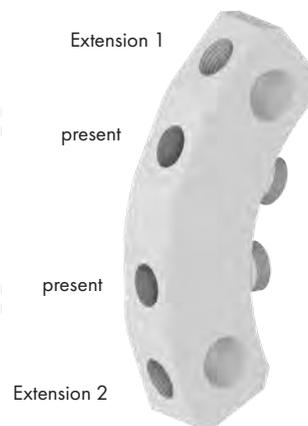
**Remarks:**

- extension by 2 air connections
- suitable for compressed air and vacuum
- can be mounted on the left, right or on both sides (extension by 4 air connections)
- side mounting enables the attachment of an electrical interface (SWH ES)
- gripper side and robot side must be ordered separately

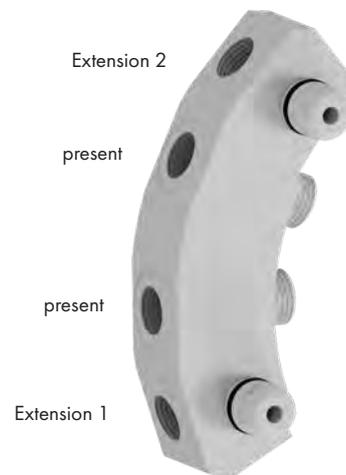
Application example



1-023-30-00



1-023-35-00



Part No.	Description	Variant	Air Connection	Material	Weight [g]
1-023-30-00	SWH-PG 2 90	EOAT side	4x G1/8	Aluminium	55
1-023-35-00	SWH-PR 2 90	Robot side	4x G1/8	Aluminium	70

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

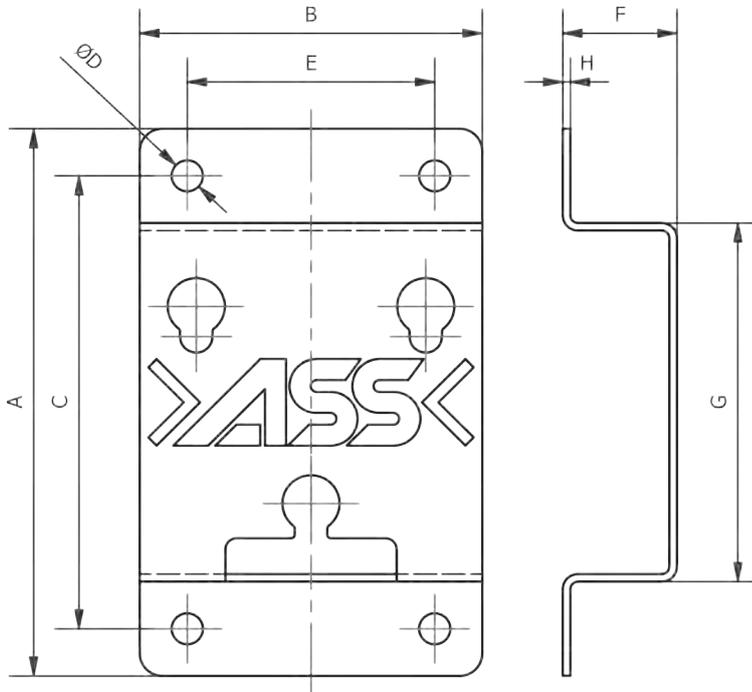
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## GHV SWH / Holding Fixture for SWH

**Remarks:**

- for storing EOATs with SWH quick change system



Part No.	Description	A [mm]	B [mm]	C [mm]	ØD [mm]	E [mm]	F [mm]	G [mm]	H [mm]	suitable for	Material	Weight [g]
1-022-05-00	GHV SWH G 50	95	50	75	6.3	30	30	55	1.5	SWH G 50	Steel	76
1-022-09-00	GHV SWH G 90	145	90	120	8.2	65	30	95	2	SWH G 90	Steel	225
1-022-15-00	GHV SWH G 150	205	150	180	8.2	125	30	155	2	SWH G 150	Steel	518

## SWS / Automatic Quick Change System

### Remarks:

- automatic, pneumatic, double-acting quick change system
- in case of pressure lost the locking device remains in position by pressure lost
- interface: mechanic, pneumatic, electric
- **max. moments Mxy:**
  - SWS 011: 75 Nm
  - SWS 040: 471 Nm
  - SWS 040Q: 471 Nm
  - SWS 071: 1,185 Nm
- **electric plug is sold separately (picture shows SWS and plug)**
- **SWS 040Q has an integrated piston stroke control SIP (proximity switch included)**

### Accessories e.g.:

- SWO-E
- other accessories on demand

1-003-60-00



1-003-61-00



1-003-71-00



1-003-80-00



1-003-72-00



1-003-81-00



**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
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**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

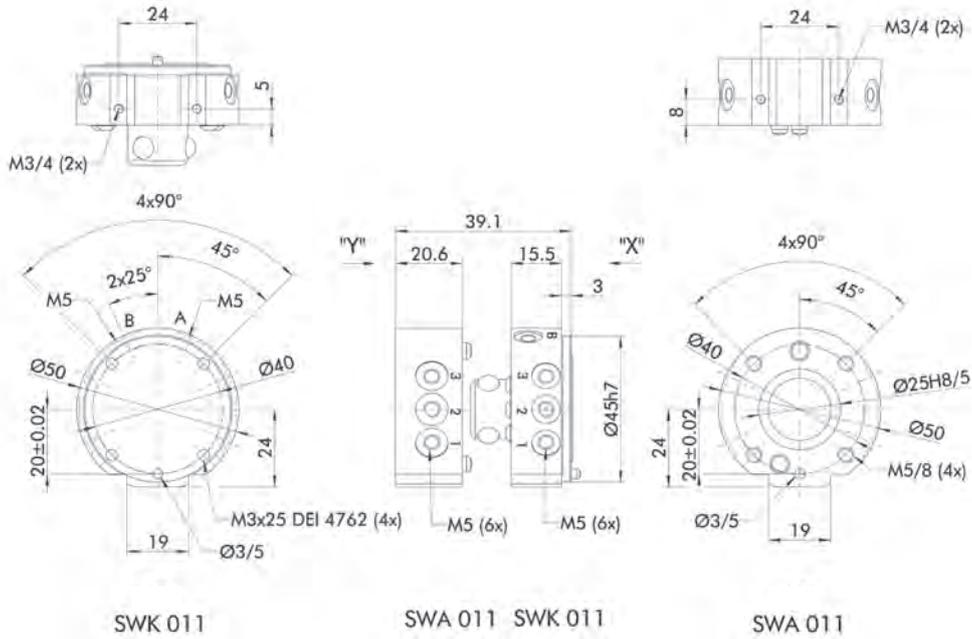
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

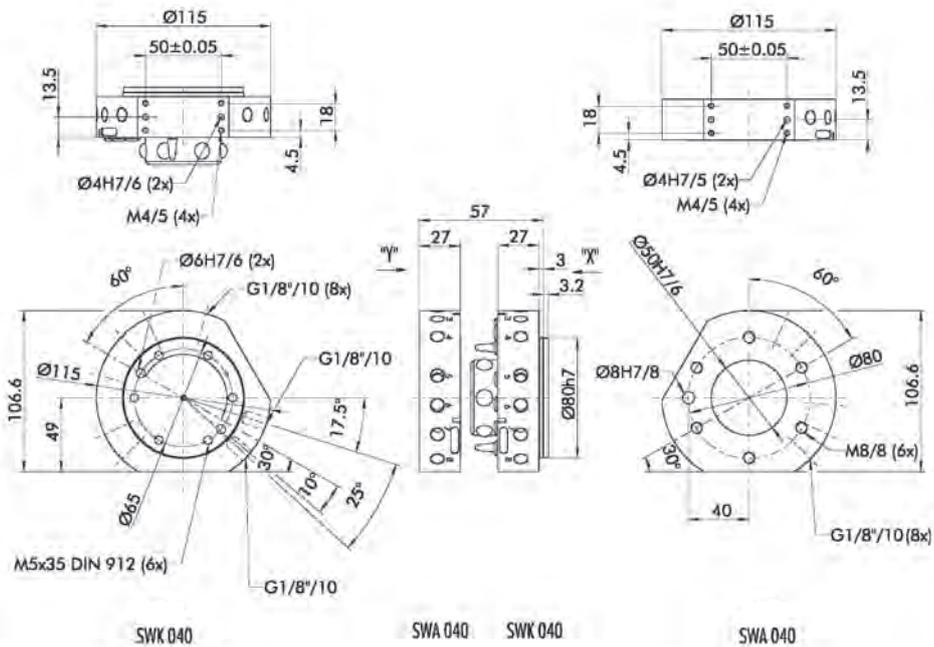
Part No.	Description	Type	compatible to
1-003-60-00	SWK-011 Quick Change Head	Robot side	SWA-011
1-003-61-00	SWA-011 Quick Change Adapter	EOAT side	SWK-011
1-003-71-00	SWA-040 Quick Change Adapter	EOAT side	SWK-040
1-003-72-00	SWK-040Q Quick Change Head	Robot side	SWA-040
1-003-80-00	SWK-071 Quick Change Head	Robot side	SWA-071
1-003-81-00	SWA-071 Quick Change Adapter	EOAT side	SWK-071

# 000 | Quick Change Systems

## SWS 011 / Automatic Quick Change System



## SWS 040 / Automatic Quick Change System



## SWO / Electric Connection for SWS 011 KAS / Cable Plug for SWS 011

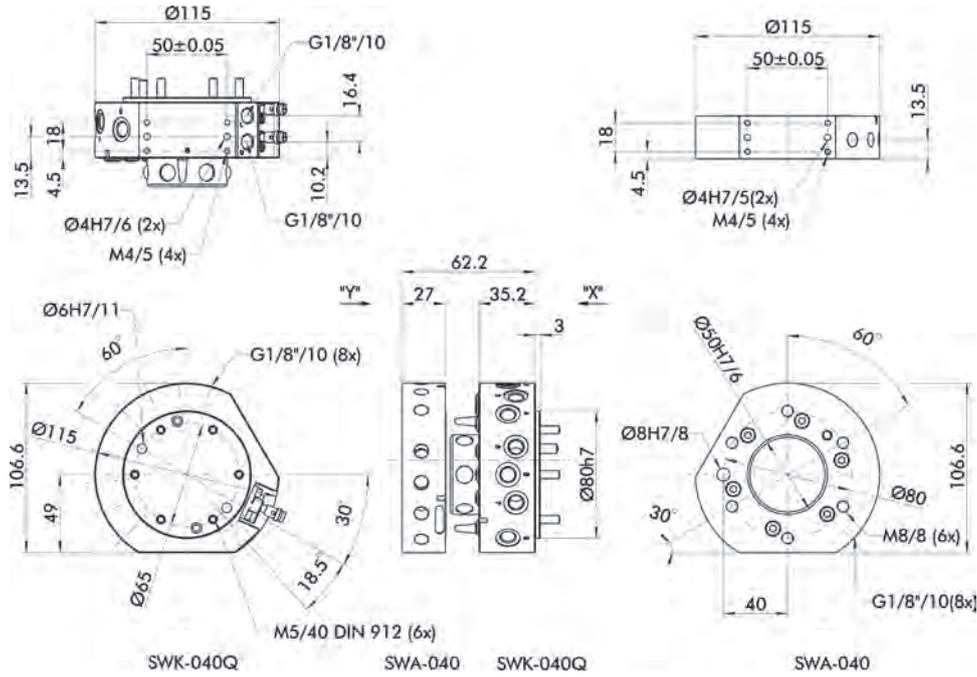


**Remarks:**

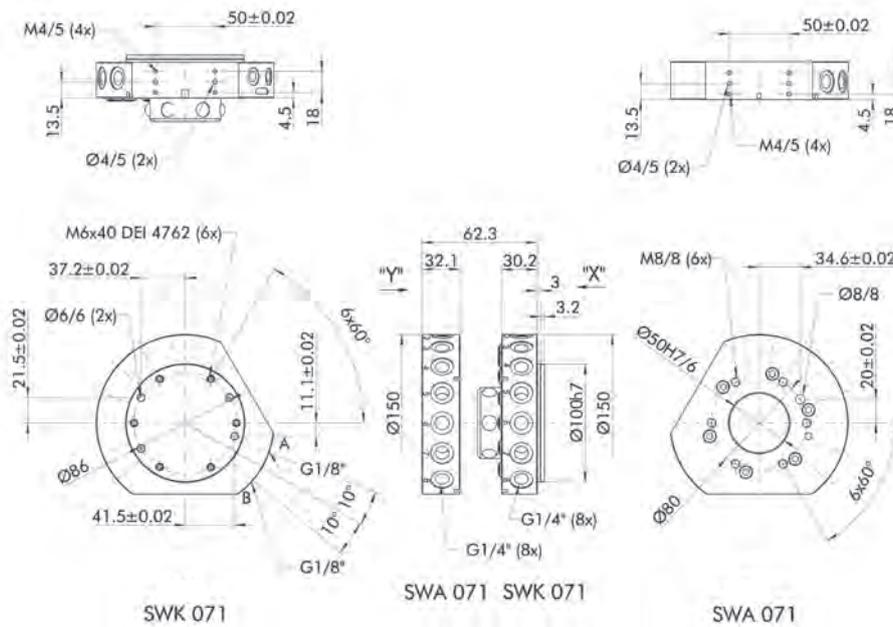
- electric connection for SWS 011
- 15 spring-loaded pins each 3A/50V

Part No.	Description	Type	compatible to
1-003-90-00	SWO-A15-K Electric Connection	Robot side	SWK-011
1-003-91-00	SWO-A15-A Electric Connection	EOAT side	SWA-011
1-003-92-00	KAS-A15-K-0 Cable Plug	Robot side	SWO-A15-K
1-003-93-00	KAS-A15-A-0 Cable Plug	EOAT side	SWO-A15-A

## SWS 040Q / Automatic Quick Change System



## SWS 071 / Automatic Quick Change System



## SWO / Electric Connection for SWS 040, 040Q, 071 KV / Cable Plug for SWS 040, 040Q, 071

SWO



KV



**Bemerkungen:**

- electric connection for SWS 040, SWS 040Q and SWS 071
- 15 spring-loaded pins each 3A/50V
- cable length: Robot side: 5 m, EOAT side: 3 m

Part No.	Description	Type	compatible to	
1-003-94-00	SWO-R26-K	Electric Connection	Robot side	SWK-040, SWK-040Q, SWK-071
1-003-95-00	SWO-R26-A	Electric Connection	EOAT side	SWA-040, SWA-071
1-003-96-00	KV-5-SWK-26/25-90	Cable Plug	Robot side	SWO-R26-K
1-003-97-00	KV-3-SWA-26B-90	Cable Plug	EOAT side	SWO-R26-A

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

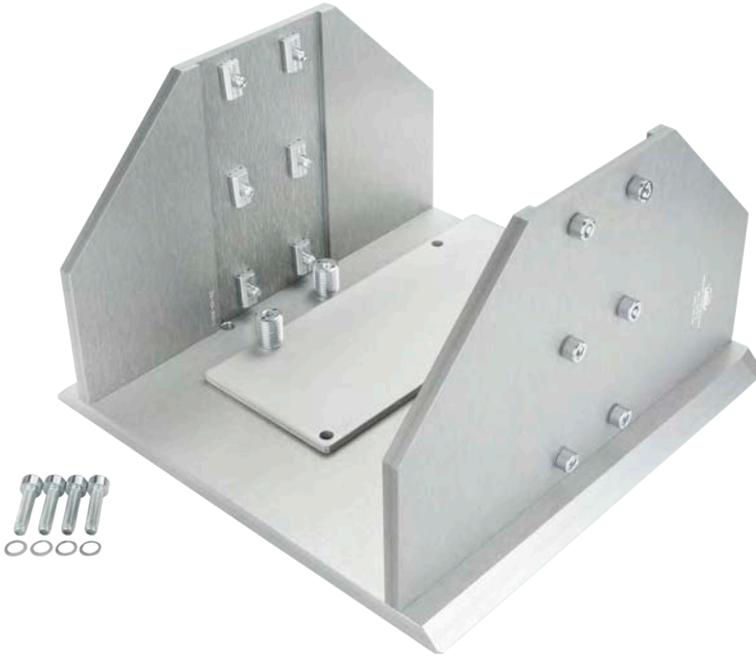
**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## G6A-GPM 3 / Robot Hand Base Frame based on GPM

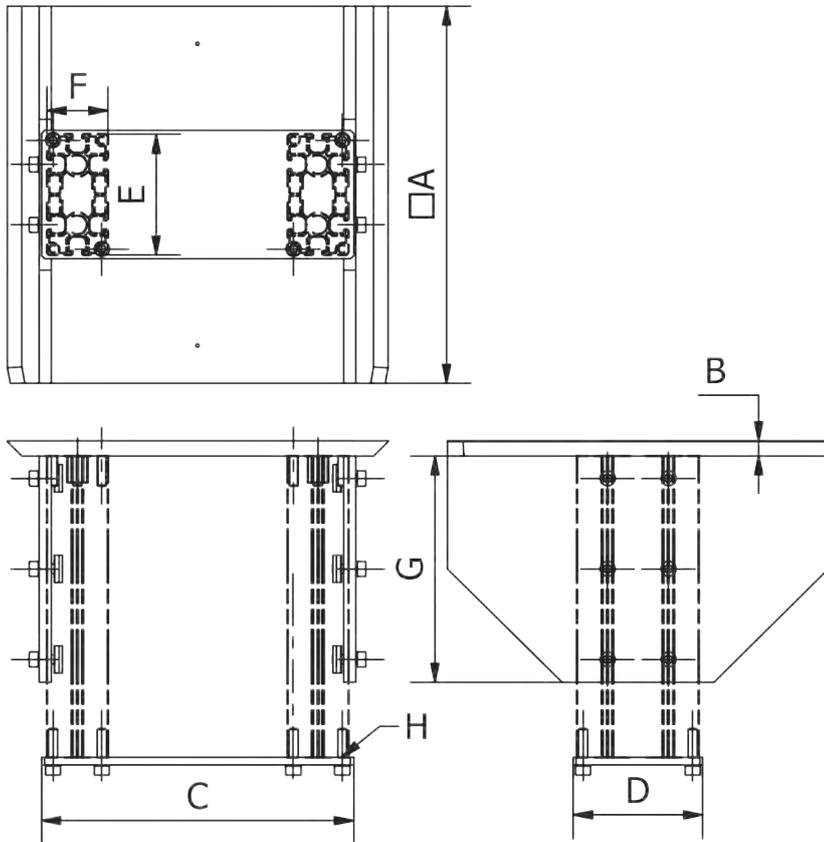


**Remarks:**

- Robot Hand Base Frame especially for 6 axis robots
- the 6th axis can be placed beside the tool during the demolding process
- robot hand can be built double sided, e.g. insert side and demolding side
- based on GPM 3
- compatible to JU Profile 80/40
- see **application example**

**Scope of delivery:**

- incl. screws thread insert
- without JU Profile



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H	Material	Weight [g]
1-009-03-00	G6A-GPM 3	250	10	205	85	80	40	150	M6	Aluminium	3232

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

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Profile  
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Vacuum Cup  
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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

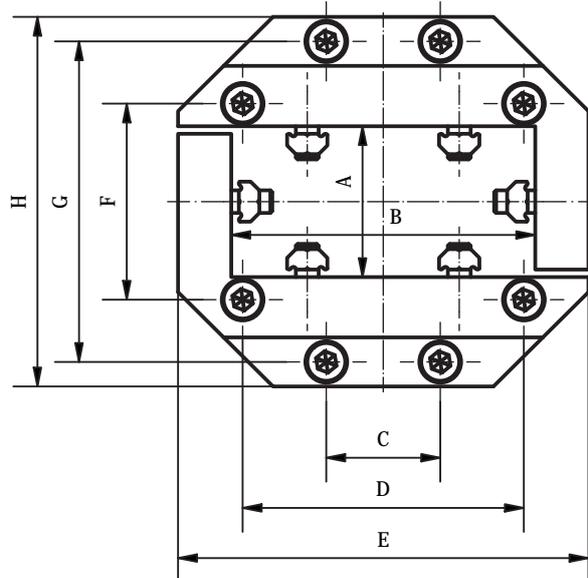
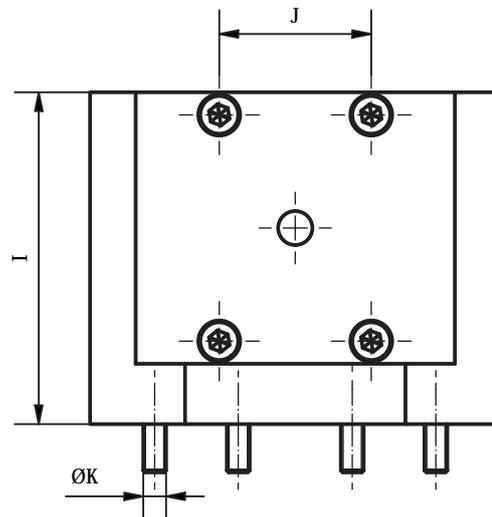
**G6A-SWH G / Robot Hand Base Frame based für SWH**

**Remarks:**

- Robot Hand Base Frame especially for 6 axis robots
- the 6th axis can be placed beside the tool during the demolding process
- for connecting JU-Profile 80x40 to SWH G
- pre-drilled through hole for pinning
- **see application example**

**Scope of delivery:**

- incl. mounting material
- without profile and without SWH



Part No.	Description	A	B	C	D	E	F	G	H	I	J	K	Material	Weight [g]
		[mm]												
1-028-15-00	G6A-SWH G 150	40	80	30	74	108	52	85	98	88	40	M6	Aluminium	1240

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

**224**  
Special  
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Gripper  
Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

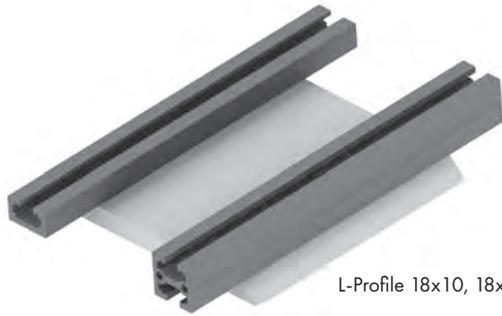
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

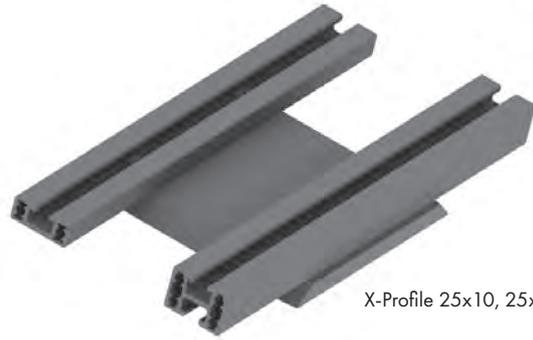
**990**  
PA-Forming  
Others

# 050 | Profile-Channel Nut

## Application examples profile L - X - JU on GPM



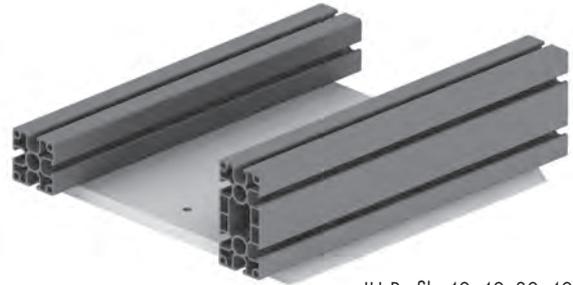
L-Profile 18x10, 18x18



X-Profile 25x10, 25x18

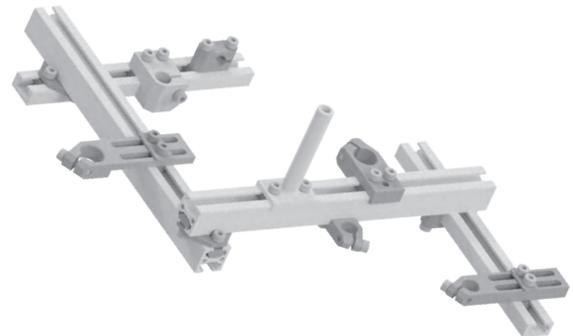
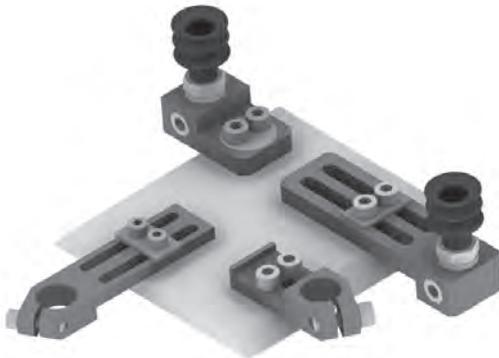


X-Profile 25x25, 25x50

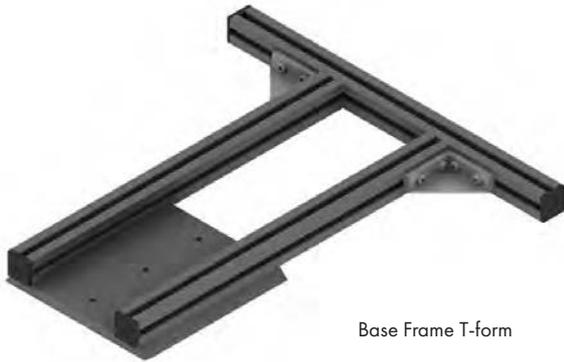


JU-Profile 40x40, 80x40

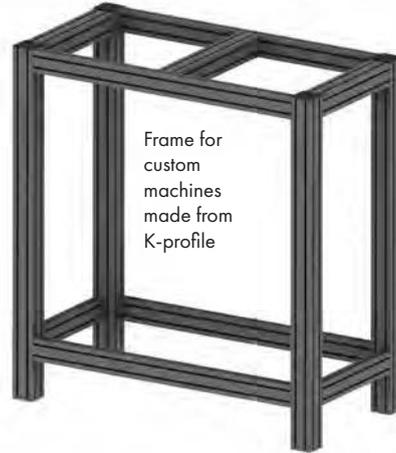
## Application examples base frame construction



**Application examples base frame construction**



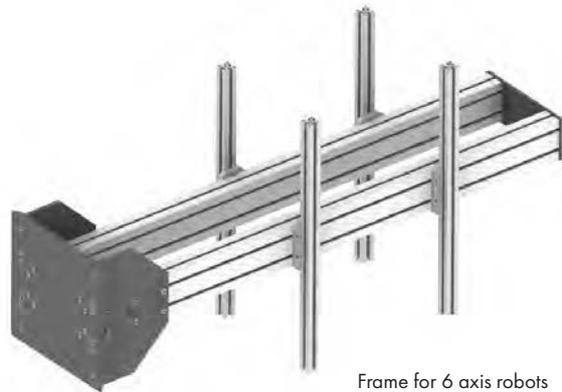
Base Frame T-form



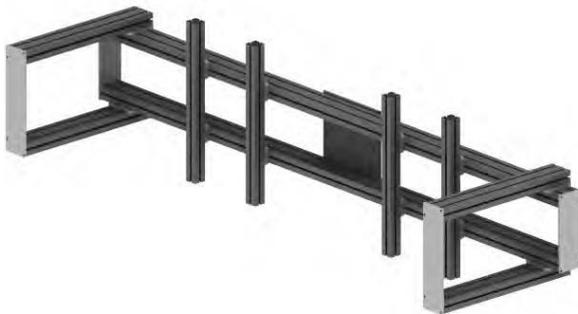
Frame for custom machines made from K-profile



H-frame for gantry style robots



Frame for 6 axis robots



Frame for bumper coat core site de-molding



Frame for bumper coat cavity site de-molding

**Application examples channel nuts**



GWP in X-profile



GWP in K-profile

**000**  
Quick Change Systems

**050**  
Profiles Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

**190**  
Profile Accessories

**200**  
Vacuum Cup Connectors

**220**  
Vacuum Cups

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Nipper Bodies

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 050 | Profile-Channel Nut

## L-Profile / „Light System“ 18x10 and 18x18

100/115  
Clamps

120  
Profile  
Connectors

190  
Profile  
Accessories

200  
Vacuum Cup  
Connectors

220  
Vacuum Cups

224  
Special  
Vacuum Cups

230  
Manifold

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Adapters for  
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Special Elements

800  
Electrics and  
Sensors

850  
Pneumatics

990  
Tubular System  
Micro System

990  
PA-Forming  
Others



**Remarks:**

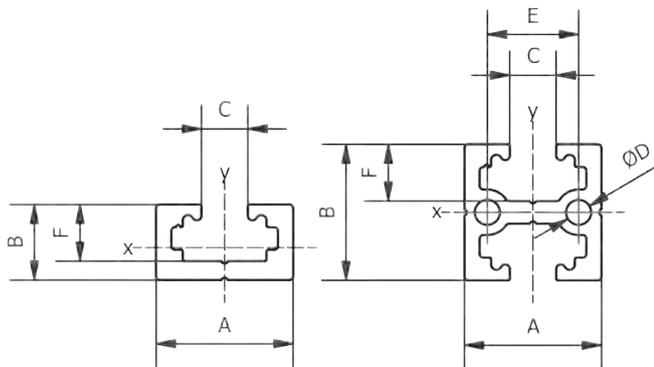
- best suited for part weight of up to 1 kg
- custom length upon request – see ordering example
- profile length min. 50 mm
- channel nuts are compatible to X and JU profiles
- special profile length larger than 2000 mm on request
- ØF = ready to be tapped for M4

**Drawing:**

Ø D core hole for M4

**Ordering example for custom length 1520 mm of L 18-10 profile:**

Order text :  
1-051-26-00, L 18x10x1520



**Measures**

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Length [mm]	Weight [g]
1-051-22-00	L 18-10-2000	18	10	6.1			7.5	2000	494
1-051-26-00	L 18-10-0001	18	10	6.1			7.5	1	0.3
1-051-42-00	L 18-18-2000	18	18	6.1	3.3	12	7.5	2000	750
1-051-46-00	L 18-18-0001	18	18	6.1	3.3	12	7.5	1	0.9

**Properties**

Part No.	Description	Material	Cross section area [mm <sup>2</sup> ]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm <sup>4</sup> ]	Axial moment of inertia Iy [mm <sup>4</sup> ]	Axial torque resistance Wx [mm <sup>3</sup> ]	Axial torque resistance Wy [mm <sup>3</sup> ]
1-051-22-00	L 18-10-2000	Aluminium	96.603	0.247	9	5.7	1057	3817	185	424
1-051-26-00	L 18-10-0001	Aluminium	96.603	0.247	9	5.7	1057	3817	185	424
1-051-42-00	L 18-18-2000	Aluminium	148.185	0.284	9	9	4182	6206	465	690
1-051-46-00	L 18-18-0001	Aluminium	148.185	0.284	9	9	4182	6206	465	690

## X-Profile / „X-System“ X 25x10 and X 25x18 Profile

### Remarks:

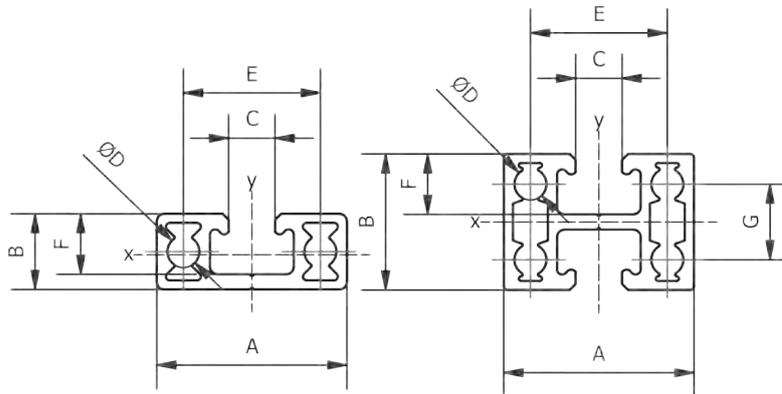
- best suited for part weight of up to 2 kg
- custom length upon request – see ordering example
- profile length min. 50 mm
- channel nuts are compatible to X and JU profiles
- special profile length larger than 2000 mm on request
- ØF = ready for M5

### Drawing:

Ø D core hole for M5

### Ordering example for custom length 1520 mm of X 25-18 profile:

Order text :  
1-052-86-00, X 25x18x1520



### Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-052-62-00	X 25-10-2000	25	10	6.2	4.2	18	8		2000	588
1-052-66-00	X 25-10-0001	25	10	6.2	4.2	18	8		1	0.3
1-052-82-00	X 25-18-2000	25	18	6.2	4.2	18	8	10	2000	908
1-052-86-00	X 25-18-0001	25	18	6.2	4.2	18	8	10	1	0.5

### Properties

Part No.	Description	Material	Cross section area [mm <sup>2</sup> ]	Weight/Meter [kg]	Center point x [mm]	Center point y [mm]	Axial moment of inertia I <sub>x</sub> [mm <sup>4</sup> ]	Axial moment of inertia I <sub>y</sub> [mm <sup>4</sup> ]	Axial torque resistance W <sub>x</sub> [mm <sup>3</sup> ]	Axial torque resistance W <sub>y</sub> [mm <sup>3</sup> ]
1-052-62-00	X 25-10-2000	Aluminium	115.421	0.294	12.5	4.58	1357	7636	296.3	611
1-052-66-00	X 25-10-0001	Aluminium	115.421	0.294	12.5	4.58	1357	7636	296.3	611
1-052-82-00	X 25-18-2000	Aluminium	166.641	0.454	12.5	9	5969	12350	663.2	988
1-052-86-00	X 25-18-0001	Aluminium	166.641	0.454	12.5	9	5969	12350	663.2	988

**000**  
Quick Change Systems

**050**  
Profiles Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

**190**  
Profile Accessories

**200**  
Vacuum Cup Connectors

**220**  
Vacuum Cups

**224**  
Special Vacuum Cups

**230**  
Manifold

**290**  
Adapters for Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 050 | Profile-Channel Nut

## X-Profile / „X-System“ 25x25 and 50x25



**Remarks:**

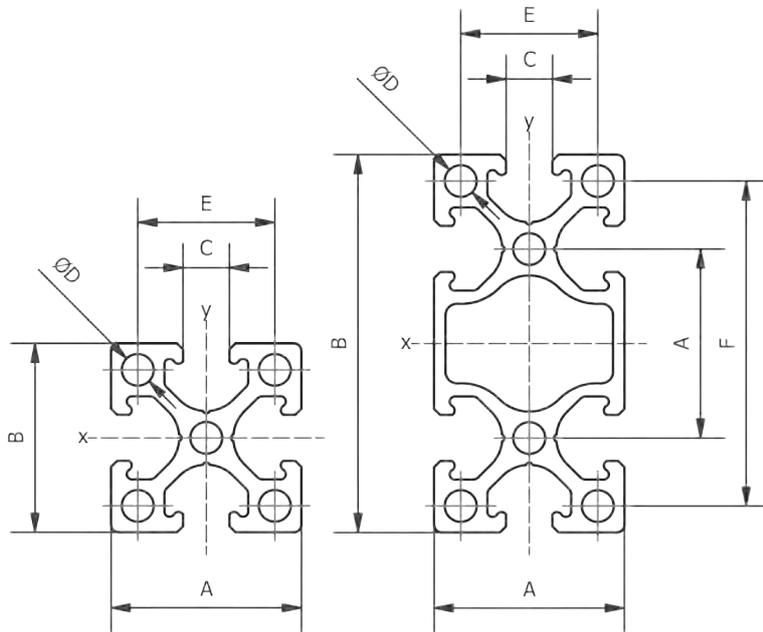
- for parts up to 10 kg
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request

**Drawing:**

∅ D core hole for M5

**Ordering example for custom length 1520 mm of X 25-25 profile:**

Order text :  
1-052-26-00, X 25x25x1520



**Measures**

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Length [mm]	Weight [g]
1-052-21-00	X 25-25-1000	25	25	6	4.2	18		1000	620
1-052-22-00	X 25-25-2000	25	25	6	4.2	18		2000	1240
1-052-26-00	X 25-25-0001	25	25	6	4.2	18		1	0.6
1-052-41-00	X 50-25-1000	25	50	6	4.2	18	43	1000	1026
1-052-42-00	X 50-25-2000	25	50	6	4.2	18	43	2000	2052
1-052-46-00	X 50-25-0001	25	50	6	4.2	18	43	1	1.0

**Properties**

Part No.	Description	Material	Cross section area [mm²]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm⁴]	Axial moment of inertia Iy [mm⁴]	Axial torque resistance Wx [mm³]	Axial torque resistance Wy [mm³]
1-052-21-00	X 25-25-1000	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-22-00	X 25-25-2000	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-26-00	X 25-25-0001	Aluminium	254.929	0.62	12.5	12.5	16073	16073	1286	1286
1-052-41-00	X 50-25-1000	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260
1-052-42-00	X 50-25-2000	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260
1-052-46-00	X 50-25-0001	Aluminium	423.309	1.026	25	12.5	111319	28244	4453	2260

## JU-Profile / „JU-System“

### Remarks:

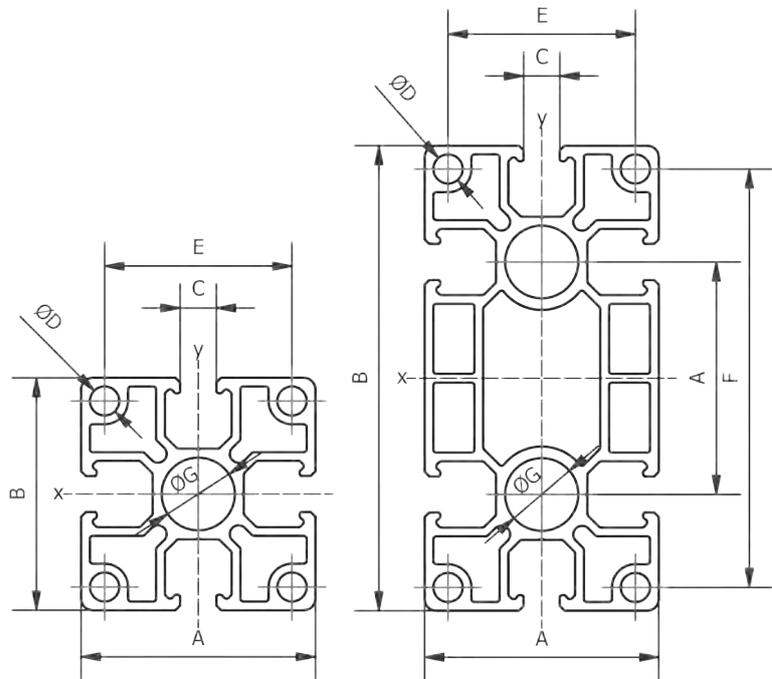
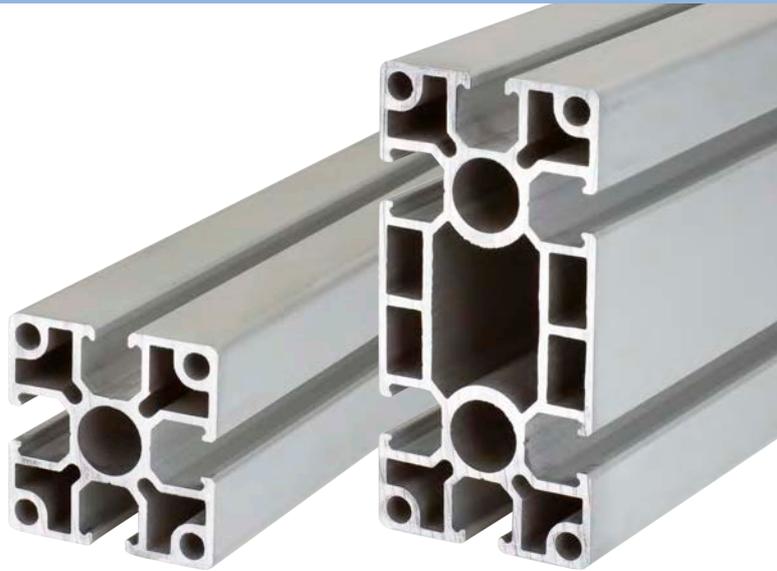
- Jumbo Universal, the industry's first and only large profile which accommodates the same channel nut as the Light and X profiles
- specifically developed profile for part weight > 10 kg
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request
- channel nut can be dropped in

### Drawing:

- ∅ D core hole for M6
- ∅ G core hole for M14x1,5,

### Ordering example for custom length 1520 mm of JU 80-40 profile:

Order text :  
1-055-46-00, JU 80x40x1520



### Measures

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-055-23-00	JU 40-40-2000	40	40	6.2	5	32		12.5	2000	2678
1-055-26-00	JU 40-40-0001	40	40	6.2	5	32		12.5	1	1.3
1-055-42-00	JU 80-40-2000	40	80	6.2	5	32	72	12.5	2000	4634
1-055-46-00	JU 80-40-0001	40	80	6.2	5	32	72	12.5	1	2.3

### Properties

Part No.	Description	Material	Cross section area [mm <sup>2</sup> ]	Weight/Meter [kg]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [mm <sup>4</sup> ]	Axial moment of inertia Iy [mm <sup>4</sup> ]	Axial torque resistance Wx [mm <sup>3</sup> ]	Axial torque resistance Wy [mm <sup>3</sup> ]
1-055-23-00	JU 40-40-2000	Aluminium	521.3	1339	20	20	86629	86629	4331	4331
1-055-26-00	JU 40-40-0001	Aluminium	521.3	1339	20	20	86629	86629	4331	4331
1-055-42-00	JU 80-40-2000	Aluminium	891.9	2317	40	20	586369	155268	14660	7764
1-055-46-00	JU 80-40-0001	Aluminium	891.9	2317	40	20	586369	155268	14660	7764

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Quick Change Systems

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Profiles Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

**190**  
Profile Accessories

**200**  
Vacuum Cup Connectors

**220**  
Vacuum Cups

**224**  
Special Vacuum Cups

**230**  
Manifold

**290**  
Adapters for Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 050 | Profile-Channel Nut

## K-Profile / Construction Profile

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

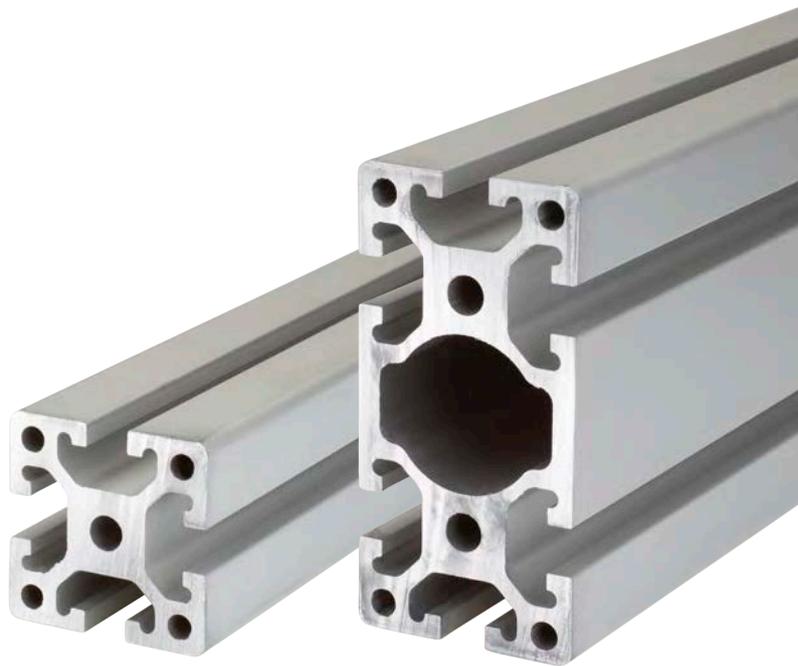
**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others



**Remarks:**

- construction profile best suited for secondary machinery and fixtures
- standard channel nuts do not fit, but most connectors are available for this profile
- custom length on request – see ordering example
- special profile length larger than 2000 mm on request

**Drawing:**

∅ D core hole for M6  
∅ G core hole for M8

**Ordering example for custom length 1520 mm of K 80-40 profile:**

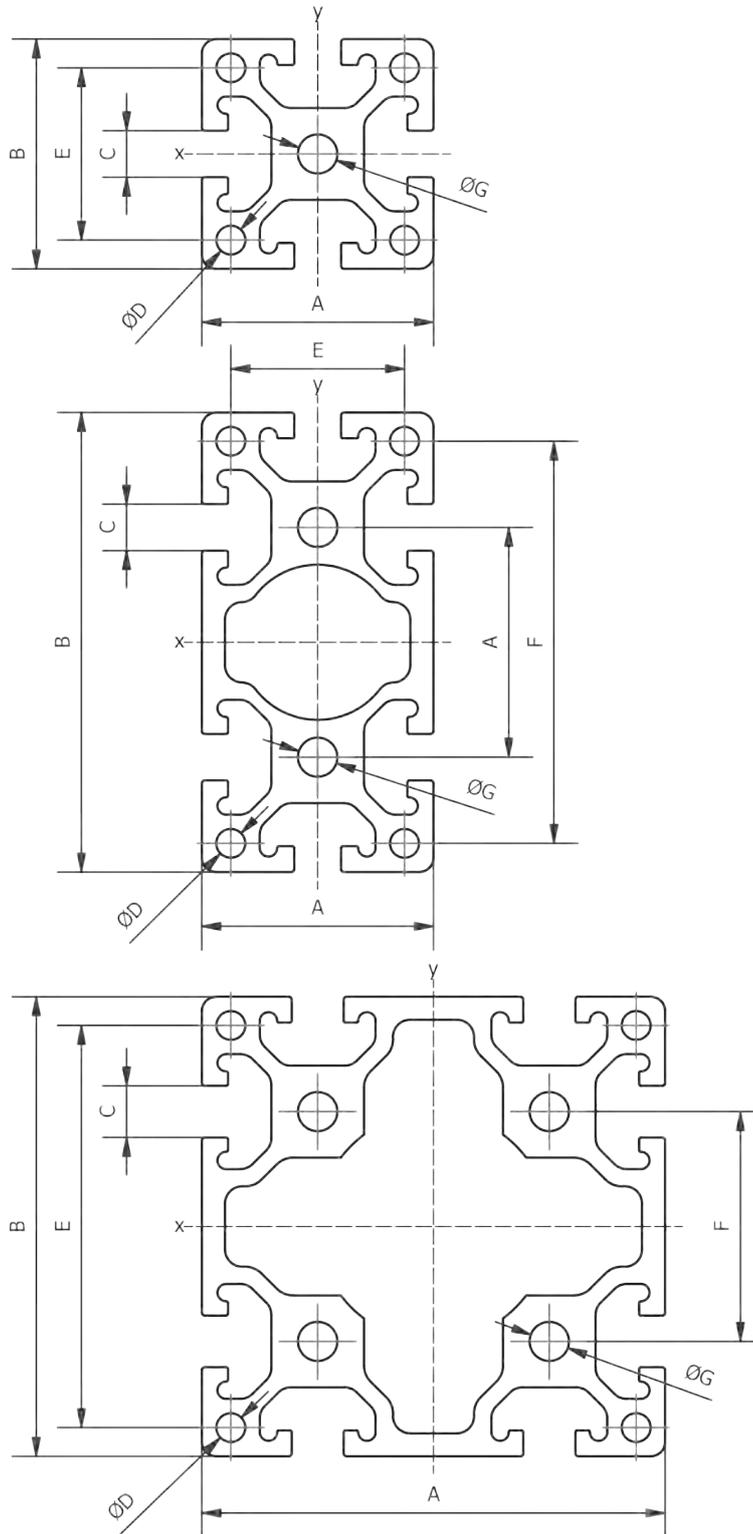
Order text : 1-054-46-00, K 80x40x1520



**Measures**

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Length [mm]	Weight [g]
1-054-27-00	K 40-40-2000	40	40	8.1	5	30		6.8	2000	4200
1-054-26-00	K 40-40-0001	40	40	8.1	5	30		6.8	1	2.1
1-054-46-00	K 80-40-0001	40	80	8.1	5	30	70	6.8	1	3.6
1-054-66-00	K 80-80-0001	80	80	8.1	5	70	40	6.8	1	5.8

**K-Profile / Construction Profile (Continuation)**



**Properties**

Part No.	Description	Material	Cross section area [cm <sup>2</sup> ]	Weight/Meter [kg/m]	Center point ex [mm]	Center point ey [mm]	Axial moment of inertia Ix [cm <sup>4</sup> ]	Axial moment of inertia Iy [cm <sup>4</sup> ]	Axial torque resistance Wx [cm <sup>3</sup> ]	Axial torque resistance Wy [cm <sup>3</sup> ]
1-054-27-00	K 40-40-2000	Aluminium	780	2.09	20	20	118500	118500	5920	5920
1-054-26-00	K 40-40-0001	Aluminium	780	2.09	20	20	118500	118500	5920	5920
1-054-46-00	K 80-40-0001	Aluminium	1340	3.60	40	20	854100	222700	21350	11130
1-054-66-00	K 80-80-0001	Aluminium	2150	5.80	40	40	1516500	1516500	37910	37910

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Quick Change Systems

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Profiles Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

**190**  
Profile Accessories

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Vacuum Cup Connectors

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Vacuum Cups

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Special Vacuum Cups

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**300**  
Gripper Arms

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Gripper Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 050 | Profile-Channel Nut

## GWP1 / GPF / Channel Nut with one Thread



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Spring ball	Pass fit	Material	Weight [g]
1-058-31-15	GWP 3 U	L, X, JU	15	7.5	M3		x	Steel/zinc coated	5
1-058-41-15	GWP 4 U	L, X, JU	15	7.5	M4		x	Steel/zinc coated	5
1-058-51-15	GWP 5 U	L, X, JU	15	7.5	M5		x	Steel/zinc coated	5
1-058-61-18	GWP 6 U	L, X, JU	18	9	M6		x	Steel/zinc coated	6
1-059-41-22	GWP 4 K	K	22	11	M4	x		Steel/zinc coated	11
1-059-51-22	GWP 5 K	K	22	11	M5	x		Steel/zinc coated	10
1-059-61-22	GWP 6 K	K	22	11	M6	x		Steel/zinc coated	10
1-059-81-22	GWP 8 K	K	22	11	M8	x		Steel/zinc coated	9
1-061-81-00	GPF 8 K	K	22	7	M8	x	x	Steel/zinc coated	9
1-061-61-00	GPF 6 K	K	22	7	M6	x	x	Steel/zinc coated	18
1-061-51-00	GPF 5 K	K	22	7	M5	x	x	Steel/zinc coated	18

## GWP2 / Channel Nut with two Threads



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-42-08	GWP 4-8 U	L, X, JU	16	8	M4	Steel/zinc coated	5
1-058-42-17	GWP 4-17 U	L, X, JU	25	17	M4	Steel/zinc coated	5
1-058-42-25	GWP 4-25 U	L, X, JU	33	25	M4	Steel/zinc coated	5
1-058-42-31	GWP 4-31 U	L, X, JU	39	31	M4	Steel/zinc coated	11
1-058-52-10	GWP 5-10 U	L, X, JU	20	10	M5	Steel/zinc coated	11
1-058-52-15	GWP 5-15 U	L, X, JU	25	15	M5	Steel/zinc coated	11
1-058-52-16	GWP 5-16 U	L, X, JU	26	16	M5	Steel/zinc coated	10
1-058-52-18	GWP 5-18 U	L, X, JU	28	18	M5	Steel/zinc coated	12
1-058-52-20	GWP 5-20 U	L, X, JU	30	20	M5	Steel/zinc coated	12
1-058-52-22	GWP 5-22 U	L, X, JU	32	22	M5	Steel/zinc coated	12
1-058-52-25	GWP 5-25 U	L, X, JU	35	25	M5	Steel/zinc coated	12
1-058-52-28	GWP 5-28 U	L, X, JU	38	28	M5	Steel/zinc coated	14

## GWP2 / Channel Nut with two Threads (Continuation)

Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-52-30	GWP 5-30 U	L, X, JU	40	30	M5	Steel/zinc coated	14
1-058-52-35	GWP 5-35 U	L, X, JU	45	35	M5	Steel/zinc coated	16
1-058-52-38	GWP 5-38 U	L, X, JU	48	38	M5	Steel/zinc coated	17
1-058-52-40	GWP 5-40 U	L, X, JU	50	40	M5	Steel/zinc coated	18
1-058-52-42	GWP 5-42 U	L, X, JU	52	42	M5	Steel/zinc coated	20
1-058-52-45	GWP 5-45 U	L, X, JU	55	45	M5	Steel/zinc coated	20
1-058-52-50	GWP 5-50 U	L, X, JU	60	50	M5	Steel/zinc coated	22
1-058-52-58	GWP 5-58 U	L, X, JU	68	58	M5	Steel/zinc coated	26
1-058-52-60	GWP 5-60 U	L, X, JU	70	60	M5	Steel/zinc coated	26
1-058-52-63	GWP 5-63 U	L, X, JU	73	63	M5	Steel/zinc coated	27
1-058-52-65	GWP 5-65 U	L, X, JU	75	65	M5	Steel/zinc coated	28
1-058-52-70	GWP 5-70 U	L, X, JU	80	70	M5	Steel/zinc coated	29
1-058-52-80	GWP 5-80 U	L, X, JU	90	80	M5	Steel/zinc coated	33
1-058-52-90	GWP 5-90 U	L, X, JU	100	90	M5	Steel/zinc coated	37
1-058-52-00	GWP 5-100 U	L, X, JU	110	100	M5	Steel/zinc coated	41
1-058-62-10	GWP 6-10 U	L, X, JU	22	10	M6	Steel/zinc coated	6
1-058-62-15	GWP 6-15 U	L, X, JU	27	15	M6	Steel/zinc coated	8
1-058-62-20	GWP 6-20 U	L, X, JU	30	20	M6	Steel/zinc coated	10
1-058-62-25	GWP 6-25 U	L, X, JU	37	25	M6	Steel/zinc coated	11
1-058-62-30	GWP 6-30 U	L, X, JU	42	30	M6	Steel/zinc coated	14
1-058-62-35	GWP 6-35 U	L, X, JU	47	35	M6	Steel/zinc coated	15
1-058-62-40	GWP 6-40 U	L, X, JU	52	40	M6	Steel/zinc coated	18
1-058-62-45	GWP 6-45 U	L, X, JU	57	45	M6	Steel/zinc coated	19
1-058-62-50	GWP 6-50 U	L, X, JU	62	50	M6	Steel/zinc coated	22
1-058-62-51	GWP 6-51 U	L, X, JU	60	51	M6	Steel/zinc coated	21
1-058-62-60	GWP 6-60 U	L, X, JU	72	60	M6	Steel/zinc coated	25
1-058-62-70	GWP 6-70 U	L, X, JU	82	70	M6	Steel/zinc coated	29
1-058-62-80	GWP 6-80 U	L, X, JU	92	80	M6	Steel/zinc coated	33
1-058-62-90	GWP 6-90 U	L, X, JU	102	90	M6	Steel/zinc coated	36
1-058-62-91	GWP 6-91 U	L, X, JU	100	91	M6	Steel/zinc coated	36
1-058-62-00	GWP 6-100 U	L, X, JU	112	100	M6	Steel/zinc coated	40
1-059-52-10	GWP 5-10 K	K	20	10	M5	Steel/zinc coated	9
1-059-62-15	GWP 6-15 K	K	27	15	M6	Steel/zinc coated	12
1-059-62-20	GWP 6-20 K	K	32	20	M6	Steel/zinc coated	14
1-059-62-25	GWP 6-25 K	K	37	25	M6	Steel/zinc coated	18
1-059-62-30	GWP 6-30 K	K	42	30	M6	Steel/zinc coated	19
1-059-62-40	GWP 6-40 K	K	52	40	M6	Steel/zinc coated	25
1-059-62-50	GWP 6-50 K	K	62	50	M6	Steel/zinc coated	30
1-059-62-90	GWP 6-90 K	K	102	90	M6	Steel/zinc coated	51
1-059-82-00	GWP 8-100 K	K	116	100	M8	Steel/zinc coated	57
1-059-82-30	GWP 8-30 K	K	46	30	M8	Steel/zinc coated	20
1-059-82-40	GWP 8-40 K	K	56	40	M8	Steel/zinc coated	25

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Channel Nuts

**100/115**  
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**190**  
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**300**  
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**700**  
Special Elements

**800**  
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**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

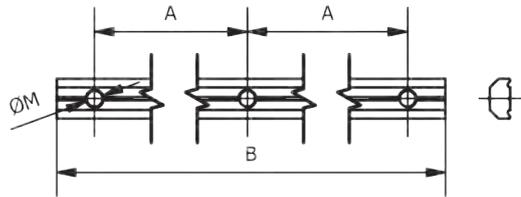
# 050 | Profile-Channel Nut

## GWP3 / Channel Nut with three Threads



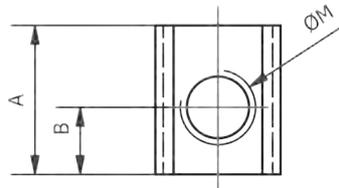
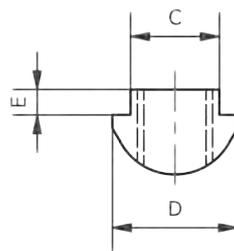
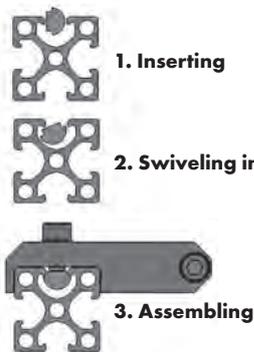
**Remarks:**

- channel nut with 3 bore holes
- compatible to GPM 3



Part No.	Description	Compatible with profile	A [mm]	B [mm]	Ø M [mm]	Material	Weight [g]
1-058-53-01	GWP 5-100-100 U	L,X,JU	100	220	M5	Steel/zinc coated	83
1-058-63-01	GWP 6-100-100 U	L,X,JU	100	220	M6	Steel/zinc coated	82

## GWP EX U / Channel Nut with Swivel-in-Function



**Remarks:**

**Application: for adding components belated to the EOAT**

- easy to handle
- high flexibility
- no demounting of the EOAT necessary, other components stay in their original position
- compatible to X-system components
- locks against rotation, form closure

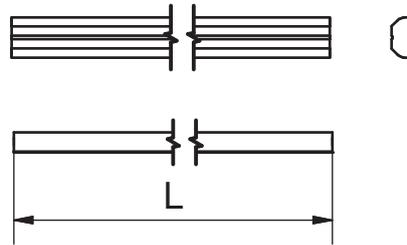
Part No.	Description	Compatible with profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Ø M [mm]	Material	Weight [g]
1-056-32-01	GWP EX 3 U	L, X, JU	10	2,5	5,9	8,3	1,7	M3	Steel chromated	2
1-056-42-01	GWP EX 4 U	L, X, JU	10	3,5	5,9	8,3	1,7	M4	Steel chromated	2
1-056-52-01	GWP EX 5 U	L, X, JU	10	4,5	5,9	8,3	1,7	M5	Steel chromated	2

## PLU / Channel Nut

**Remarks:**

**Application: for making customized channel nuts**

- channel nut without bore holes



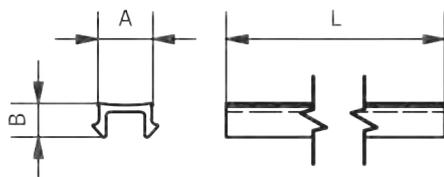
Part No.	Description	Compatible with profile	L [mm]	Material	Weight [g]
1-090-02-00	PL-U	L, X, JU	2000	Steel, zinc coded	769

## ADP / Profile Channel Cover

**Remarks:**

**Application: e.g. to avoid cuttings falling into profiles in cutting stations**

- cover snaps into the profile channel
- closes the profile channel and protects it against debris
- fits in L, X and JU profile



Part No.	Description	A [mm]	B [mm]	Length [mm]	Sold in	Material
1-090-10-00	ADP 2000	6.8	4	2000	10x2000 mm	Plastic
1-090-11-00	ADP 1000	6.8	4	1000	20x1000 mm	Plastic

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

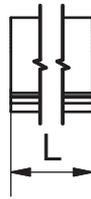
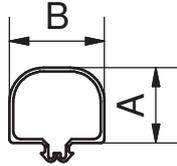
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 050 | Profile-Channel Nut

## KKP / Cable and Hose Channel



**Remarks:**

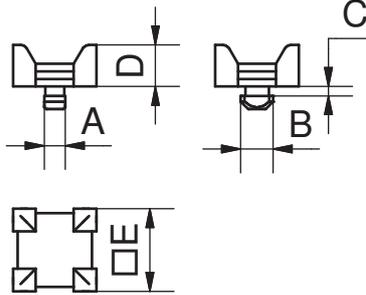
**Application: for installing and hiding pneumatics and electrics at profiles**

- hose channel can be clipped easily to the profiles
- compatible to L-, X- and JU-Profiles
- only for stationary machines like cutting stations

**Attention: not for usage with EOAT (robot hand) due to acceleration**

Part No.	Description	A [mm]	B [mm]	Length [mm]	Material
1-090-13-00	KKP 25-20	20	25	2000	Plastic
1-090-16-00	KKP 25-35	35	25	2000	Plastic

## KKB / X-JU: Twist on Cable and Hose Saddle



**Remarks:**

**Application: allows easy attachment of hoses and cables to the Aluminium profile**

- no tools needed
- easy to swivel into profiles
- quick installation without screw
- subsequent insertion into the profiles possible
- cables can be mounted in longitudinal and transverse direction

Part No.	Description	Compatible with profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-790-41-00	KKB-X-JU	X, JU	5.5	8.6	2.5	11	22	PA	3
1-790-44-00	KKB-K	K	8	15.8	4.3	11	22	PA	4

## KLB / Hook-and-Loop Tape



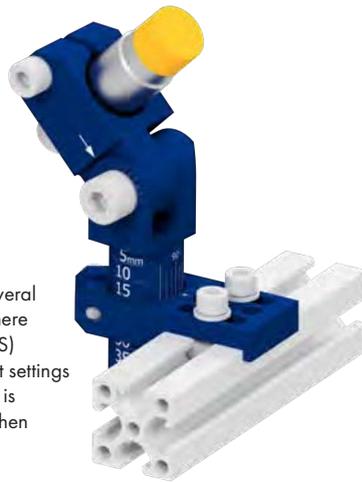
**Remarks:**

- versatile usage
- reusable
- can be used for all cables, pneumatic hoses and others
- easy to cut to the required length with scissors
- compatible with KKB Twist-on-Cable/Hose Saddle
- delivered without KKB

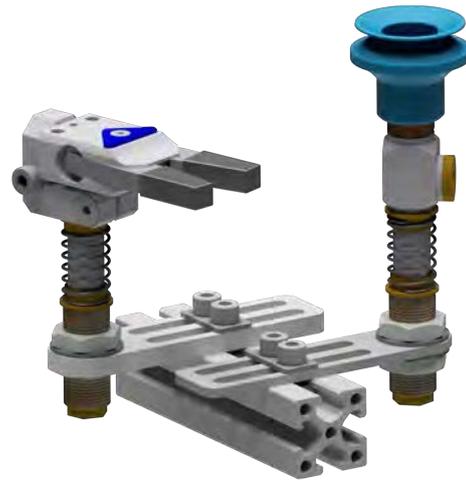
Part No.	Description	Length [m]
1-790-45-00	KLB	15

**Application example Blue Scale**

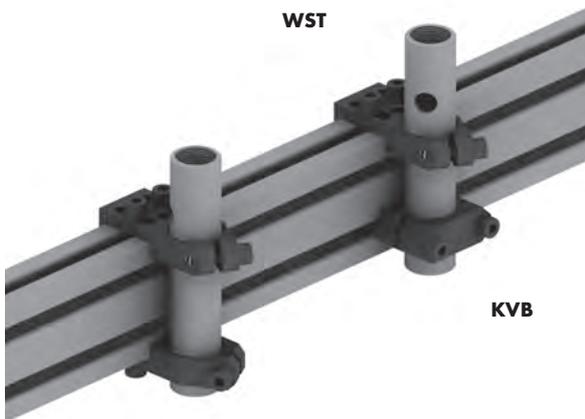
The combination of several Blue Scale elements (here WST BS and GLA-V BS) enables the most exact settings on the profile and e.g. is particularly suitable when using sensors.



**Application examples WSF**



**Application examples WST**



**Application examples WSL**



**Application examples WSL-G**



**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

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Clamps

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Connectors

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Nipper Bodies

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

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Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

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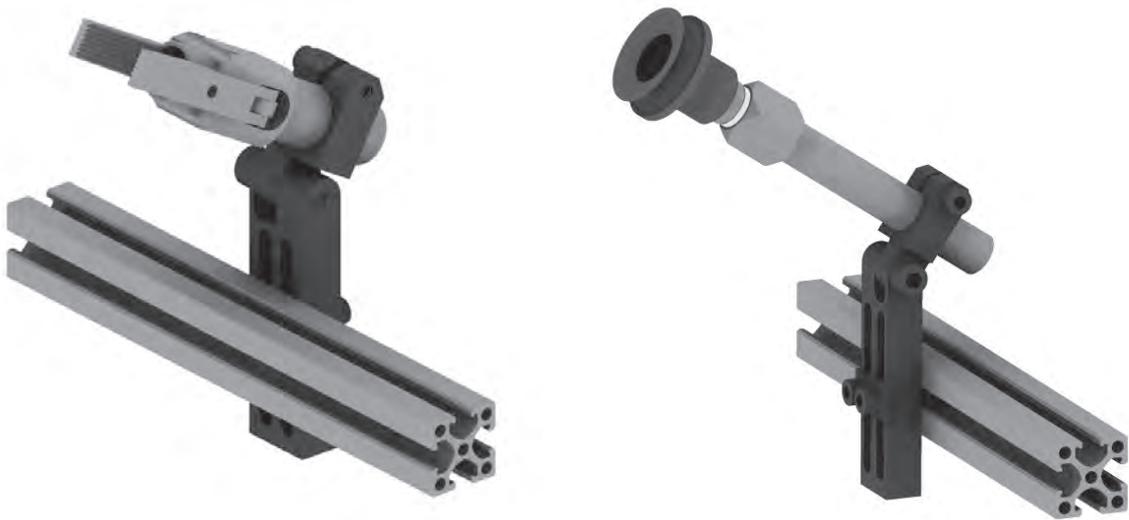
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

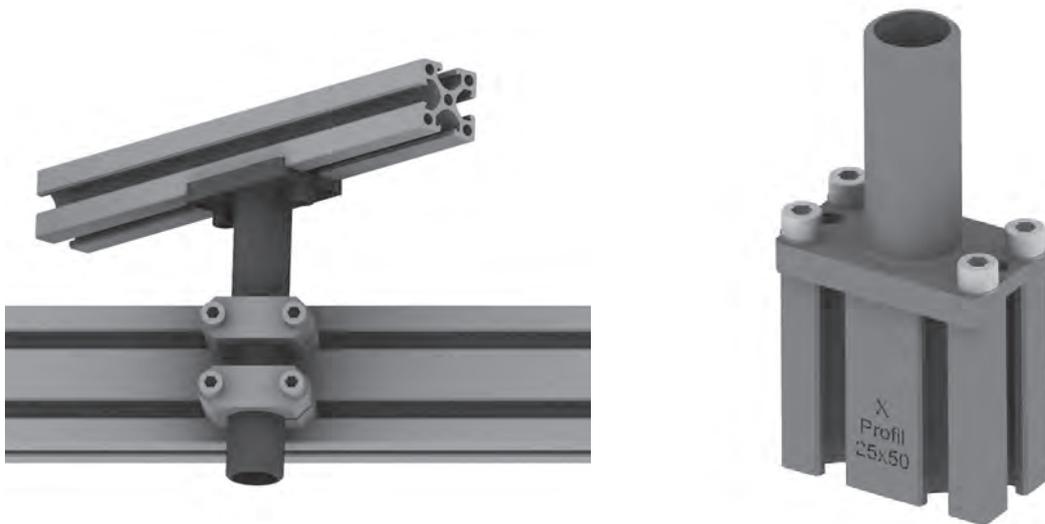
**990**  
PA-Forming  
Others

# 100/115 | Clamps

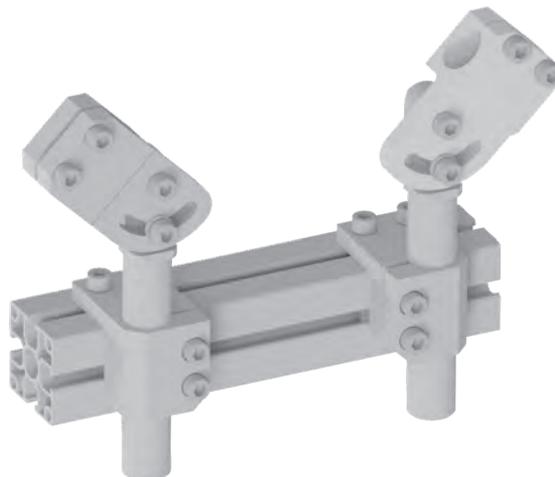
## Application examples WSL GA



## Application examples DKS

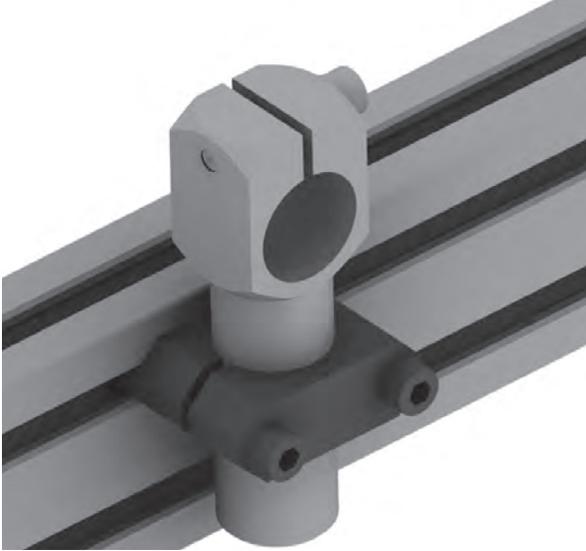


## Application example WSW / WSW M

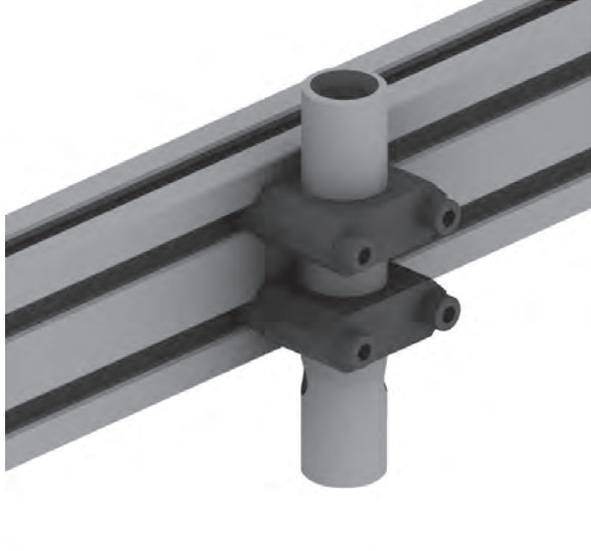


WSW combined with WSW M allow better setting options. In combination with the gripper arms GLA V and GLA VM assembly is more user friendly e.g. in complex robotic hands, such as the area of the bumper removal.

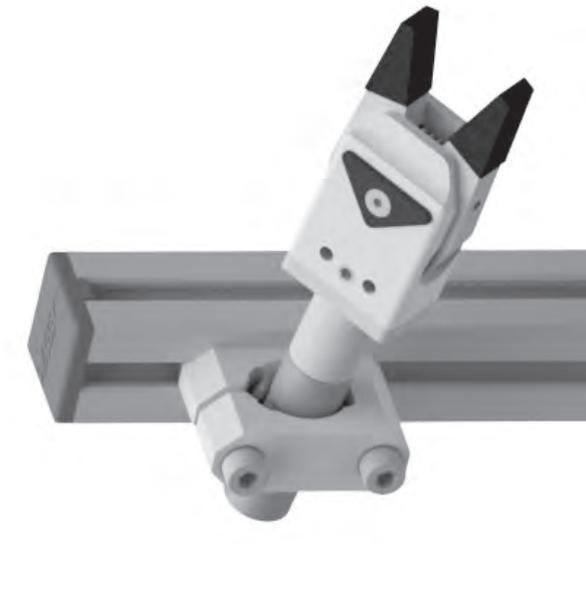
**Application examples KVB**



**Application example KVB G**



**Application example KVB S**



**Application example KKS**



**Application example PKS**

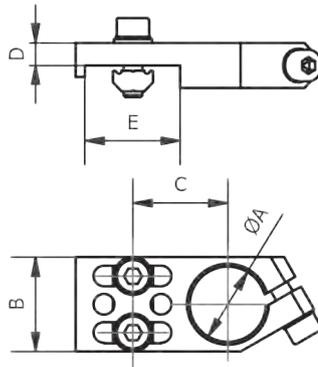


<b>000</b>	Quick Change Systems
<b>050</b>	Profiles Channel Nuts
<b>100/115</b>	Clamps
<b>120</b>	Profile Connectors
<b>190</b>	Profile Accessories
<b>200</b>	Vacuum Cup Connectors
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<b>460</b>	Needle Gripper
<b>600</b>	Nipper Bodies
<b>610</b>	Nipper Blades
<b>700</b>	Special Elements
<b>800</b>	Electrics and Sensors
<b>850</b>	Pneumatics
<b>990</b>	Tubular System Micro System
<b>990</b>	PA-Forming Others

# 100/115 | Clamps

## WST / Universal Angle Clamp

## WST BS / Universal Angle Clamp, Blue Scale



**Remarks:**

**Type WST**

**Application:** has the advantage of many possible applications: can be mounted form fit or adjustable (see application examples

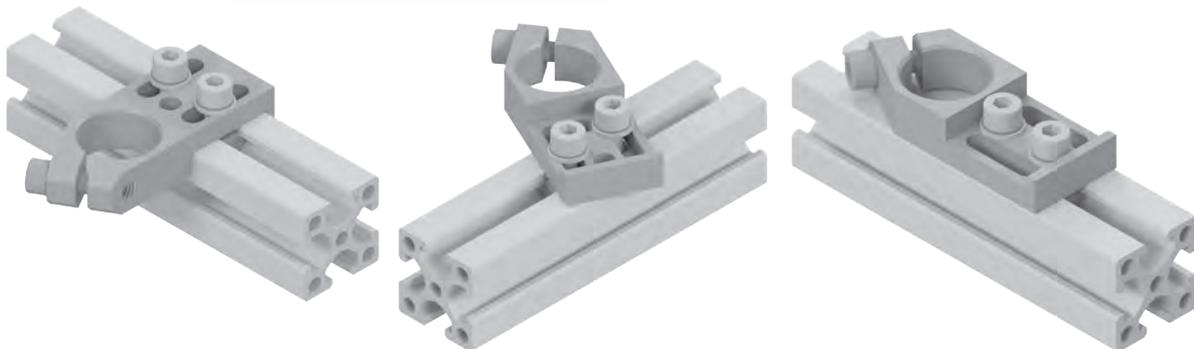
- just one tool needed: hexagon socket screw key
- mounted directly on profile
- allows compact gripper design

**Type WST BS „Blue Scale“**

**Application:** for exact mounting and replicable positioning of angles etc.

- as above
- blue anodized
- with marking for exact positioning
- more Blue Scale parts are available for WKA, GLA, GLA V and ASZ KS

Application examples



Part No.	Description	With long hole	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-103-00-00	WST L 10 U		10	16	16	4	18	Aluminium	18
1-103-03-00	WST L 14 U		14	20	18	6	18	Aluminium	26
1-103-06-00	WST X 10 U		10	16	19,5	4	25	Aluminium	19
1-103-09-00	WST X 14 U		14	20	21,5	6	25	Aluminium	33
1-119-00-00	WST SL 10	X	10	16	17-19,5	4	27	Aluminium	16
1-103-12-00	WST X 20 U	X	20	25	17,5-32,5	6	25	Aluminium	40
1-103-13-00	WST X 20 U BS	X	20	25	17,5-32,5	6	25	Aluminium	40
1-103-15-00	WST X 30 U	X	30	35	22,5-37,5	10	25	Aluminium	75
1-103-18-00	WST JU 20 U		20	25	32	7,5	40	Aluminium	60
1-103-19-00	WST JU 20 U BS		20	25	32	7,5	40	Aluminium	60
1-103-21-00	WST JU 30 U	X	30	40	27-47	10	40	Aluminium	116
1-103-27-00	WST K 20 U		20	25	32,5	7,5	40	Aluminium	63
1-103-28-00	WST K 20 U BS		20	25	32,5	7,5	40	Aluminium	63
1-103-30-00	WST K 30 U	X	30	40	27-47	10	40	Aluminium	125

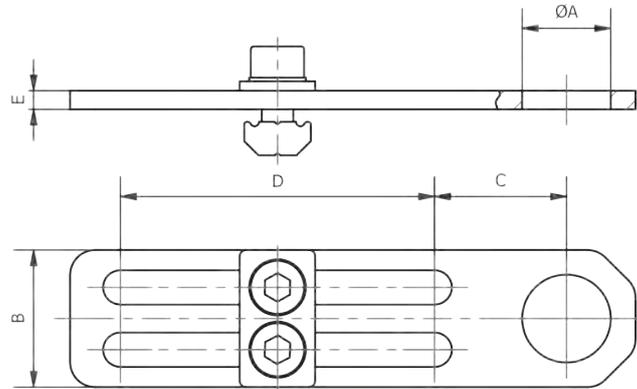
New

## WSF U / WSF M U / Flat Angle Clamp

**Remarks:**

**Application: universal Angle Clamp for mounting gripper arms with thread (such as GAF M)**

- **Version WSF U** without thread:  
Gripper Arms can be put through and counter-tightened
- **Version WSF M U** with thread:  
Gripper Arms can be screwed in
- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design



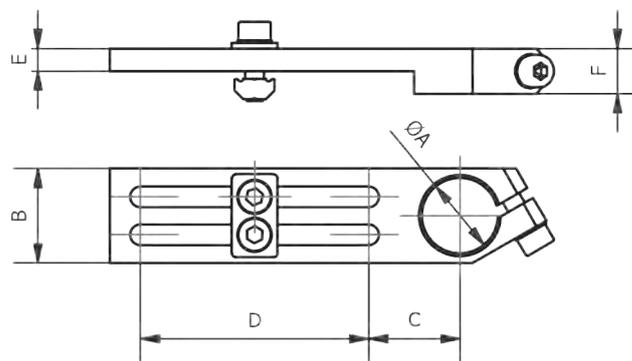
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-101-03-00	WSF X 10-40 U	10	18	16	40	3	stainless Steel	29
1-101-06-00	WSF X 14-50 U	14	22	21	50	3	stainless Steel	43
1-101-09-00	WSF X 20-60 U	20	30	24	60	3	stainless Steel	65
1-101-23-00	WSF X M10-40 U	M10x1	18	16	40	6	Aluminium	25
1-101-26-00	WSF X M14-50 U	M14x1	22	21	50	6	Aluminium	38
1-101-29-00	WSF X M20-60 U	M20x1.5	30	24	60	6	Aluminium	53

## WSL U / Universal Long Angle Clamp

**Remarks:**

**Application: universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with round connection to profiles**

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-105-07-00	WSL L 10-40 U	10	16	16	40	4	8	Aluminium	21
1-105-12-00	WSL L 14-40 U	14	20	18	40	5	10	Aluminium	31
<b>New</b> 1-119-10-00	WSL SL 10-40	10	16	16	40	4	8	Aluminium	21
1-105-17-00	WSL X 14-50 U	14	20	21	50	6	12	Aluminium	42
1-105-22-00	WSL X 20-60 U	20	25	24	60	6	12	Aluminium	53
1-105-37-00	WSL X 30-60 U	30	35	30	60	10	20	Aluminium	114
1-105-32-00	WSL JU 20-70 U	20	30	31	70	7.5	15	Aluminium	95
1-105-42-00	WSL JU 30-70 U	30	35	30	70	10	20	Aluminium	133

**000**  
Quick Change Systems

**050**  
Profiles Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

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Profile Accessories

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Vacuum Cup Connectors

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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

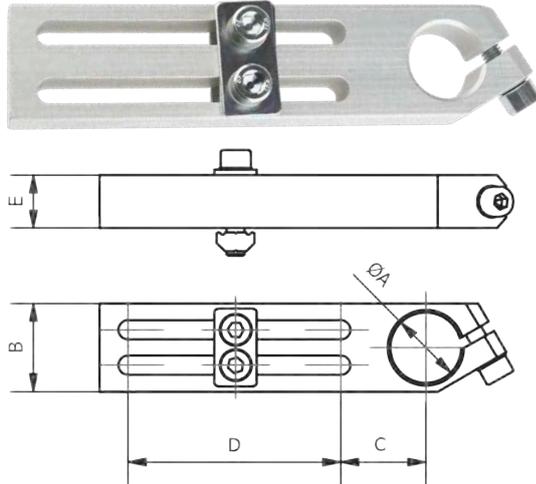
**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 100/115 | Clamps

## WSL VU / Universal Long Angle Clamp - Heavy Duty Version



**Remarks:**

**Application:** reinforced universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with round connection to profiles

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-105-09-00	WSL L+X 10-40 VU	10	16	16	40	8	Aluminium	27
1-119-60-00	WSL SL 10-40 VU	10	16	16	40	8	Aluminium	27
1-105-19-00	WSL X 14-50 VU	14	20	21	50	12	Aluminium	57
1-105-27-00	WSL X 20-60 VU	20	25	24	60	15	Aluminium	91
1-105-29-00	WSL K 14-50 VU	14	20	21	50	12	Aluminium	60
1-105-30-00	WSL K 20-70 VU	20	30	32	70	15	Aluminium	150
1-105-39-00	WSL X 30-60 VU	30	35	30	60	20	Aluminium	175
1-105-35-00	WSL JU 20-70 VU	20	30	31	70	15	Aluminium	141
1-105-40-00	WSL K 30-70 VU	30	40	27	70	20	Aluminium	247
1-105-45-00	WSL JU 30-70 VU	30	35	30	70	20	Aluminium	199

New

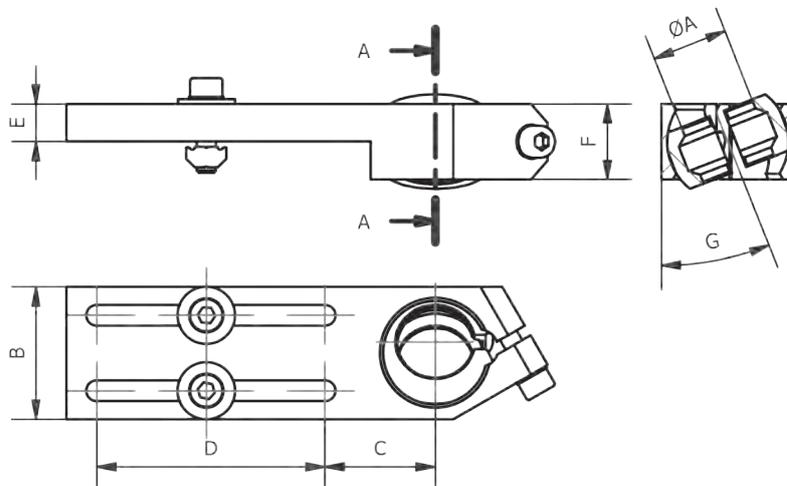
## WSL G / Long Angle Clamp with Ball Joint



**Remarks:**

**Application:** features an integrated ball joint that allows flexible angle adjustments for components

- degrees of freedom can be adjusted stepless
- can be mounted directly on profiles
- allows compact gripper design



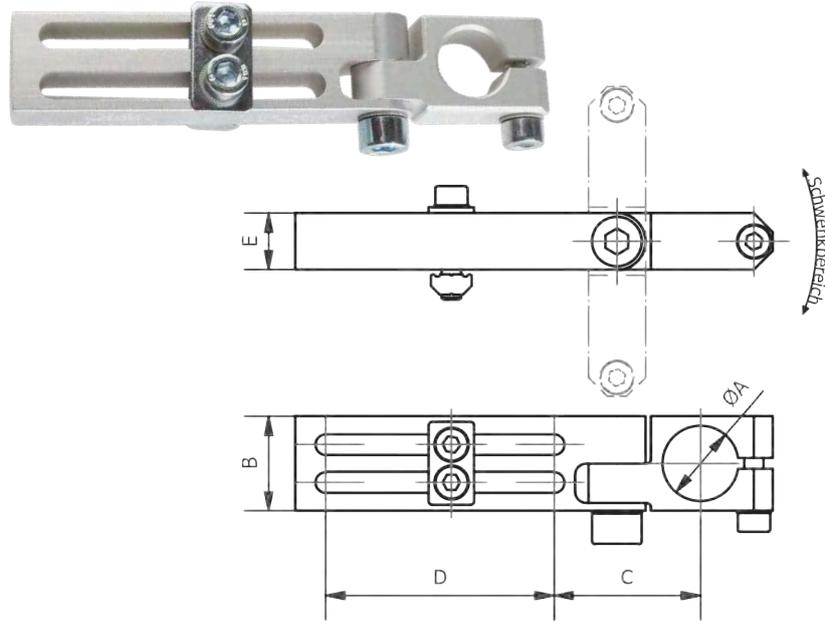
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [°]	Material	Weight [g]
1-106-03-00	WSL G X 10-50 U	10	20	20	50	6	12	0-13	Aluminium	46
1-106-06-00	WSL G X 14-60 U	14	25	24	60	6	12	0-17	Aluminium	62
1-106-09-00	WSL G X 20-60 U	20	35	29	60	10	20	0-19	Aluminium	156

## WSL GA / Long Angle Clamp with Swivel Head

**Remarks:**

**Application:** e.g. for mounting Gripper GRZ, vacuum cups etc. in an angle

- degrees of freedom can be adjusted stepless
- both directions non-rotating
- can be mounted directly on profiles
- allows compact gripper design



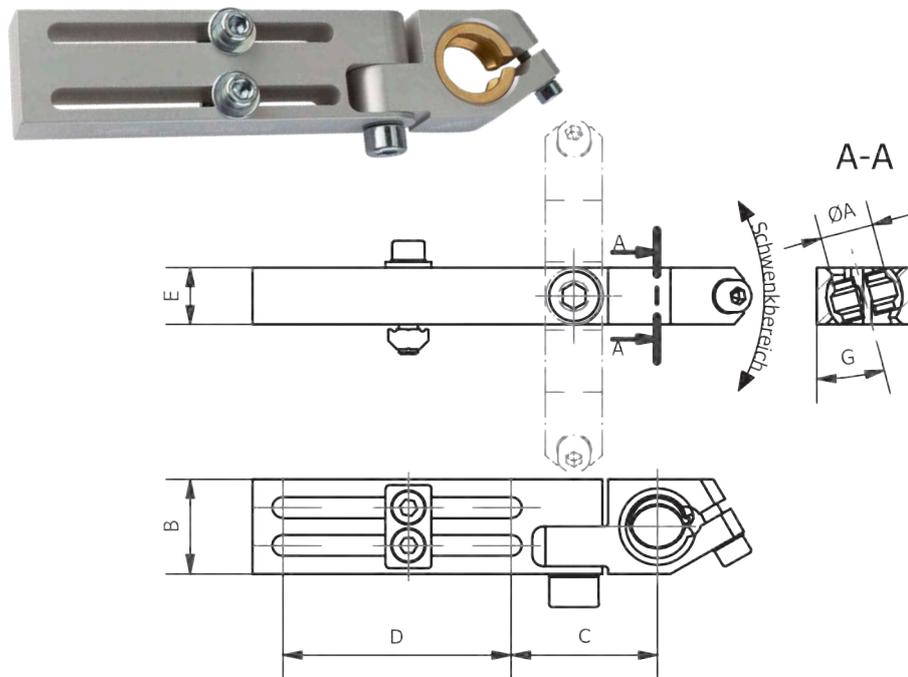
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel Area [°]	Material	Weight [g]
1-106-33-00	WSL GA X 10	10	16	27	40	10	+/-90	Aluminium	39
1-106-36-00	WSL GA X 14	14	20	32.5	50	12	+/-90	Aluminium	69
1-106-39-00	WSL GA X 20	20	25	38.5	60	15	+/-90	Aluminium	116
1-106-42-00	WSL GA JU 30	30	35	52	82	20	+/-90	Aluminium	265

## WSL KG / Long Angle Clamp with Swivel and Ball Joint

**Remarks:**

**Application:** allows positioning of Gripper GRZ etc. in free angle

- three-dimensional adjustability for stepless adjustment
- three movable axes by angle arm and ball joint
- maximum flexibility through freely adjustable angles
- protection against misalignment
- improved fixing
- can be mounted directly on profiles
- allows compact gripper design



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel Area Ball Joint G [°]	Swivel Area [°]	Material	Weight [g]
1-106-53-00	WSL KG X 10	10	20	32,5	50	12	0-13	+/-90	Aluminium	74
1-106-56-00	WSL KG X 14	14	25	38,5	60	15	0-17	+/-90	Aluminium	123
1-106-59-00	WSL KG JU 20	20	35	50	82	20	0-19	+/-90	Aluminium	294

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Nipper Blades

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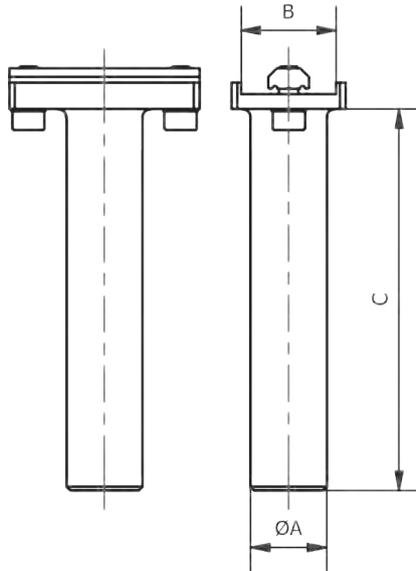
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 100/115 | Clamps

## DKS / 90° Mounting Bar



**Remarks:**

- can be mounted form locking to profiles
- clamping diameter fits to EOAT Robot Hand Kit and offers various adjustment options



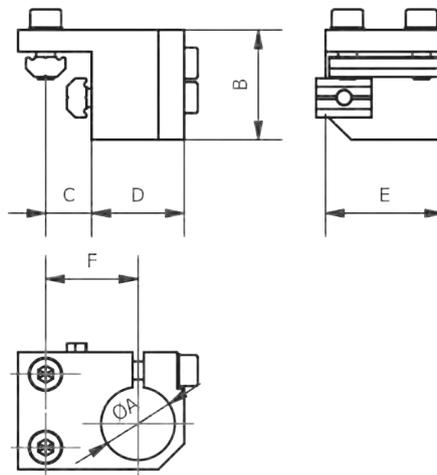
Part No.	Description	A [mm]	B [mm]	Dimension B form locking to profile	C [mm]	Material	Weight [g]
1-110-10-00	DKS L 10-60	10	18	L 18-10 or L 18-18	60	Aluminium	26
1-110-20-00	DKS X 14-80	14	25	X 25-25 or X 50-25	80	Aluminium	55
1-110-25-00	DKS X 20-50	20	25	X 25-25 or X 50-25	50	Aluminium	58
1-110-30-00	DKS X 20-100	20	25	X 25-25 or X 50-25	100	Aluminium	77

## WSW / WSW M / Angle Clamp and Angle Clamp, mirrored

WSW



WSW M



**Remarks:**

**Application: for a very stable connection between profiles and components**

- extra strong clamp
- utilizes 2 channel nuts and wraps around the profile to minimize deflection (exception: WSW L 10)

**Type WSW M:**

- mirrored design of WSW
- allows better setting options in a robot hand
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-102-00-00	WSW L 10	10	20	9	14	20	16	Aluminium	29
1-102-02-00	WSW X 10	10	25	12.5	14	25	19.5	Aluminium	36
1-102-03-00	WSW X 14	14	25	12.5	18	25	21.5	Aluminium	51
1-102-06-00	WSW X 20	20	30	12.5	25	32	24	Aluminium	74
1-102-07-00	WSW M X 20	20	30	12.5	25	32	24	Aluminium	74
1-102-09-00	WSW JU 20	20	38	20	25	35	32.5	Aluminium	115
1-102-08-00	WSW M JU 20	20	38	20	25	35	32.5	Aluminium	115
1-102-12-00	WSW JU 30	30	45	20	38	45	39	Aluminium	182
1-102-24-00	WSW K 20	20	38	20	25	35	32.5	Aluminium	124
1-102-27-00	WSW K 30	30	45	20	38	45	39	Aluminium	190

New

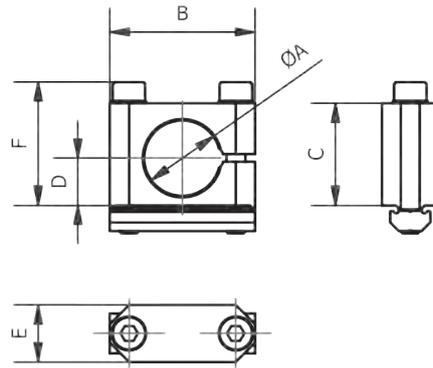
New

## KVB / Cross Connector

**Remarks:**

**Application: gripper arms, adapters, etc. can be clamped at an angle of 90° to the profile**

- Cross Connector is mounted directly to the profile
- exact positioning through an additional positive connection
- by loosening a screw, various settings can be made without changing the position of the KVB



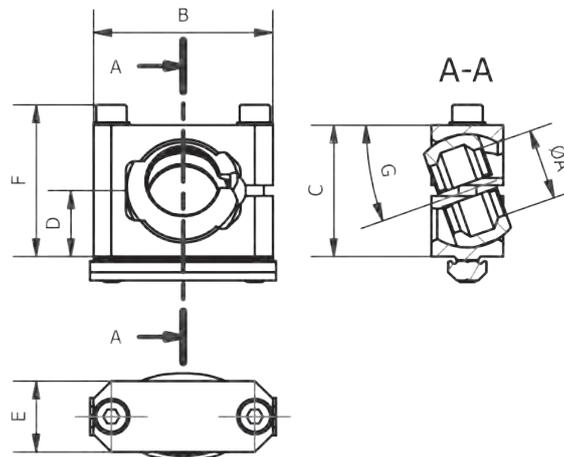
Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-115-05-00	KVB L+X 10	10	25	14	7	10	18.5	Aluminum	20
<b>New</b> 1-119-20-00	KVB SL 10	10	25	14	7	10	18,5	Aluminium	20
1-115-14-00	KVB L 14	14	32	18	9	12	22.5	Aluminium	21
1-115-15-00	KVB X 14	14	32	18	9	12	23.6	Aluminum	31
1-115-24-00	KVB K 14	14	40	28.5	13.5	20	35.2	Aluminum	86
1-115-20-00	KVB X 20	20	38	27	12.5	15	32.6	Aluminum	51
1-115-25-00	KVB K 20	20	40	28.5	12.5	20	35.2	Aluminum	75
1-115-27-00	KVB JU 20	20	40	28.5	12.5	15	35.2	Aluminum	72
1-115-30-00	KVB X 30	30	50	37	17	15	42.1	Aluminum	72
1-115-35-00	KVB K 30	30	50	34.5	17	20	41.2	Aluminum	93
1-115-37-00	KVB JU 30	30	50	34.5	17	20	41.2	Aluminum	85

## KVB G / Cross Connector with Ball Joint

**Remarks:**

**Application: flexible positioning of gripper arms, adapters, etc. through an additional ball joint**

- Cross Connector is mounted directly to the profile
- by loosening a screw, various settings can be made without changing the position of the KVB G



Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [°]	Material	Weight [g]
1-116-46-00	KVB G X 10	10	35	23	11	12	30	0-13	Aluminium	44
1-116-48-00	KVB G K 10	10	37	22	9.5	12	29	0-13	Aluminium	54
1-116-56-00	KVB G X 14	14	40	27	13	15	33	0-17	Aluminium	60
1-116-58-00	KVB G JU 14	14	45	26.5	12.5	15	35	0-17	Aluminium	71
1-116-60-00	KVB G K 14	14	47	26.5	12.5	15	35	0-17	Aluminium	79
1-116-66-00	KVB G X 20	20	50	37	18.5	20	43	0-19	Aluminium	125
1-116-68-00	KVB G JU 20	20	55	36.5	17.5	20	45	0-19	Aluminium	142
1-116-70-00	KVB G K 20	20	55	36.5	18	20	45	0-19	Aluminium	153

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

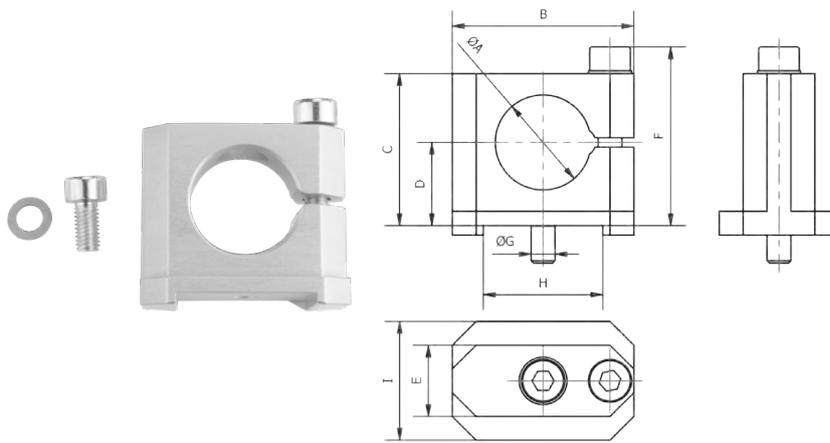
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 100/115 | Clamps

## KVB S / Cross Connector, front side



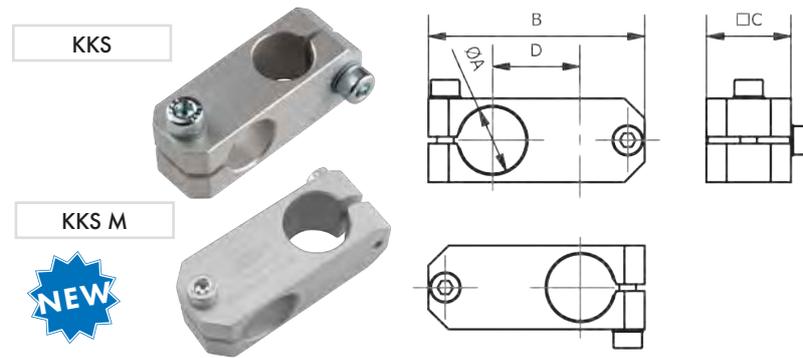
**Remarks:**

**Application:** e.g. for attaching supporting feet to the EOAT

- can be screwed to the front side of profiles in difficult space conditions

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Material	Weight [g]
1-117-20-00	KVB S X 20	20	38	32	17.5	15	37.6	M5	25	25	Aluminium	44

## KKS / Cross Clamp



**Remarks:**

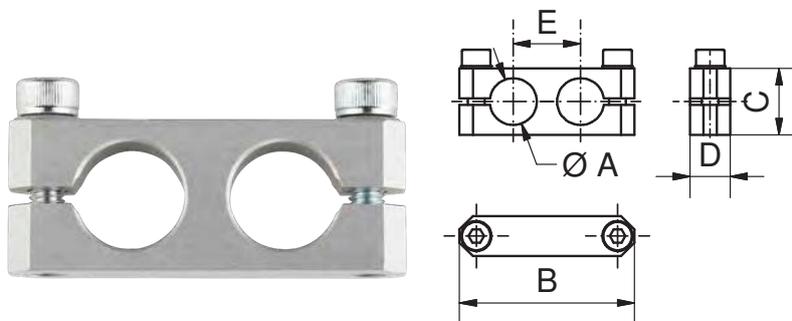
**Application:** connects two components with the same clamp diameter at a 90° angle

- both clamps can be set independently
- KKS M is the mirrored version

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-115-40-00	KKS 10-10-16	10	38	14	14	Aluminum	15
1-115-45-00	KKS 14-14-18	14	50	18	18	Aluminum	32
1-115-50-00	KKS 20-20-26	20	64	25	26	Aluminum	66
1-115-51-00	KKS-M 20-20-26	20	64	25	26	Aluminium	66

New

## PKS / Parallel Clamp



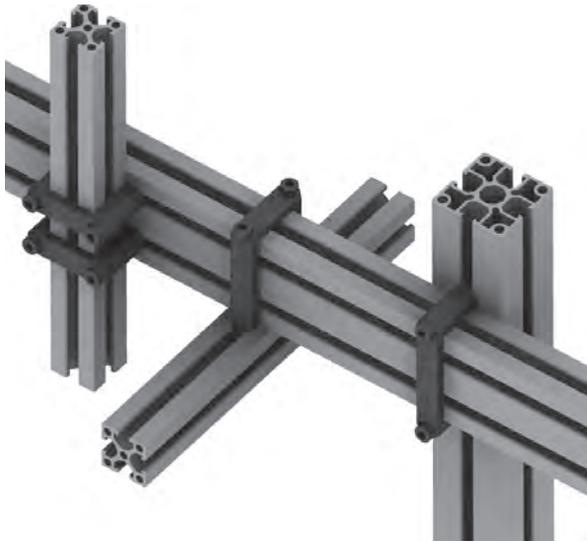
**Remarks:**

**Application:** connects two components with the same clamp diameter parallel

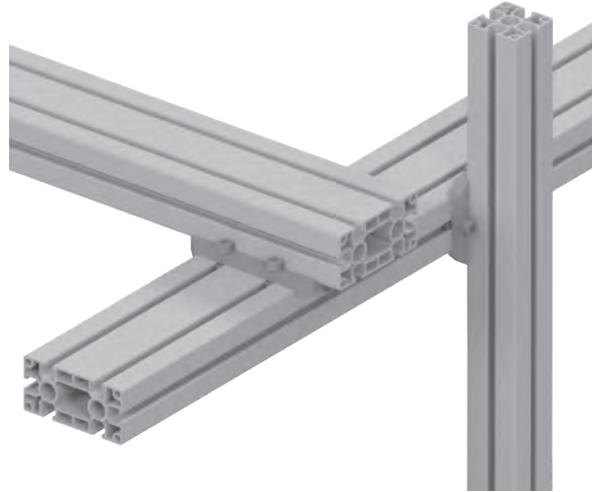
- both clamps can be set independently

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-115-60-00	PKS 10-10-15	10	38	15	8	15	Aluminum	11
1-115-65-00	PKS 14-14-20	14	52	20	10	20	Aluminum	29
1-115-70-00	PKS 20-20-26	20	64	25	15	26	Aluminum	42
1-115-75-00	PKS 30-30-38	30	88	35	20	38	Aluminum	98

**Application example KBV**



**Application example KPL**



**Application example KPL D**



**Application example EVB**



**Application example WIV**



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

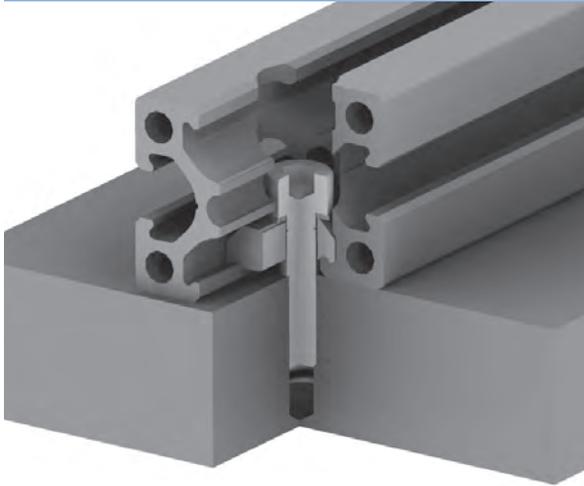
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 120 | Profile Connectors

## Application example SV



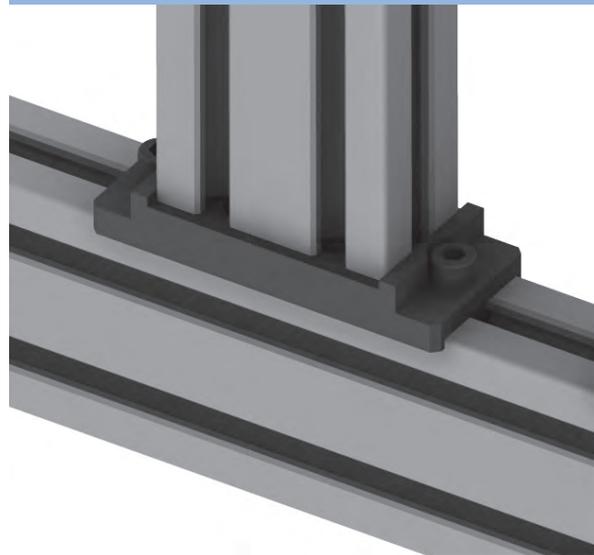
## Application example EPL



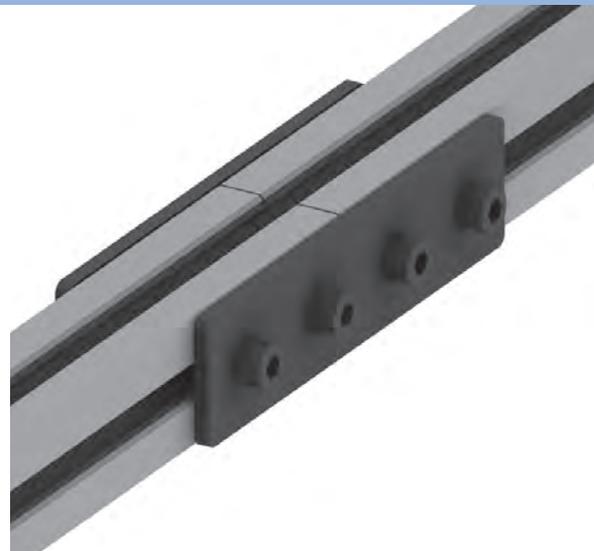
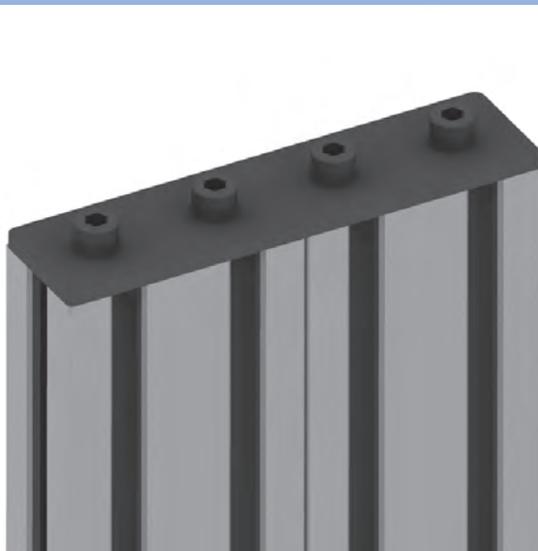
## Application example VBT



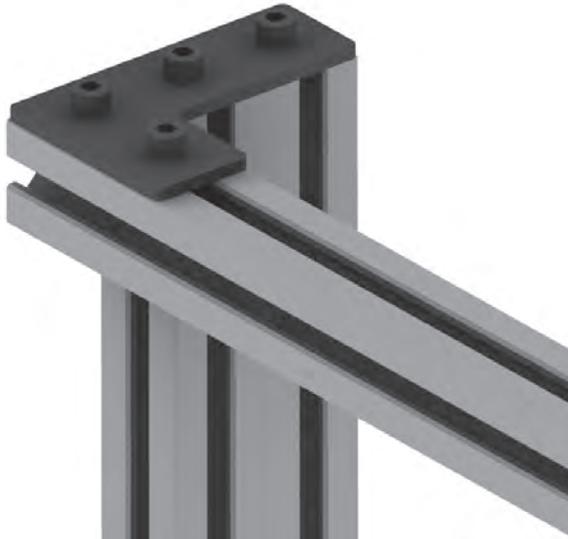
## Application examples SVB



## Application examples VBG



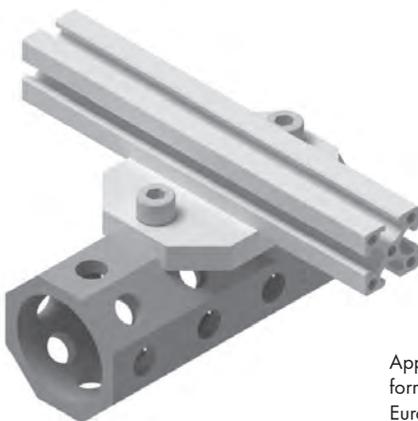
**Application examples VBL**



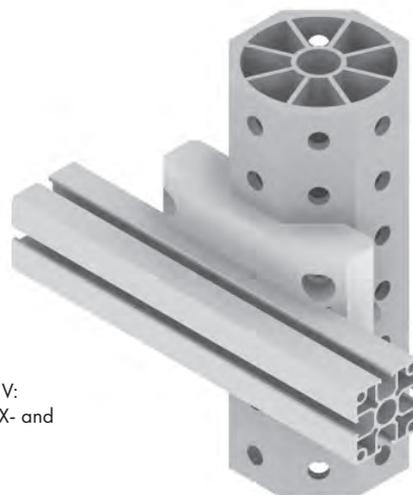
**Application examples VBW 0-90° and 45°**



**Application examples adaption / KPL EU and KPL V EU**



Application example KPL V:  
form lock fixing between X- and  
Europrofile form stability



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

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Vacuum Cups

**224**  
Special  
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Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

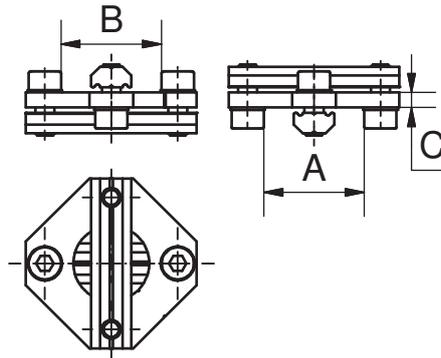
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 120 | Profile Connectors

## KPL F / Cross Joint Connector Flat



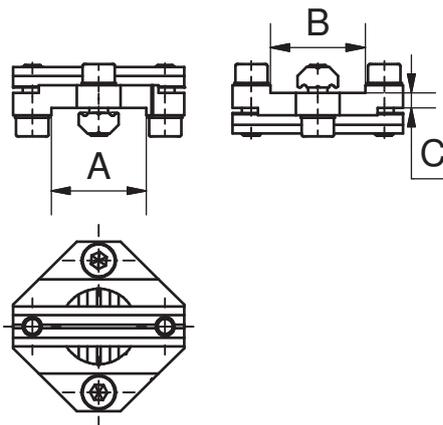
**Remarks:**

**Application: connects profiles in 90° to each other**

- flat design
- no leading edges (no positive locking)
- no drilling necessary
- after loosening two screws profile can be moved in one direction, after loosening all four screws profiles can be moved in both

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-120-50-00	KPL L 18-18 F	18	18	3	Aluminium	35
1-120-60-00	KPL X 25-25 F	25	25	4	Aluminium	57

## KPL / Cross Joint Connector



**Remarks:**

**Application: connects profiles in 90° to each other**

- with leading edges (positive locking)
- no drilling necessary
- after loosening two screws profile can be moved in one direction, after loosening all four screws profiles can be moved in both

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-120-55-00	KPL L 18-18	18	18	3	Aluminium	38
1-119-30-00	KPL SL 20-20	20	20	3	Aluminium	61
1-120-57-00	KPL X 25-L 18	25	18	4	Aluminium	63
1-120-65-00	KPL X 25-25	25	25	4	Aluminium	61
1-120-70-00	KPL X 50-25	50	25	4	Aluminium	99
1-120-75-00	KPL X 50-50	50	50	4	Aluminium	180
1-120-76-00	KPL JU 40-X 25	40	25	4	Aluminium	117
1-120-80-00	KPL K 40-40	40	40	4	Aluminium	130
1-120-82-00	KPL JU 40-40	40	40	4	Aluminium	110
1-120-83-00	KPL JU 80-X 25	80	25	4	Aluminium	163
1-120-85-00	KPL K 80-40	80	40	4	Aluminium	219
1-120-87-00	KPL JU 80-40	80	40	4	Aluminium	184
1-120-90-00	KPL K 80-80	80	80	4	Aluminium	352
1-120-93-00	KPL JU 80-80	80	80	4	Aluminium	299
1-120-95-00	KPL JU 80-X 50	80	50	4	Aluminium	229
1-120-98-00	KPL JU 40-X 50	40	50	4	Aluminium	151

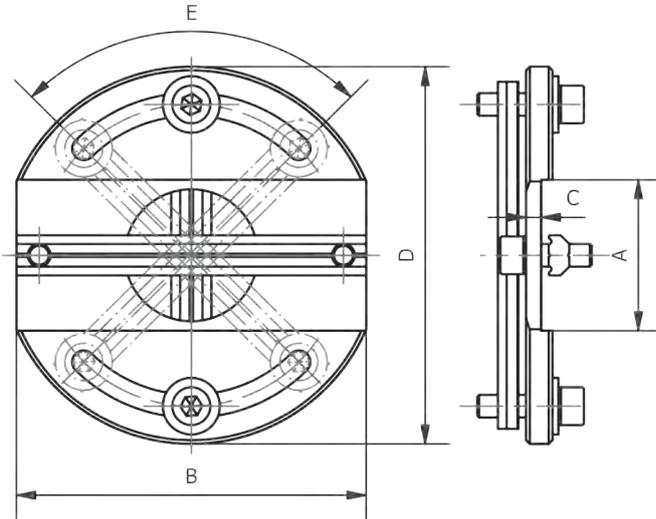
**New**

## KPL D / Cross Joint Connector, form-locking, swiveling

**Remarks:**

**Application: connects profiles steplessly +/- 90° to each other**

- profile is connected on one side with positive locking
- opposite side +/- 90° steplessly adjustable



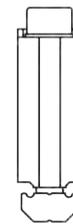
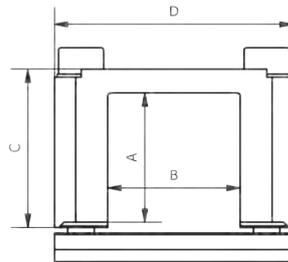
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [°]	Material	Weight [g]
1-120-45-00	KPL D JU 40	40	92	4	100	90	Aluminium	194

## KBV / Square Joint Connector

**Remarks:**

**Application: connects profiles in 90° to each other**

- no drilling necessary
- after loosening two screws profiles can be moved in all directions



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-120-05-00	KBV L 10-18	9.5	18	15	32	Aluminium	23
1-120-10-00	KBV L 18-18	17.5	18	23	32	Aluminium	27
1-120-13-00	KBV X 10-25	9.5	25	15	45	Aluminium	34
1-120-14-00	KBV X 18-25	17.5	25	23	45	Aluminium	40
1-120-15-00	KBV X 25-25	24.5	25	30	45	Aluminium	46
1-120-20-00	KBV X 50-25	49.5	25	55	45	Aluminium	65
1-120-25-00	KBV X 25-50	24.5	50	30	70	Aluminium	59
1-120-30-00	KBV K 40-40	39.5	40	48.5	60	Aluminium	97
1-120-35-00	KBV K 40-80	39.5	80	50	100	Aluminium	136
1-120-32-00	KBV JU 40-40	39.5	40	50	60	Aluminium	88
1-120-37-00	KBV JU 40-80	39.5	80	50	100	Aluminium	118
1-120-40-00	KBV K 80-40	79.5	40	90	60	Aluminium	138
1-120-42-00	KBV JU 80-40	79.5	40	90	60	Aluminium	132

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile Connectors

**190**  
Profile Accessories

**200**  
Vacuum Cup Connectors

**220**  
Vacuum Cups

**224**  
Special Vacuum Cups

**230**  
Manifold

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Adapters for Vacuum Cups

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Gripper Arms

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Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and Sensors

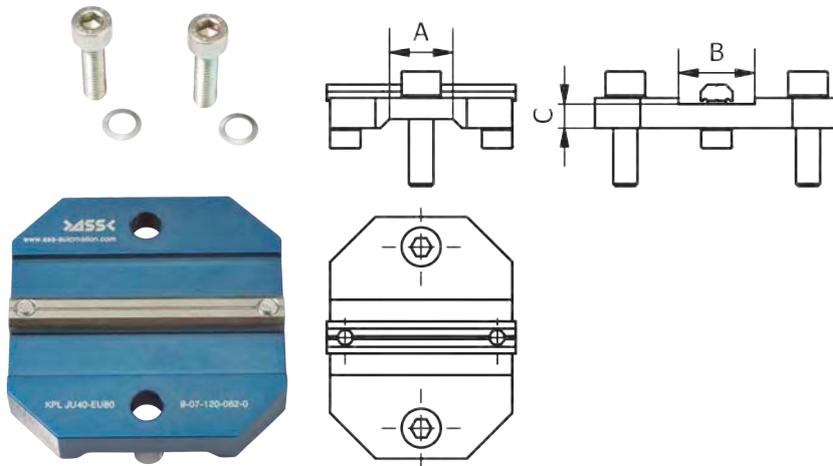
**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 120 | Profile Connectors

## KPL / Cross Joint Connector X/JU to Europrofile



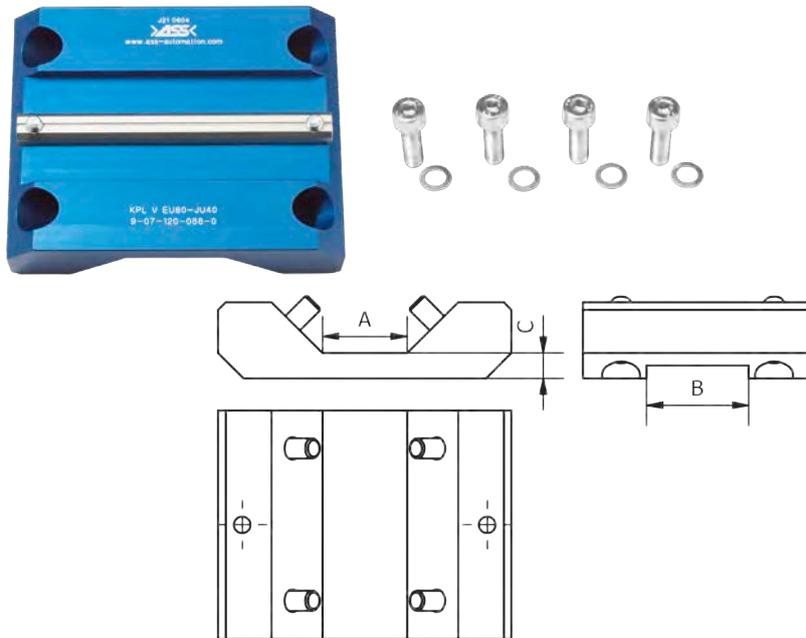
**Remarks:**

**Application:** Clamp for combining X profile with Euro profile for small, light parts i.e. sensors

- no drilling required
- easy to use
- form locking for X- and Europrofiles
- enhances the capabilities of both profiles
- » bushing for Europrofil has to be added by customer

Part No.	Description	A [mm]	B [mm]	C [mm]	X System	Euro System	Screws	Material	Weight [g]
9-07-120-065-0	KPL X25-EU50	21	25	8	X 25	EU 50	2	Aluminium	135
9-07-120-082-0	KPL JU40-EU80	33	40	8	JU 40	EU 80	2	Aluminium	237

## KPL V / Cross Joint Connector X/JU to Europrofile, Strong Version



**Remarks:**

**Application:** Clamp for combining X profile with Euro profile securely and safely by opposing screw

- no drilling required
- easy to use
- enhanced connectivity with 4 screw connections
- form locking for X- and Europrofiles
- enhances the capabilities of both profiles
- » bushing for Europrofil has to be added by customer

Part No.	Description	A [mm]	B [mm]	C [mm]	X System	Euro System	Screws	Material	Weight [g]
9-07-120-090-0	KPL V EU50-X25	21	25	10	X 25	EU 50	4	Aluminium	485
9-07-120-092-0	KPL V EU50-JU40	21	40	10	JU 40	EU 50	4	Aluminium	285
9-07-120-088-0	KPL V EU80-JU40	33	40	10	JU 40	EU 80	4	Aluminium	525

## EVB / Corner Joint Plate

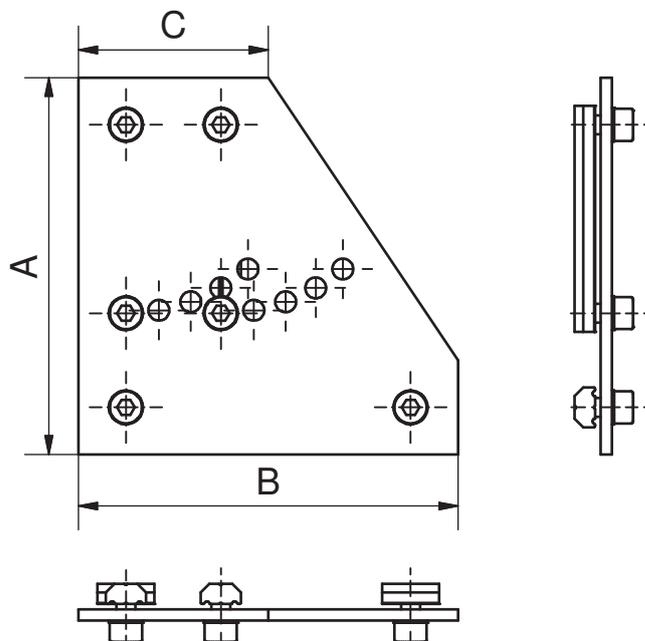
### Remarks:

**Application:** allows to connect profiles in angles of 90° / 100° / 110° / 120° or 130°

- exception: EVB X 100 allows 90° or 100° connections
- no need for additional work like drilling or thread cutting
- stable connection to expose profiles at an angle
- » see application examples

### Scope of delivery:

- screws and channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-121-85-00	EVB X 75	100	75	25	Aluminium	99
1-121-90-00	EVB X 100	100	100	50	Aluminium	136
1-121-97-00	EVBJU 100	100	80	40	Aluminium	127
1-121-95-00	EVBK 100	100	80	40	Aluminium	130

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
Vacuum Cups

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Adapters for  
Vacuum Cups

**300**  
Gripper Arms

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

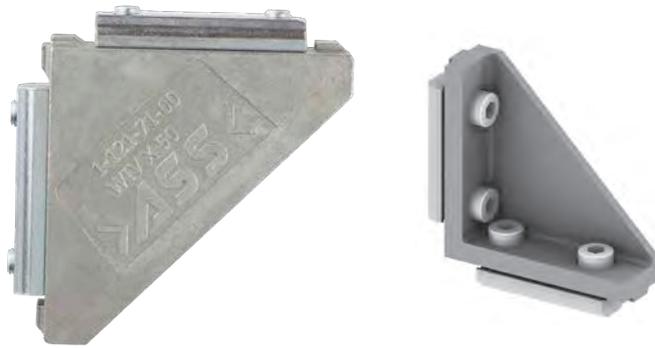
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

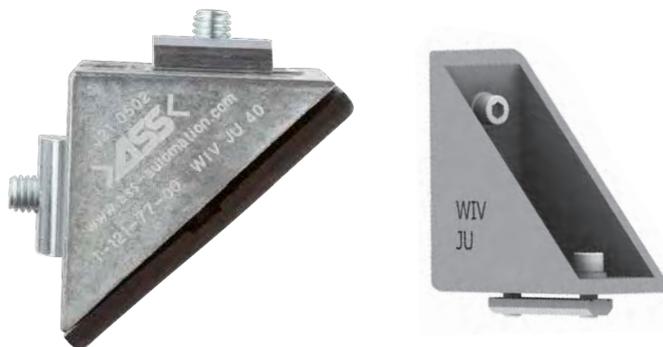
# 120 | Profile Connectors

## WIV / Corner Reinforcement Connector 90°

WIV...X



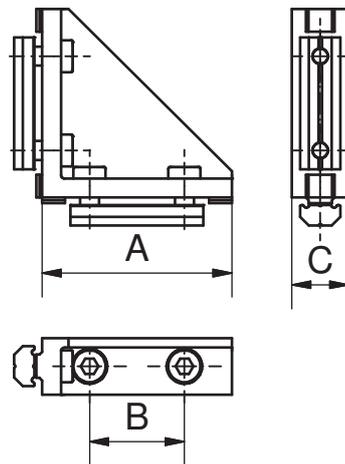
WIV...JU/K



**Remarks:**

**Application: reinforces profile connections in 90°**

- no need for additional works such as drilling or thread cutting
- » different models for X-, JU- and K-System, see product name



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
1-121-66-00	WIV X 25	25		15	Zinc-die-casting	41
1-121-71-00	WIV X 50	50	25	15	Zinc-die-casting	97
1-121-77-00	WIV JU 40	40		40	Zinc-die-casting	120
1-121-82-00	WIV JU 80	80	40	40	Zinc-die-casting	389
1-121-75-00	WIV K 40	40		40	Zinc-die-casting	146
1-121-80-00	WIV K 80	80	40	40	Zinc-die-casting	407

## UVV / Universal Joint Connector, adjustable

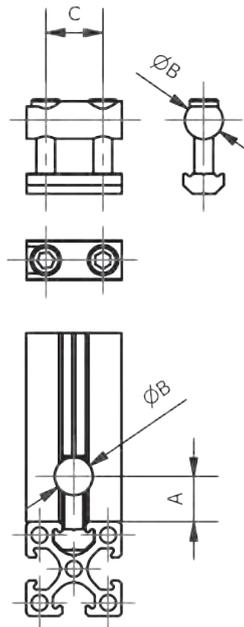
**Remarks:**

**Application: for butt connecting profiles**

- one profile must be drilled
- can be postponed
- see drilling pattern

**Accessories e.g.:**

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	Weight [g]
1-121-15-00-1	UVV X 25	12	10	15	20
1-121-20-00-1	UVV X 50	12	10	40	35

## UVF / Universal Joint Connector, fixed

**Remarks:**

**Application: for connecting profiles**

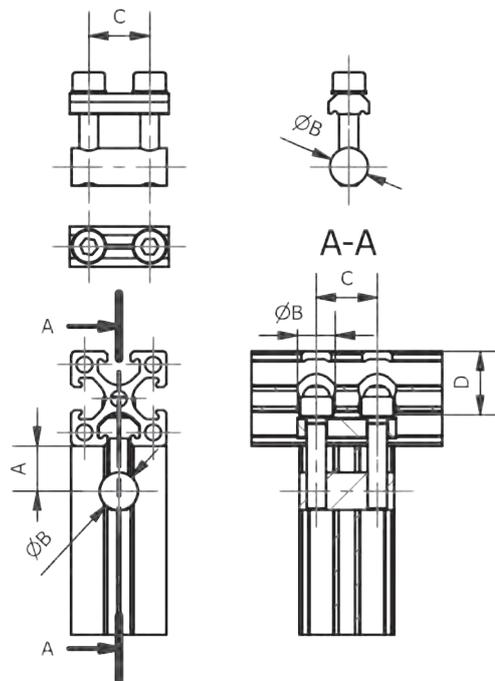
- both profiles must be drilled
- can not be moved anymore
- » see drilling pattern

**Drawing:**

D hole depth

**Accessories e.g.:**

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
1-121-25-00	UVF X 25	12	10	16	21	22
1-121-30-00	UVF X 50	12	10	41	46	26

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**610**  
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Others

# 120 | Profile Connectors

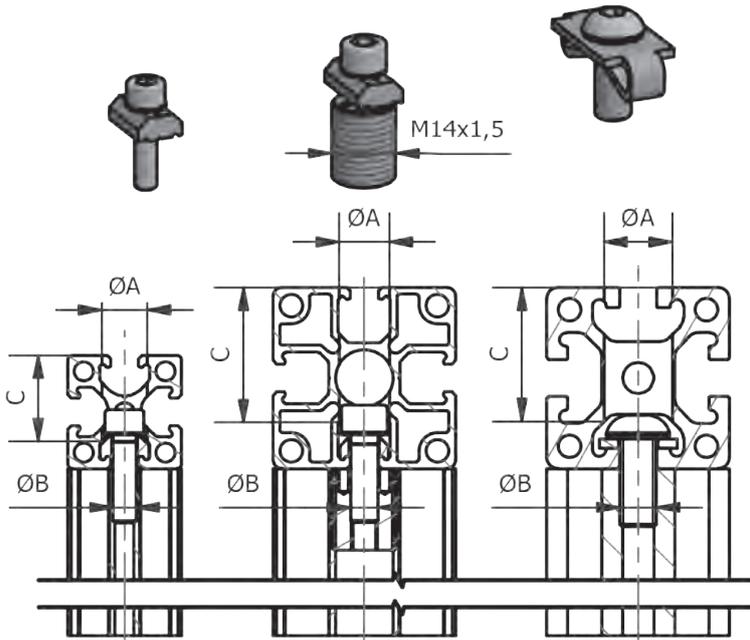
## SV / Butt Connector



SV X 5

SV JU 6

SV K 8



**Remarks:**

**Application: for connecting profiles**

- packing unit: 10 pieces
- » one profile must be drilled
- » in the other profile a thread must be cut frontally
- » see table
- » Butt Connector SV K is non-rotating by form locking

**Drawing:**

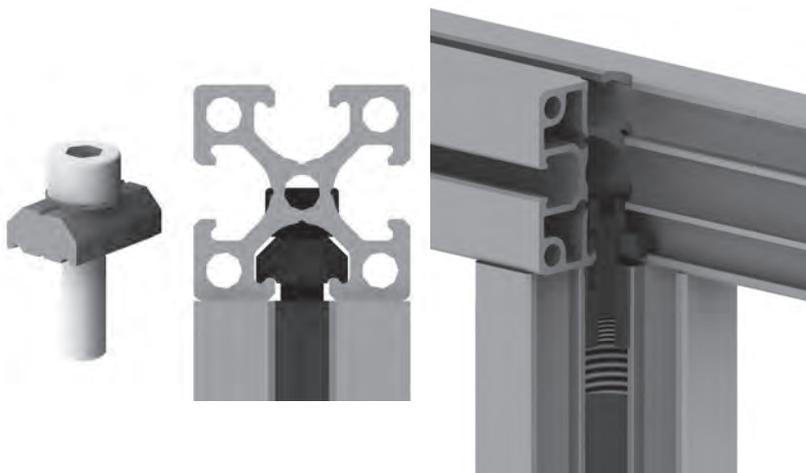
- A bore diameter
- B thread
- C drill depth

**Scope of delivery:**

- SV-JU 6: there is a additional thread insert included

**Accessories e.g.:**

- Step Drill STB
- Tap Drill GB



Part No.	Description	B [mm]	C [mm]	A [mm]	Accessories	Weight [g]	Sold in pc.
1-121-55-00	SV X 5	M 5	21	10	STB M5	9	10
1-121-57-00	SV JU 6	M 6	33	11	STB M6	26	10
1-121-60-00	SV K 8	M 8	33	15	STB M8	20	10

## KV / Clinch Nut

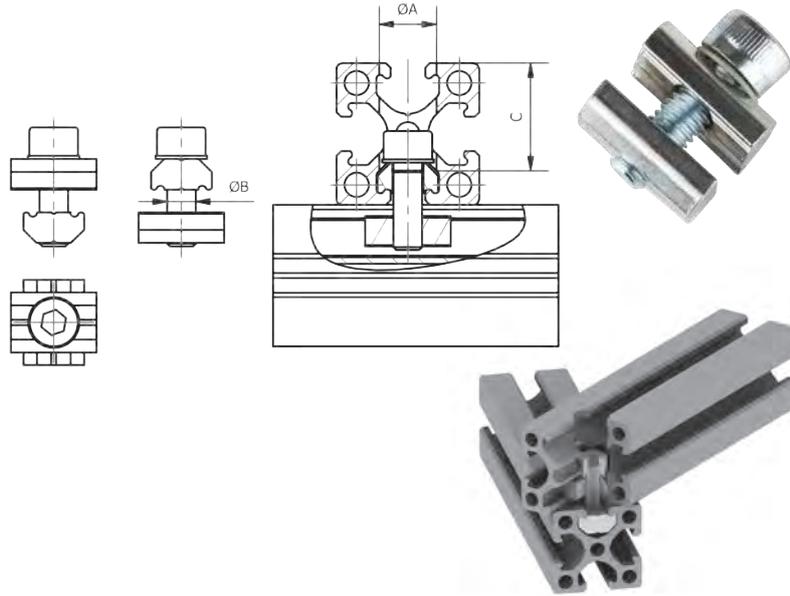
**Remarks:**

**Application: Profiles can be screwed at a 90° angle or at any other angle**

- one profile must be drilled (Ø A, depth C)
- packing unit: 10 pieces
- » KV L 4 S  
"S" = counter sunk screw M4x8 for L-profile 18x10 mm

**Accessories e.g.:**

- Step Drill STB



Part No.	Description	A [mm]	B [mm]	C [mm]	Connection	Weight [g]	Sold in pc.
1-121-35-00	KV L 4 S	8	M 4	10/90°	L18/10 on L or X Profile	6	10
1-121-40-00	KV L 4	8 (STB M4)	M 4	13.5	L 18/18 Profil on L or X Profile	12	10
1-121-45-00	KV X 5	10 (STB M5)	M 5	21	X Profile on X or JU Profile	14	10
1-121-47-00	KV JU 6	11 (STB M6)	M 6	33	JU Profile on JU Profile	17	10
1-121-50-00	KV K 8	15 (STB M8)	M 8	33	K Profile on K-Profile	26	10

## EPL / End Plate for Profiles

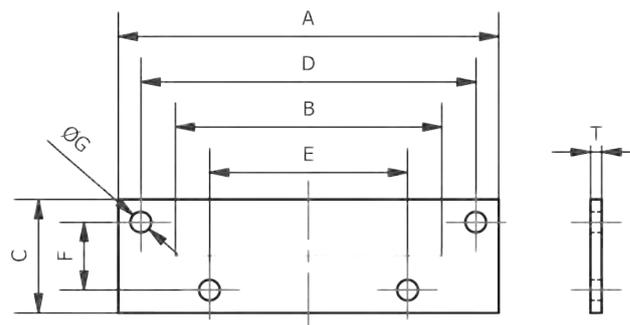
**Remarks:**

**Application: for connecting profiles**

- two frontally aligned profiles can terminate with the EPL in a stable connection
- two threads have to be cut for each profile

**Drawing:**

B profile center distance (suitable for all GPM)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	T [mm]	for profile	compatible with	Material	Weight [g]
1-122-81-00	EPL X 1-25-25	100	70	30	88	52	18	5.5	3	X 25-25	GPM 1 X	Aluminium	22
1-122-83-00	EPL X 1-50-25	95	70	50	70	70	25	5.5	3	X 50-25	GPM 1 X	Aluminium	37
1-122-85-00	EPL X 2-25-25	150	120	30	138	102	18	5.5	3	X 25-25	GPM 2 X	Aluminium	36
1-122-87-00	EPL X 2-50-25	145	120	50	120	120	25	5.5	3	X 50-25	GPM 2 X	Aluminium	57
1-122-89-00	EPL X 3-25-25	230	200	30	218	182	18	5.5	3	X 25-25	GPM 3 X	Aluminium	55
1-122-91-00	EPL X 3-50-25	225	200	50	200	200	25	5.5	3	X 50-25	GPM 3 X	Aluminium	86
<b>New</b> 1-122-92-00	EPL JU 2-40-40	165	120	45	152	88	32	6,6	5	JU 40-40	GPM 2 JU	Aluminium	97
1-122-94-00	EPL JU 3-40-40	245	200	45	232	168	32	6.6	5	JU 40-40	GPM 3 JU	Aluminium	142
1-122-96-00	EPL JU 3-80-40	245	200	85	232	168	72	6.6	5	JU 80-40	GPM 3 JU	Aluminium	271

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Sensors

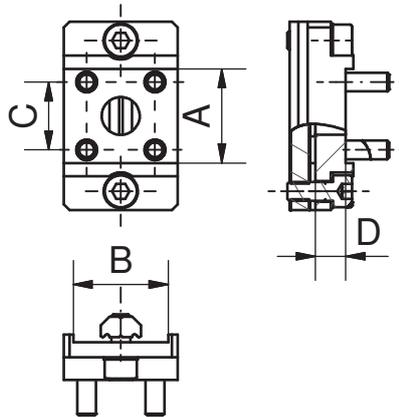
**850**  
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# 120 | Profile Connectors

## SVB / Butt Connector SVB X 25-25



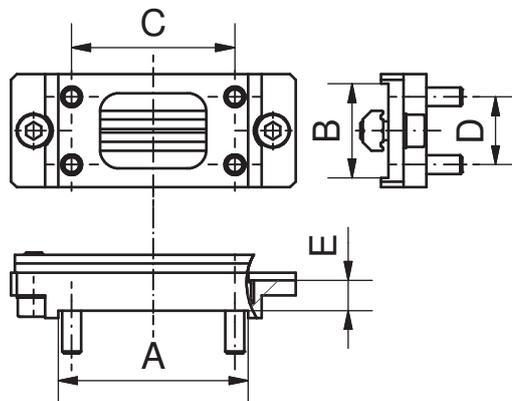
**Remarks:**

**Application: for connecting profiles in 90 °**

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Dimension	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-122-05-00	SVB X 25-25	X 25-25	X25-25 or X50-25	25	25	18	8	Aluminium	61

## SVB / Butt Connector SVB X 25-50-25



**Remarks:**

**Application: for connecting profiles in 90 °**

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

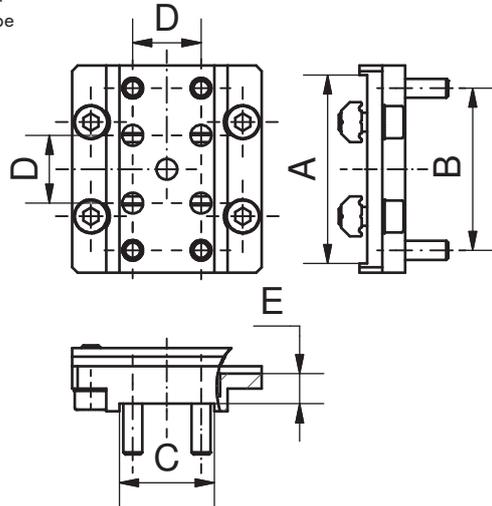
Part No.	Description	Measure A/C/D for profile	Measure B for profile	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-10-00	SVB X 25-50-25	X 50-25	X 25-25 or X 50-25	50	25	43	18	8	Al	76

## SVB / Butt Connector SVB X 50-25-U

**Remarks:**

**Application: for connecting profiles in 90 °**

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples



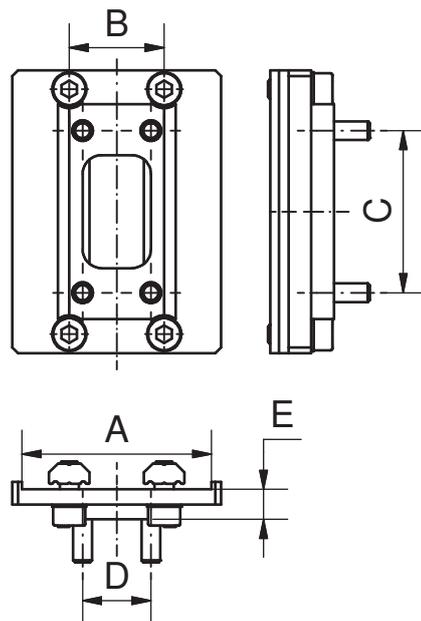
Part No.	Description	Dimension	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-15-00	SVB X 50-25-U	X 50-25	X 25-25	50	43	25	18	8	Aluminium	110

## SVB / Butt Connector SVB X 50-25-50-25

**Remarks:**

**Application: for connecting profiles in 90 °**

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples



Part No.	Description	Dimension	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-20-00	SVB X 50-25-50-25	X 50-25	50	25	43	18	8	Aluminium	131

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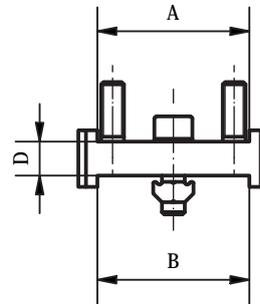
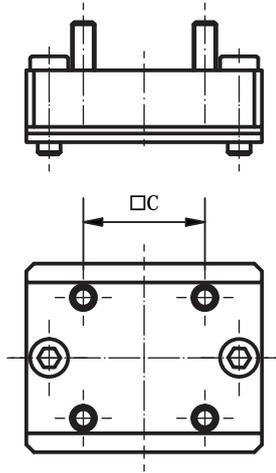
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

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PA-Forming  
Others

# 120 | Profile Connectors

## SVB / Butt Connector SVB JU 40-40



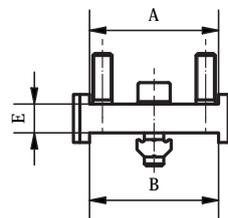
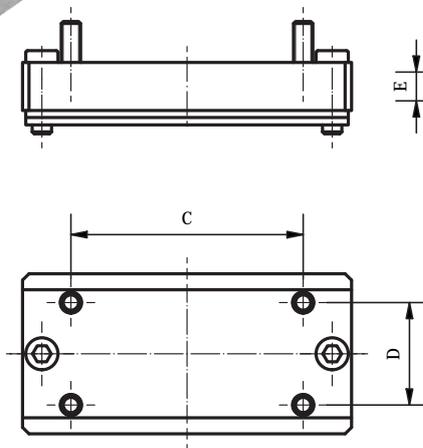
**Remarks:**

**Application: for connecting JU-profiles in 90 °**

- four M5 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Measure C for profile	Maß B für Profil	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-122-21-00	SVB JU 40-40	JU 40x40	JU 40x40 oder JU 80x40	40	40	32	9	Aluminium	135

## SVB / Butt Connector SVB JU 80-40-80-40



**Remarks:**

**Application: for connecting JU-profiles in 90 °**

- four M6 threads have to be cut in the profile
- butt connector is screwed to the front side of the profile to be connected, this unit is screwed into the groove of the other profile and can be adjusted
- » see application examples

Part No.	Description	Measure C/D for profile	Maß B für Profil	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-122-23-00	SVB JU 80-40-80-40	JU 80x40	JU 40x40 oder JU 80x40	40	40	72	32	9	Al	206

## VBG / Straight Support Joint Connector

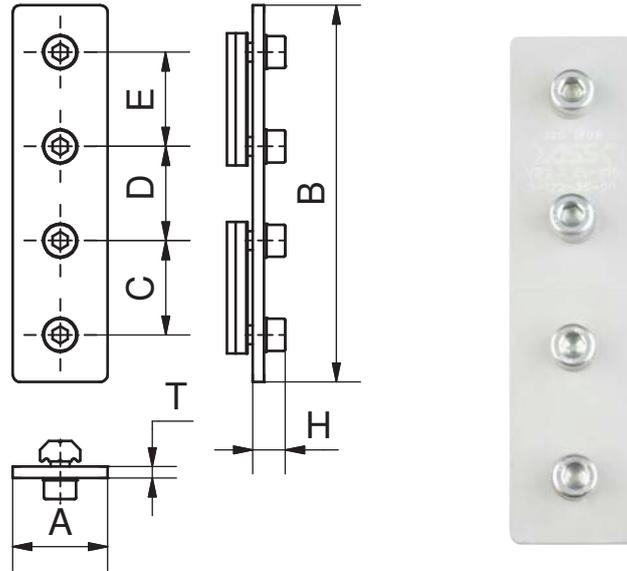
**Remarks:**

**Application: for connecting profiles**

- no drilling or tapping required
- with centered mark for customized separation into two halved VBG, see table

**Scope of delivery:**

- VBG X 25-50 and VBG X 25-75 with 1 channel nut
- other sizes with 2 channel nuts



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	T [mm]	with centering mark	Material	Weight [g]
1-122-25-00	VBG X 25-50	25	50	25			8.6	3		Aluminium	28
1-122-30-00	VBG X 25-75	25	75	25	25		8.6	3		Aluminium	44
1-122-35-00	VBG X 25-100	25	100	25	25	25	8.6	3	x	Aluminium	55
1-122-42-00	VBG JU 40-160	40	160	40	40	40	9.7	3	x	Steel/Zinc ctd.	208
1-122-40-00	VBG K 40-160	40	160	40	40	40	11.8	3	x	Steel/Zinc ctd.	239

## VBL / L-Style Support Joint Connector

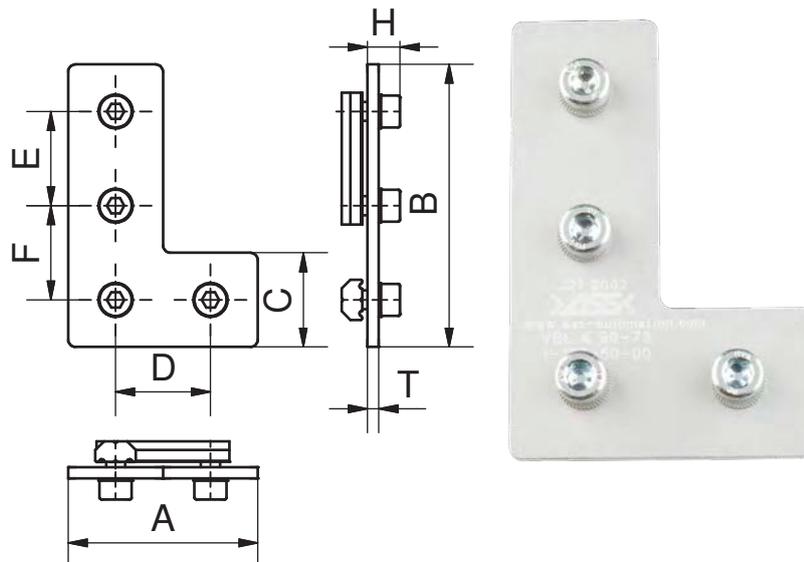
**Remarks:**

**Application: for connecting profiles**

- no drilling or tapping required

**Scope of delivery:**

- 2 channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-45-00	VBL X 50-50	50	50	25	25		25	8.6	3	Aluminium	42
1-122-50-00	VBL X 50-75	50	75	25	25	25	25	8.6	3	Aluminium	56
1-122-57-00	VBL JU 80-120	80	120	40	40	40	40	9.7	3	stainless Steel	205
1-122-55-00	VBL K 80-120	80	120	40	40	40	40	11.8	3	stainless Steel	241

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Needle Gripper

**600**  
Nipper Bodies

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Electrics and Sensors

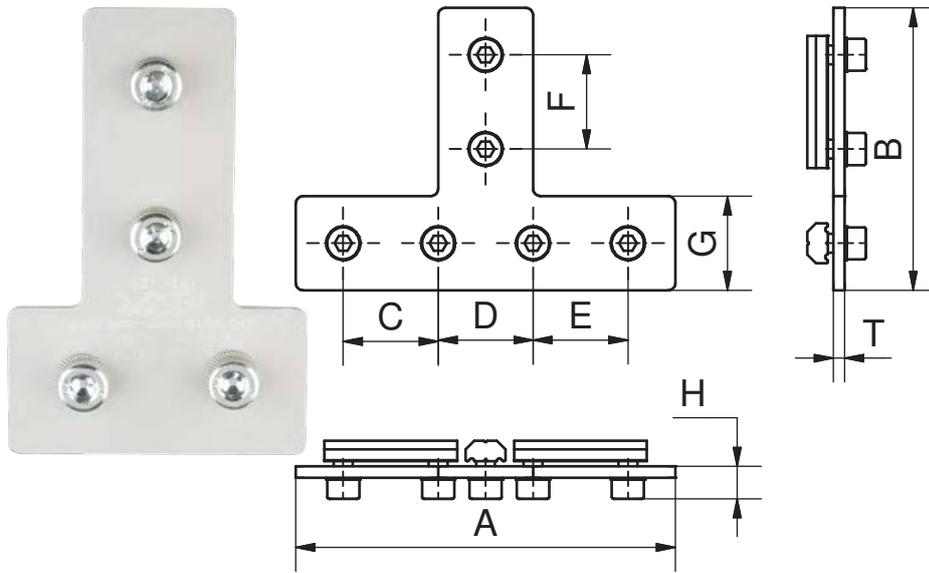
**850**  
Pneumatics

**990**  
Tubular System Micro System

**990**  
PA-Forming Others

# 120 | Profile Connectors

## VBT / T-Style Support Joint Connector



**Remarks:**

**Application: for connecting profiles**

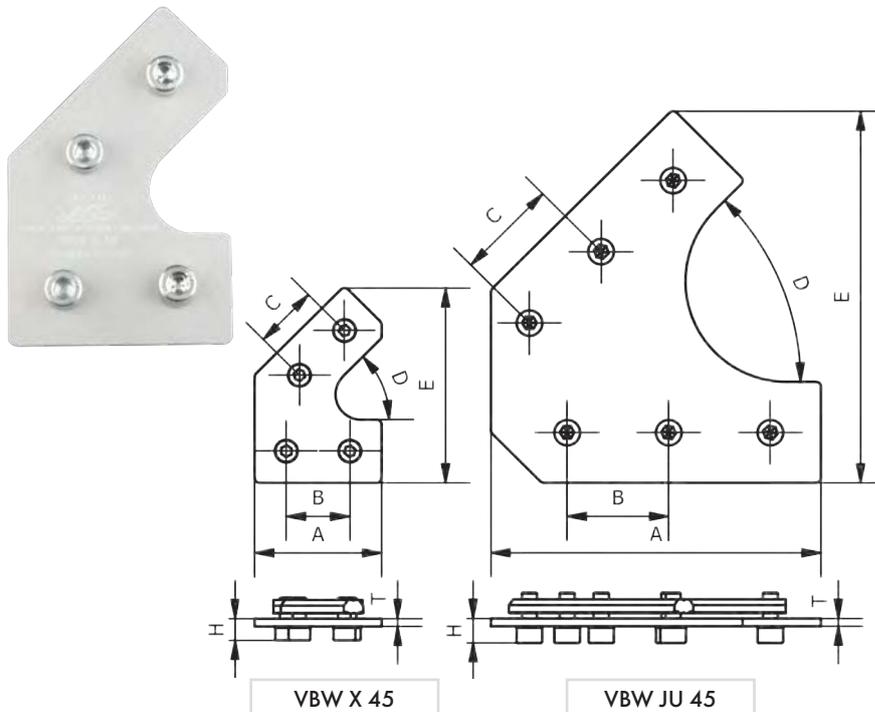
- no drilling or tapping required

**Scope of delivery:**

- 3 channel nuts included

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-60-00	VBT X 50-75	50	75		25	25	25	25	8.6	3	Aluminium	56
1-122-65-00	VBT X 100-75	100	75	25	25	25	25	25	8.6	3	Aluminium	83
1-122-72-00	VBT JU 120-120	120	120	40		40	40	40	9.7	3	Steel/Zinc ctd.	262
1-122-70-00	VBT K 120-120	120	120	40		40	40	40	11.8	3	Steel/Zinc ctd.	313

## VBW 45 / 45 Degree Support Joint Connector



**Remarks:**

**Application: for connecting profiles in 45°**

- no drilling or tapping required
- no miter cut required

**Scope of delivery:**

- 2 channel nuts included

Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-75-00	VBW X 45	50	25	25	45	77	8.6	3	Aluminium	58
1-122-76-00	VBW JU 45	130	40	40	45	147	9.7	3	Steel/Zinc ctd.	363

## VBW 0-90 / Adjustable Support Joint Connector

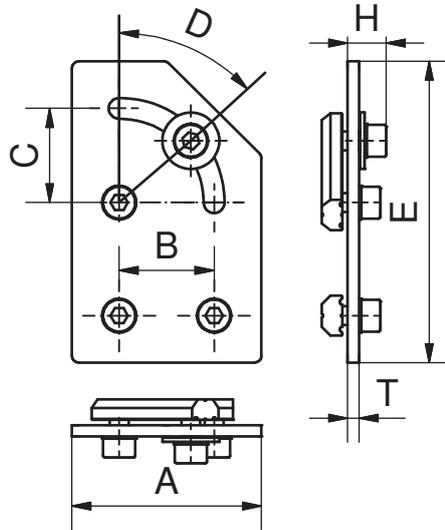
**Remarks:**

**Application: for connecting profiles adjustable in 0-90°**

- angle adjustable from 0-90°
- no drilling or tapping required
- no miter cut required

**Scope of delivery:**

- 2 channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-80-00	VBW X 0-90	50	25	25	0-90	80	10	3	Aluminium	65

## VBW 120 / 120 Degree Support Joint Connector

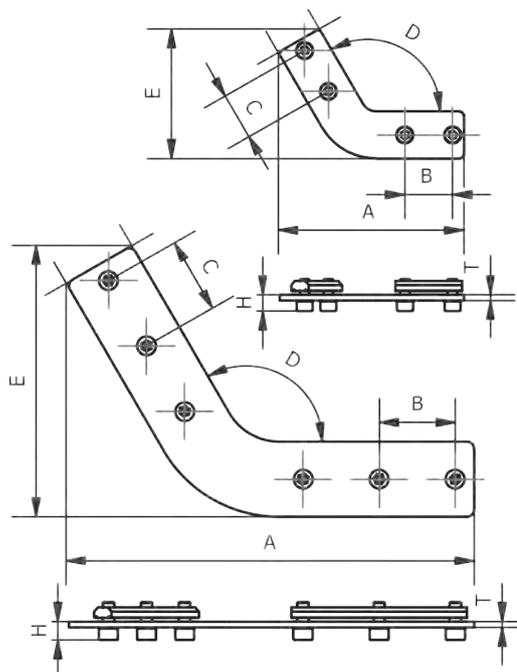
**Remarks:**

**Application: for connecting profiles adjustable in 120°**

- no drilling or tapping required
- no miter cut required

**Scope of delivery:**

- 2 channel nuts included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [°]	E [mm]	H [mm]	T [mm]	Material	Weight [g]
1-122-77-00	VBW X 120	98	25	25	120	69	9	3	Aluminium	57
1-122-78-00	VBW JU 120	215	40	40	120	144	10	3	Stahl	320

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Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Manifold

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

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Pneumatics

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Micro System

**990**  
PA-Forming  
Others

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Pneumatics

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Micro System

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PA-Forming  
Others

# 190 | Accessories-Profile

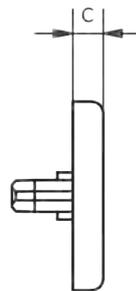
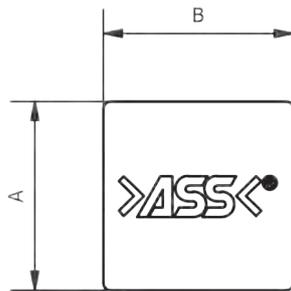
## Application example STB



## Application example ADK



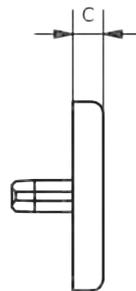
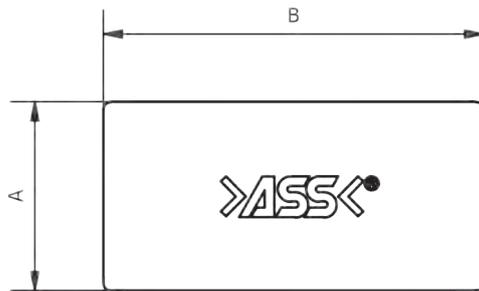
## ADK / Profile End Caps



**Remarks:**

**Application: for closing profile ends**

- Holes for receiving the profile caps should be deburred
- Cover caps are simply opened with a rubber hammer



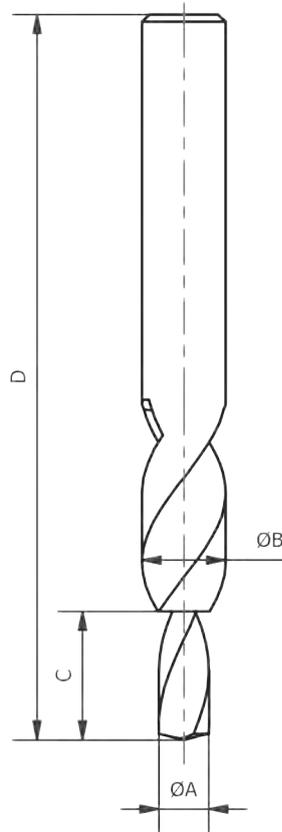
Part No.	Description	for profile	A [mm]	B [mm]	C [mm]	Weight [g]	Material
1-190-20-00	ADK L 18-10	L 18-10	18	10	4	1	ABS
1-190-22-00	ADK L 18-18	L 18-18	18	18	4	2	ABS
1-190-23-00	ADK X 25-10	X 25-10	25	10	4	1	ABS
1-190-24-00	ADK X 25-18	X 25-18	25	18	4	2	ABS
1-190-25-00	ADK X 25-25	X 25-25	25	25	4	2	ABS
1-190-30-00	ADK X 50-25	X 50-25	25	50	4	4	ABS
1-190-37-00	ADK JU 40-40	JU 40-40	40	40	4	5	ABS
1-190-42-00	ADK JU 80-40	JU 80-40	40	80	4	10	ABS
1-190-35-00	ADK 40-40 K	K 40-40	40	40	4	6	ABS
1-190-40-00	ADK 80-40 K	K 80-40	40	80	4	10	ABS
1-190-45-00	ADK 80-80 K	K 80-80	80	80	4	19	ABS

## STB / Step Drill

**Remarks:**

**Application: to screw components directly to profiles**

- for use with e.g.:
  - Universal Connector UVV
  - Universal Joint Connector UVF
  - Cross Connector KV
  - Butt Connector SV



Part No.	Description	for profile	A [mm]	B [mm]	C [mm]	D [mm]
1-190-80-00	STB M 4	L	4.5	8	12	77.5
1-190-82-00	STB M 5	X	5.5	10	15	89.0
1-190-84-00	STB M 6	JU	6.5	11	16.5	95.5
1-190-88-00	STB M 8	K	9	15	21	111.5

## GB / Tap Drill

**Remarks:**

**Application: to screw components directly to profiles**

- hand tap with cut
- cutter M14x1,5 (fine thread)



Part No.	Description	Accessory for
1-190-90-00	GB M14x1.5	SV JU 6

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

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Clamps

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

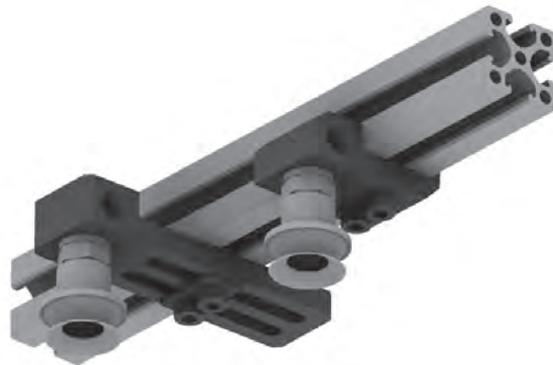
**990**  
PA-Forming  
Others

# 200 | Vacuum Cup-Connectors

## Application example SAS



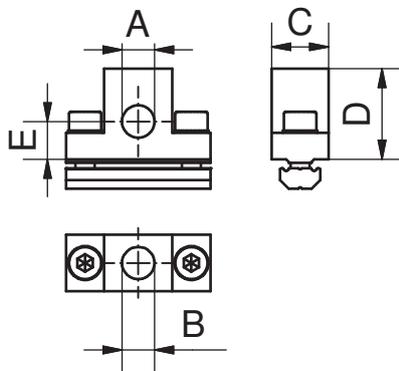
## Application example WSS/WLS



## Application example WSD



## SAS / Vacuum Cup Connector, lateral



**Remarks:**

**Application: to mount vacuum cups directly to the profile**

- suction cup connection on the side
- allows very compact EOAT design

Part No.	Description	A [mm] ["]	B [mm] ["]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-200-70-00	SAS X 1/8-1/8	G1/8	G1/8	15	24	12	Aluminum	40
1-200-75-00	SAS X 1/4-1/8	G1/4	G1/8	15	24	10	Aluminum	39

## WSS / Angle Connector for Vacuum Cups

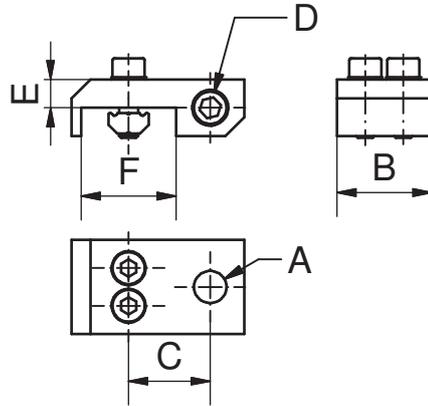
**Remarks:**

**Application: to mount vacuum cups directly to the profile**

- vacuum can be connected on the left or right
- connector is form locking to profiles

**Scope of delivery:**

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm] ["]	E [mm]	F [mm]	Material	Weight [g]
1-200-05-00	WSS L M5-M5	M5	16	13.5	M5	4	18	Aluminum	17
1-200-10-00	WSS X 1/8-1/8	G1/8	25	21.5	G1/8	7.5	25	Aluminum	42
1-200-15-00	WSS X 1/4-1/8	G1/4	25	21.5	G1/8	7.5	25	Aluminum	40
1-200-22-00	WSS JU 1/4-1/8	G1/4	30	30	G1/8	10	40	Aluminum	83

## WLS / Long Angle Connector for Vacuum Cups

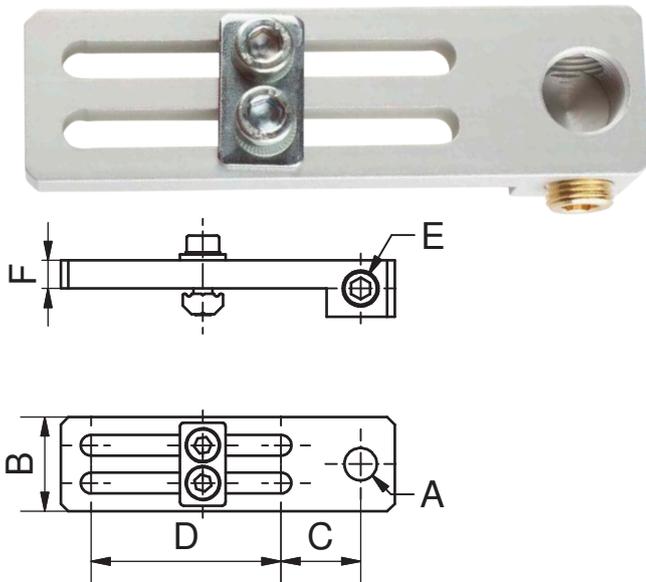
**Remarks:**

**Application: to mount vacuum cups directly to the profile**

- vacuum can be connected on the left or right
- flexible mounting options

**Scope of delivery:**

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm]	Material	Weight [g]
1-200-30-00	WLS L M5-M5-40	M5	16	14	40	M5	4	Aluminum	21
1-200-35-00	WLS X 1/8-1/8-50	G1/8	25	21	50	G1/8	7.5	Aluminum	55
1-200-40-00	WLS X 1/4-1/8-50	G1/4	25	21	50	G1/8	7.5	Aluminum	54
1-200-47-00	WLS JU 1/4-1/8-60	G1/4	30	24	60	G1/8	10	Aluminum	103

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

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Adapters for  
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**300**  
Gripper Arms

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Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

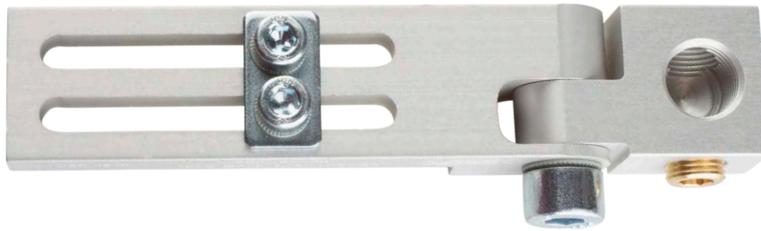
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 200 | Vacuum Cup-Connectors

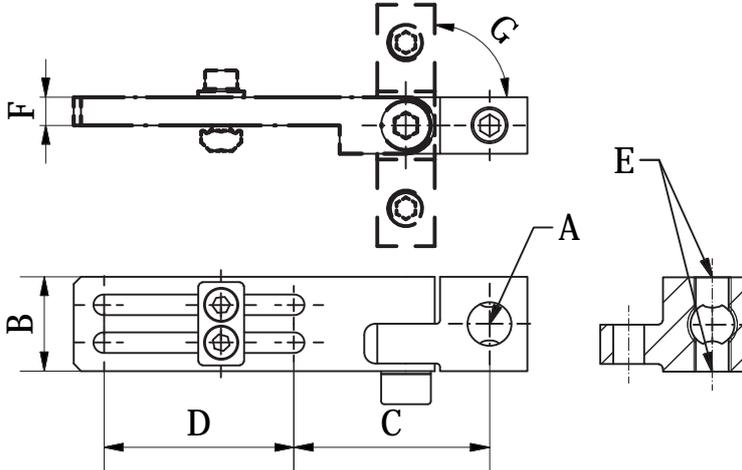
## WLS GA X / Long Angle Clamp for Vacuum Cups with Swivel Head



**Remarks:**

**Application: to mount vacuum cups directly to the profile**

- all degrees of freedom adjustable
- compact design
- stable clamping of the swivel head
- vacuum can be connected on the left or right



Part No.	Description	A ["]	B [mm]	C [mm]	D [mm]	E ["]	F [mm]	G [°]	Weight [g]
1-200-41-00	WLS GA X 1/4-1/8-50	G1/4	25	51,5	50	G1/8	7,5	+/-90	95

## WSD / 360° Swivel Connector for Vacuum Cups

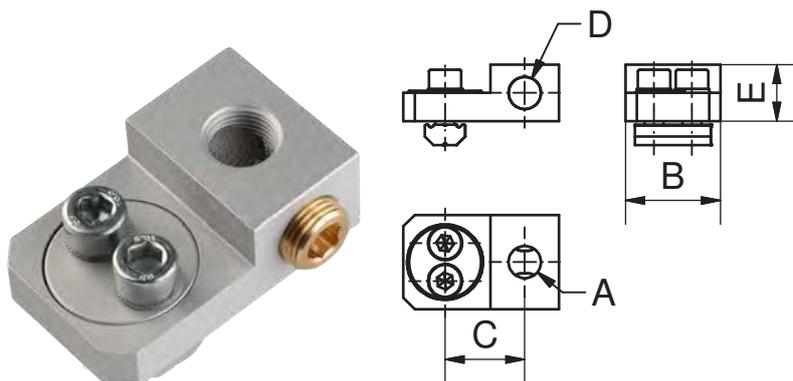
**Remarks:**

**Application: to mount vacuum cups directly to the profile**

- connector is turnable 360°
- vacuum can be connected on the left or right

**Scope of delivery:**

- one sealing plug included



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm] ["]	E [mm]	Material	Weight [g]
1-200-55-00	WSD L M5-M5	M5	16	13	M5	10	Aluminum	18
1-200-60-00	WSD X 1/8-1/8	G1/8	25	21	G1/8	15	Aluminum	38
1-200-65-00	WSD X 1/4-1/8	G1/4	25	21	G1/8	15	Aluminum	37

## Vacuum Cup properties

### Vacuum Cup style recommendation:

- VS 0 oval vacuum cup – for of long parts
- VS 1 with 1 bellow – exact positioning
- VS 2 with 2 bellows – for uneven parts
- VS 3 with 3 bellows – for strong uneven parts

### Formula to calculate the holding force:

Holding force = working area x vacuum pressure

$$F_s [N] = A [cm^2] \times p [N/cm^2]$$

### Remarks:

- various materials in different diameters
- dimensionally stable variants and variants for curved surfaces
- each vacuum cup available with or without adapter
- exchangeable suction cups
- reusable adapters
- adapter with male and female hexagon
- for temperatures from -30° C to 200 °C
- nearly mark free (material HE)
- extra durable with high wear resistance (material PL)
- to clean the cups a commercial soap solution is recommended

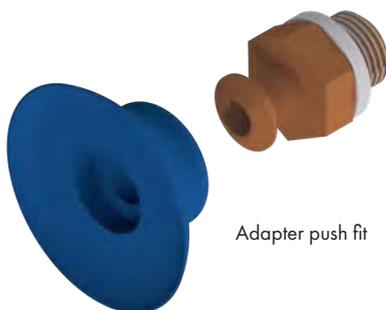
Material Properties	Nitrile (N)	Silicone (S)	High Temperature Polyurethane (HE)	Polyurethane (PU)	Viton (V)
Colour	black	translucence	blue	blue	black
Wear Resistance	• •	•	• • •	• • •	•
Resistance against permanent deformation	• •	• •	• •	•	• • •
Oil resistance	• • • •	•	• • • •	• • •	• • • •
Solvent resistance	• •	• •	• •	•	• • •
General resistance to acids	•	•	•	•	• • •
Tear resistance	• •	•	• •	• • •	• •
Temperature resistance C°	-10° to +70°	-30° to +180°	-10° to +140°	-30° to + 80°	-10° to +200°
Shore Hardness DIN 53505	40 to 90	30 to 85	60 +/-5	55	65 +/-5
Non Marking characteristics	•	• •	• • •	• •	•

• • • • = Excellent • • • = Very Good • • = Good • = Low to satisfactory

### Material Data for PL Polyurethane Long Life Vacuum Cups

Material Properties	Norm	Value	Unit
Temperature		- 30 to +80	°C
Shore Hardness A	DIN 53505	78	
Tensile Strength	DIN 53504	30	N/mm <sup>2</sup>
Tensile Elongation	DIN 53504	630	%
Tear Force	DIN 53515	750	N/cm
Abrasion Loss	DIN 53516	3.5	mm <sup>3</sup>

## Versions-Adapter



# 220 | Vacuum Cups

## VS O / Vacuum Cup - oval, with Adapter



**Remarks:**

**Application: for gripping long articles**

- HE = High Temperature Polyurathane
- suction cups can be changed

**Connection:**

- suction cup/adapter

**Scope of delivery:**

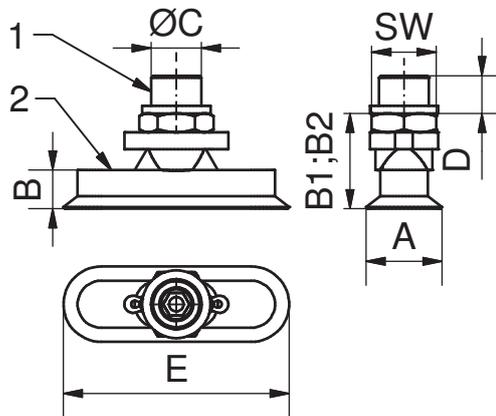
- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Drawing:**

- 1 adapter
- 2 suction cup
- B1 normal position
- B2 compressed position



Part No.	Description	Suction cup	Adapter	Material	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit	Clamp
1-220-05-00	VS O-2x4N3	VN O-2x4N	VSA 5	Nitrile	0.07	0.4	x	
1-220-06-00	VS O-2x4HE3	VN O-2x4HE	VSA 5	HE	0.07	0.4	x	
1-220-10-00	VS O-3.5x7N3	VN O-3.5x7N	VSA 5	Nitrile	0.22	1	x	
1-220-11-00	VS O-3.5x7HE3	VN O-3.5x7HE	VSA 5	HE	0.22	1	x	
1-220-15-00	VS O-5x15N5	VN O-5x15N	VSA 15	Nitrile	0.7	3.1	x	
1-220-16-00	VS O-5x15HE5	VN O-5x15HE	VSA 15	HE	0.7	3.1	x	
1-220-20-00	VS O-6x18N5	VN O-6x18N	VSA 15	Nitrile	1	4.4	x	
1-220-21-00	VS O-6x18HE5	VN O-6x18HE	VSA 15	HE	1	4.4	x	
1-220-25-00	VS O-8x24N8	VN O-8x24N	VSA 20	Nitrile	1.78	8.1		x
1-220-26-00	VS O-8x24HE8	VN O-8x24HE	VSA 20	HE	1.78	8.1		x
1-220-30-00	VS O-10x30N8	VN O-10x30N	VSA 20	Nitrile	2.79	12.3		x
1-220-31-00	VS O-10x30HE8	VN O-10x30HE	VSA 20	HE	2.79	12.3		x
1-220-35-00	VS O-15x45N4	VN O-15x45N	VSA 130	Nitrile	6.27	28.4		x
1-220-36-00	VS O-15x45HE4	VN O-15x45HE	VSA 130	HE	6.27	28.4		x
1-220-40-00	VS O-20x60N4	VN O-20x60N	VSA 130	Nitrile	11.14	50.2		x
1-220-41-00	VS O-20x60HE4	VN O-20x60HE	VSA 130	HE	11.14	50.2		x
1-220-45-00	VS O-25x75N4	VN O-25x75N	VSA 130	Nitrile	17.41	78.3		x
1-220-46-00	VS O-25x75HE4	VN O-25x75HE	VSA 130	HE	17.41	78.3		x
1-220-50-00	VS O-30x90N4	VN O-30x90N	VSA 130	Nitrile	25.07	112.9		x

## VS O / Vacuum Cup - oval, with Adapter

Part No.	Description	A [mm]	E [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	SW [mm]	D [mm]	Weight [g]
1-220-05-00	VS O-2x4N3	2	4	6	7.8	7.5	M3	5	3	<1
1-220-06-00	VS O-2x4HE3	2	4	6	7.8	7.5	M3	5	3	3
1-220-10-00	VS O-3.5x7N3	3.5	7	6	8	7.5	M3	5	3	<1
1-220-11-00	VS O-3.5x7HE3	3.5	7	6	8	7.5	M3	5	3	<1
1-220-15-00	VS O-5x15N5	5	15	12	17	16.5	M5	8	5	2
1-220-16-00	VS O-5x15HE5	5	15	11	17	16.5	M5	8	5	2
1-220-20-00	VS O-6x18N5	6	18	12	17	16.5	M5	8	5	2
1-220-21-00	VS O-6x18HE5	6	18	11	17	16.5	M5	8	5	2
1-220-25-00	VS O-8x24N8	8	24	12	17	16.5	G1/8"	14	8	13
1-220-26-00	VS O-8x24HE8	8	24	13	17	16.5	G1/8"	14	8	13
1-220-30-00	VS O-10x30N8	10	30	12	17	16.5	G1/8"	14	8	13
1-220-31-00	VS O-10x30HE8	10	30	12	17	16.5	G1/8"	14	8	14
1-220-35-00	VS O-15x45N4	15	45	18	26	25	G1/4"	17	10	29
1-220-36-00	VS O-15x45HE4	15	45	20	26	24	G1/4"	17	10	29
1-220-40-00	VS O-20x60N4	20	60	21	26	25	G1/4"	17	10	32
1-220-41-00	VS O-20x60HE4	20	60	20	26	24	G1/4"	17	10	33
1-220-45-00	VS O-25x75N4	25	75	21	26	25	G1/4"	17	10	15
1-220-46-00	VS O-25x75HE4	25	75	21	26	24	G1/4"	17	10	41
1-220-50-00	VS O-30x90N4	30	90	21	26	25	G1/4"	17	10	49

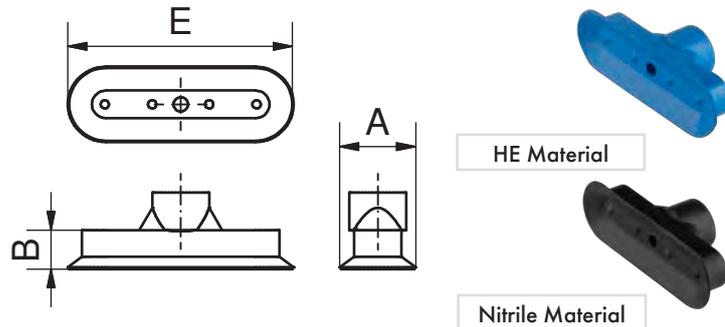
## VN O / Suction Cup - oval, without Adapter

### Remarks:

- with crimp connector
- for gripping long articles
- suction cup can be mounted on existing vacuum cups VS O or with adapters
- HE = High Temperature Polyurathane

### Accessories e.g.:

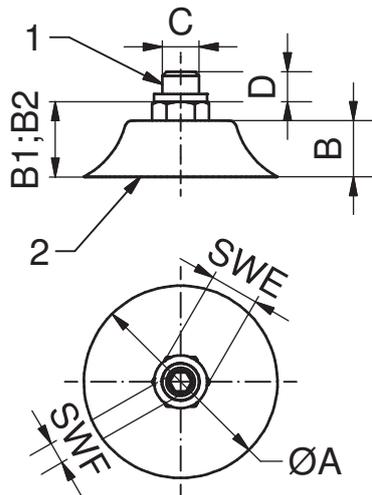
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	E [mm]	B [mm]	Weight [g]
1-220-05-01	VN O-2x4N	VSA 5	Nitrile	2	4	6	<1
1-220-06-01	VN O-2x4HE	VSA 5	HE	2	4	6	<1
1-220-10-01	VN O-3.5x7N	VSA 5	Nitrile	3.5	7	6	<1
1-220-11-01	VN O-3.5x7HE	VSA 5	HE	3.5	7	6	<1
1-220-15-01	VN O-5x15N	VSA 15	Nitrile	5	15	12	<1
1-220-16-01	VN O-5x15HE	VSA 15	HE	5	15	12	<1
1-220-20-01	VN O-6x18N	VSA 15	Nitrile	6	18	12	1
1-220-21-01	VN O-6x18HE	VSA 15	HE	6	18	12	1
1-220-25-01	VN O-8x24N	VSA 20	Nitrile	8	24	12	1
1-220-26-01	VN O-8x24HE	VSA 20	HE	8	24	12	1
1-220-30-01	VN O-10x30N	VSA 20	Nitrile	10	30	12	1
1-220-31-01	VN O-10x30HE	VSA 20	HE	10	30	12	1
1-220-35-01	VN O-15x45N	VSA 130	Nitrile	15	45	18	4
1-220-36-01	VN O-15x45HE	VSA 130	HE	15	45	21	4
1-220-40-01	VN O-20x60N	VSA 130	Nitrile	20	60	21	7
1-220-41-01	VN O-20x60HE	VSA 130	HE	20	60	21	7
1-220-45-01	VN O-25x75N	VSA 130	Nitrile	25	75	21	15
1-220-46-01	VN O-25x75HE	VSA 130	HE	25	75	21	16
1-220-50-01	VN O-30x90N	VSA 130	Nitrile	30	90	21	23

# 220 | Vacuum Cups

## VS 1 / Vacuum Cup - 1 Bellow, Adapter



**Remarks:**

**Application: for gripping even articles**

- exact positioning
- suction cup with adapter
- suction cups can be changed
- HE = High Temperature Polyurathane

**Connection:**

- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter
1-221-02-12	VS 1-2-N5	VN 1-2-N	VSA 10
1-221-02-22	VS 1-2-S5	VN 1-2-S	VSA 10
1-221-02-32	VS 1-2-P5	VN 1-2-P	VSA 10
1-221-03-12	VS 1-3.5-N5	VN 1-3.5-N	VSA 10
1-221-03-22	VS 1-3.5-S5	VN 1-3.5-S	VSA 10
1-221-03-32	VS 1-3.5-P5	VN 1-3.5-P	VSA 10
1-221-05-12	VS 1-5-N5	VN 1-5-N	VSA 30
1-221-05-22	VS 1-5-S5	VN 1-5-S	VSA 30
1-221-05-32	VS 1-5-P5	VN 1-5-P	VSA 30
1-221-05-82	VS 1-5-HE5	VN 1-5-HE	VSA 30
1-221-08-12	VS 1-8-N5	VN 1-8-N	VSA 30
1-221-08-22	VS 1-8-S5	VN 1-8-S	VSA 30
1-221-08-32	VS 1-8-P5	VN 1-8-P	VSA 30
1-221-08-82	VS 1-8-HE5	VN 1-8-HE	VSA 30
1-221-08-42	VS 1-8-V5	VN 1-8-V	VSA 30
1-221-10-12	VS 1-10-N5	VN 1-10-N	VSA 30
1-221-10-22	VS 1-10-S5	VN 1-10-S	VSA 30
1-221-10-32	VS 1-10-P5	VN 1-10-P	VSA 30
1-221-10-82	VS 1-10-HE5	VN 1-10-HE	VSA 30
1-221-10-42	VS 1-10-V5	VN 1-10-V	VSA 30
1-221-15-12	VS 1-15-N5	VN 1-15-N	VSA 30
1-221-15-22	VS 1-15-S5	VN 1-15-S	VSA 30
1-221-15-32	VS 1-15-P5	VN 1-15-P	VSA 30
1-221-15-82	VS 1-15-HE5	VN 1-15-HE	VSA 30
1-221-20-13	VS 1-20-N8	VN 1-20-N	VSA 50
1-221-20-23	VS 1-20-S8	VN 1-20-S	VSA 50
1-221-20-33	VS 1-20-P8	VN 1-20-P	VSA 50
1-221-20-83	VS 1-20-HE8	VN 1-20-HE	VSA 50
1-221-20-43	VS 1-20-V8	VN 1-20-V	VSA 50
1-221-25-13	VS 1-25-N8	VN 1-25-N	VSA 60
1-221-25-23	VS 1-25-S8	VN 1-25-S	VSA 60
1-221-25-33	VS 1-25-P8	VN 1-25-P8	VSA 60
1-221-25-83	VS 1-25-HE8	VN 1-25-HE	VSA 60
1-221-25-43	VS 1-25-V8	VN 1-25-V	VSA 60
1-221-30-13	VS 1-30-N8	VN 1-30-N	VSA 60
1-221-30-23	VS 1-30-S8	VN 1-30-S	VSA 60
1-221-30-33	VS 1-30-P8	VN 1-30-P	VSA 60
1-221-30-83	VS 1-30-HE8	VN 1-30-HE	VSA 60
1-221-30-43	VS 1-30-V8	VN 1-30-V	VSA 60
1-221-40-13	VS 1-40-N8	VN 1-40-N	VSA 60
1-221-40-23	VS 1-40-S8	VN 1-40-S	VSA 60
1-221-40-33	VS 1-40-P8	VN 1-40-P	VSA 60
1-221-40-83	VS 1-40-HE8	VN 1-40-HE	VSA 60
1-221-40-43	VS 1-40-V8	VN 1-40-V	VSA 60
1-221-50-13	VS 1-50-N8	VN 1-50-N	VSA 80
1-221-50-23	VS 1-50-S8	VN 1-50-S	VSA 80
1-221-50-33	VS 1-50-P8	VN 1-50-P	VSA 80
1-221-50-83	VS 1-50-HE8	VN 1-50-HE	VSA 80
1-221-50-43	VS 1-50-V8	VN 1-50-V	VSA 80
1-221-60-14	VS 1-60-N4	VN 1-60-N	VSA 110
1-221-60-24	VS 1-60-S4	VN 1-60-S	VSA 110
1-221-60-34	VS 1-60-P4	VN 1-60-P	VSA 110
1-221-60-84	VS 1-60-HE4	VN 1-60-HE	VSA 110
1-221-80-14	VS 1-80-N4	VN 1-80-N	VSA 110
1-221-80-24	VS 1-80-S4	VN 1-80-S	VSA 110
1-221-80-34	VS 1-80-P4	VN 1-80-P	VSA 110
1-221-80-84	VS 1-80-HE4	VN 1-80-HE	VSA 110
1-221-95-14	VS 1-95-N4	VN 1-95-N	VSA 110
1-221-95-24	VS 1-95-S4	VN 1-95-S	VSA 110
1-221-95-34	VS 1-95-P4	VN 1-95-P	VSA 110

Material	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit	Tapped	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] [°]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
Nitrile	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Silicone	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Polyurethane	0.02	0.1	x		2	4	9	8.5	M5	5	7		2
Nitrile	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Silicone	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Polyurethane	0.07	0.4	x		3.5	4	9	8.5	M5	5	7		2
Nitrile	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Silicone	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Polyurethane	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
HE	0.13	0.7	x		5	6.5	11.5	11	M5	5	7	2	3
Nitrile	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Silicone	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Polyurethane	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
HE	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Viton	0.38	2.3	x		8	7	12	11	M5	5	7	2	3
Nitrile	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Silicone	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Polyurethane	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
HE	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Viton	0.67	4	x		10	7.5	12.5	11	M5	5	7	2	3
Nitrile	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Silicone	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Polyurethane	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
HE	1.54	9.1	x		15	8	13	11.5	M5	5	7	2	3
Nitrile	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Silicone	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Polyurethane	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
HE	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	12
Viton	2.63	15.5	x		20	10	15	13	G1/8	5	13	3	13
Nitrile	4.52	26.6	x		25	14	18	16	G1/8	8	13	4	13
Silicone	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	12
Polyurethane	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	13
HE	4.52	26.6	x		25	14	18	16	G1/8	8	13	4	13
Viton	4.52	26.6	x		25	14	19	16.5	G1/8	8	13	4	14
Nitrile	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Silicone	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Polyurethane	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	14
HE	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	13
Viton	5.73	33.7	x		30	12	17	15.5	G1/8	8	13	4	16
Nitrile	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Silicone	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Polyurethane	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	18
HE	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	17
Viton	9.76	57.4	x		40	14	18	15.5	G1/8	8	13	4	22
Nitrile	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	21
Silicone	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	21
Polyurethane	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	23
HE	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	22
Viton	15.55	91.5	x		50	15	20	16.5	G1/8	8	13	5	29
Nitrile	21.24	125		x	60	16	23	18	G1/4	10	17	5	50
Silicone	21.24	125		x	60	16	23	18	G1/4	10	17	5	48
Polyurethane	21.24	125		x	60	16	23	18	G1/8	10	17	5	49
HE	21.24	125		x	60	16	23	18	G1/8	10	17	5	51
Nitrile	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	78
Silicone	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	75
Polyurethane	17.7	260		x	80	18	25.5	20	G1/4	10	17	5	76
HE	44.18	260		x	80	18	25.5	20	G1/4	10	17	5	78
Nitrile	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	118
Silicone	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	116
Polyurethane	59.45	349.9		x	95	19	26.5	21.5	G1/4	10	17	5	116

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 220 | Vacuum Cups

## VN 1 / Suction Cup - 1 Bellow, without Adapter

HE Material



Nitrile Material



Silicone Material



Polyurethane Material



Viton Material



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-221-02-10	VN 1-2-N	VSA 10	Nitrile	2	4	<1
1-221-02-20	VN 1-2-S	VSA 10	Silicone	2	4	<1
1-221-02-30	VN 1-2-P	VSA 10	PU	2	4	<1
1-221-03-10	VN 1-3.5-N	VSA 10	Nitrile	3.5	4	<1
1-221-03-20	VN 1-3.5-S	VSA 10	Silicone	3.5	4	<1
1-221-03-30	VN 1-3.5-P	VSA 10	PU	3.5	4	<1
1-221-05-10	VN 1-5-N	VSA 30	Nitrile	5	6.5	<1
1-221-05-20	VN 1-5-S	VSA 30	Silicone	5	6.5	<1
1-221-05-80	VN 1-5-HE	VSA 30	HE	5	6.5	<1
1-221-05-30	VN 1-5-P	VSA 30	PU	5	6.5	<1
1-221-08-10	VN 1-8-N	VSA 30	Nitrile	8	7	<1
1-221-08-20	VN 1-8-S	VSA 30	Silicone	8	7	<1
1-221-08-80	VN 1-8-HE	VSA 30	HE	8	7	<1
1-221-08-40	VN 1-8-V	VSA 30	Viton	8	7	<1
1-221-08-30	VN 1-8-P	VSA 30	PU	8	7	<1
1-221-10-10	VN 1-10-N	VSA 30	Nitrile	10	7.5	<1
1-221-10-20	VN 1-10-S	VSA 30	Silicone	10	7.5	<1
1-221-10-80	VN 1-10-HE	VSA 30	HE	10	7.5	<1
1-221-10-40	VN 1-10-V	VSA 30	Viton	10	7.5	<1
1-221-10-30	VN 1-10-P	VSA 30	PU	10	7.5	<1
1-221-15-10	VN 1-15-N	VSA 30	Nitrile	15	8	<1
1-221-15-20	VN 1-15-S	VSA 30	Silicone	15	8	<1
1-221-15-80	VN 1-15-HE	VSA 30	HE	15	8	1
1-221-15-30	VN 1-15-P	VSA 30	PU	15	8	<1
1-221-20-10	VN 1-20-N	VSA 50	Nitrile	20	10	1
1-221-20-20	VN 1-20-S	VSA 50	Silicone	20	10	1
1-221-20-80	VN 1-20-HE	VSA 50	HE	20	10	1
1-221-20-40	VN 1-20-V	VSA 50	Viton	20	10	2
1-221-20-30	VN 1-20-P	VSA 50	PU	20	10	2
1-221-25-10	VN 1-25-N	VSA 60	Nitrile	25	14	3

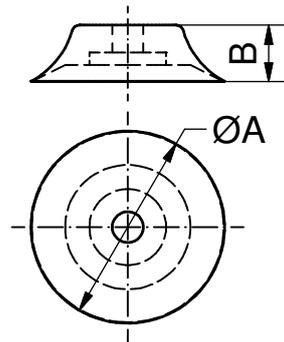
## VN 1 / Suction Cup - 1 Bellow, without Adapter (Continuation)

### Remarks:

- for gripping even articles
- suction cup can be mounted on existing vacuum cups VS 1 or with adapters
- HE = High Temperature Polyurathane
- PU = Polyurethane
- \* = M10x1,25 connection

### Accessories e.g.:

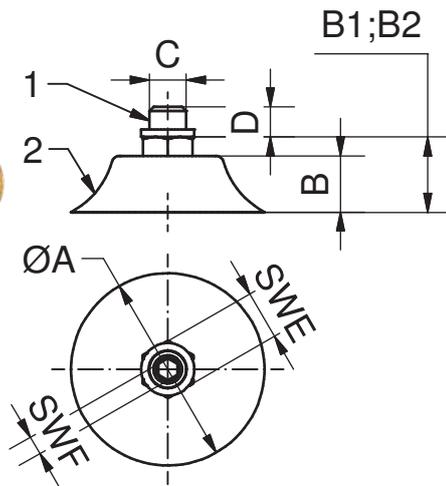
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-221-25-20	VN 1-25-S	VSA 60	Silicone	25	14	2
1-221-25-80	VN 1-25-HE	VSA 60	HE	25	14	3
1-221-25-40	VN 1-25-V	VSA 60	Viton	25	14	4
1-221-25-30	VN 1-25-P	VSA 60	PU	25	14	3
1-221-30-10	VN 1-30-N	VSA 60	Nitrile	30	12	3
1-221-30-20	VN 1-30-S	VSA 60	Silicone	30	12	3
1-221-30-80	VN 1-30-HE	VSA 60	HE	30	12	3
1-221-30-40	VN 1-30-V	VSA 60	Viton	30	12	5
1-221-30-30	VN 1-30-P	VSA 60	PU	30	12	4
1-221-40-10	VN 1-40-N	VSA 60	Nitrile	40	14	7
1-221-40-20	VN 1-40-S	VSA 60	Silicone	40	14	7
1-221-40-80	VN 1-40-HE	VSA 60	HE	40	14	7
1-221-40-40	VN 1-40-V	VSA 60	Viton	40	14	12
1-221-40-30	VN 1-40-P	VSA 60	PU	40	14	8
1-221-50-10	VN 1-50-N	VSA 80	Nitrile	50	15	10
1-221-50-20	VN 1-50-S	VSA 80	Silicone	50	15	10
1-221-50-80	VN 1-50-HE	VSA 80	HE	50	15	11
1-221-50-40	VN 1-50-V	VSA 80	Viton	50	15	18
1-221-50-30	VN 1-50-P	VSA 80	PU	50	15	12
1-221-60-10*	VN 1-60-N	VSA 110	Nitrile	60	16	25
1-221-60-20*	VN 1-60-S	VSA 110	Silicone	60	16	23
1-221-60-80*	VN 1-60-HE	VSA 110	HE	60	16	24
1-221-60-30*	VN 1-60-P	VSA 110	PU	60	16	24
1-221-80-10*	VN 1-80-N	VSA 110	Nitrile	80	18	54
1-221-80-20*	VN 1-80-S	VSA 110	Silicone	80	18	50
1-221-80-80*	VN 1-80-HE	VSA 110	HE	80	20	52
1-221-80-30*	VN 1-80-P	VSA 110	PU	80	18	51
1-221-95-10*	VN 1-95-N	VSA 110	Nitrile	95	19	93
1-221-95-20*	VN 1-95-S	VSA 110	Silicone	95	19	88
1-221-95-30*	VN 1-95-P	VSA 110	PU	95	19	90

# 220 | Vacuum Cups

## VS 1 PL / Vacuum Cup - 1 Bellow, Longlife, with Adapter



**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

**Data**

Part No.	Description	Suction cup	Adapter	Material	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit
1-221-20-63	VS 1-20-PL8	VN 1-20-PL	VSA 50	PL	2.6	15.5	x
1-221-30-63	VS 1-30-PL8	VN 1-30-PL	VSA 60	PL	5.7	33.7	x
1-221-40-63	VS 1-40-PL8	VN 1-40-PL	VSA 60	PL	9.8	57.4	x
1-221-50-63	VS 1-50-PL8	VN 1-50-PL	VSA 80	PL	15.6	91.5	x

**Dimensions**

Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-221-20-63	VS 1-20-PL8	20	10	14	12	G1/8"	5	13	3	11
1-221-30-63	VS 1-30-PL8	30	12	17	14	G1/8"	8	13	4	12
1-221-40-63	VS 1-40-PL8	40	14	18	15	G1/8"	8	13	4	16
1-221-50-63	VS 1-50-PL8	50	15	20	16	G1/8"	8	13	5	20

**Remarks:**

**Application: for gripping even articles**

- extra durable with high wear resistance
- PL = Polyurethane Long Life
- exact positioning
- suction cup with adapter
- suction cups can be changed

**Connection:**

- suction cup/adapter

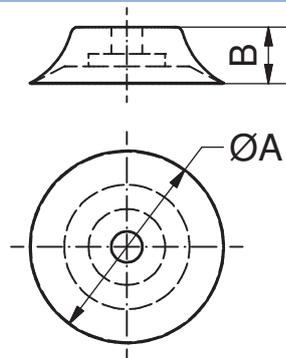
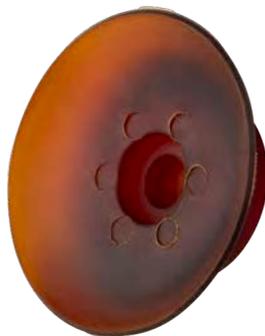
**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

## VN 1 PL / Suction Cup - 1 Bellow, Longlife, without Adapter



**Remarks:**

- for gripping even articles
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- exact positioning
- suction cup can be mounted on existing vacuum cups VS 1 PL or with adapters

**Accessories e.g.:**

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]
1-221-20-60	VN 1-20-PL	VSA 50	PL	20	10
1-221-30-60	VN 1-30-PL	VSA 60	PL	30	12
1-221-40-60	VN 1-40-PL	VSA 60	PL	40	14
1-221-50-60	VN 1-50-PL	VSA 80	PL	50	15

## VS 2 / Vacuum Cup - 2 Bellows, with Adapter

**Remarks:**

**Application: for gripping uneven, curved articles**

- 2 bellows to compensate for unevenness
- suction cup with adapter
- suction cups can be changed
- HE = High Temperature Polyurathane

**Connection:**

- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Drawing:**

- 1 adapter
- 2 suction cup
- 3 sealing ring
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

HE Material



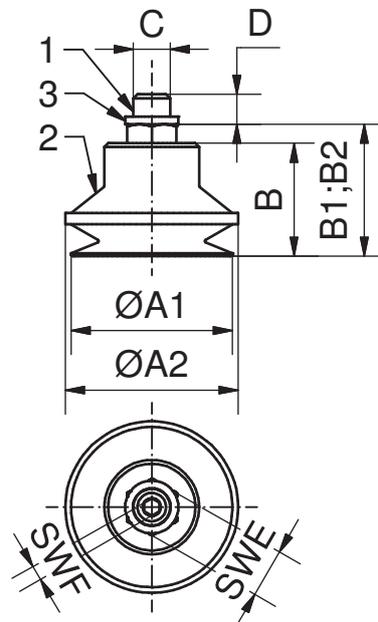
Nitrile Material



Polyurethane Material



Silicone Material



Dimensions and technical data on the following page

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

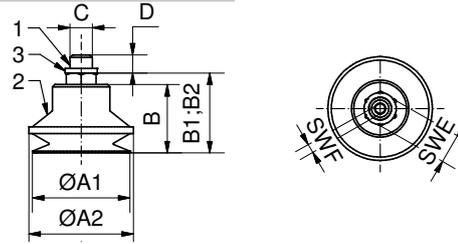
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 220 | Vacuum Cups

## VS 2 / Vacuum Cup - 2 Bellows, with Adapter (Continuation)



### Data

Part No.	Description	Suction cup	Adapter	Material	Working area [mm]	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit	Tapped
1-222-04-88	VS 2-4-HE3	VN 2-4-HE	VSA 5	HE	2.5	0.05	0.3	x	
1-222-04-18	VS 2-4-N3	VN 2-4-N	VSA 5	Nitril	2.5	0.05	0.3	x	
1-222-04-28	VS 2-4-S3	VN 2-4-S	VSA 5	Silikon	2.5	0.05	0.3	x	
1-222-06-88	VS 2-6-HE3	VN 2-6-HE	VSA 4	HE	3	0.07	0.4	x	
1-222-06-18	VS 2-6-N3	VN 2-6-N	VSA 4	Nitril	3	0.07	0.4	x	
1-222-06-28	VS 2-6-S3	VN 2-6-S	VSA 4	Silikon	3	0.07	0.4	x	
1-222-11-88	VS 2-11-HE3	VN 2-11-HE	VSA 16	HE	5.1	0.2	1.2	x	
1-222-11-18	VS 2-11-N3	VN 2-11-N	VSA 16	Nitril	5.1	0.2	1.2	x	
1-222-11-28	VS 2-11-S3	VN 2-11-S	VSA 16	Silikon	5.1	0.2	1.2	x	
1-222-10-12	VS 2-10-N5	VN 2-10-N	VSA 30	Nitrile	5.2	0.16	0.9	x	
1-222-10-22	VS 2-10-S5	VN 2-10-S	VSA 30	Silicone	5.2	0.16	0.9	x	
1-222-10-32	VS 2-10-P5	VN 2-10-P	VSA 30	Polyurethane	5.2	0.16	0.9	x	
1-222-10-82-1	VS 2-10-HE5	VN 2-10 HE	VSA 30	HE	5.2	0.16	0.9	x	
1-222-15-12	VS 2-15-N5	VN 2-15-N	VSA 30	Nitrile	7.5	0.4	2.3	x	
1-222-15-22	VS 2-15-S5	VN 2-15-S	VSA 30	Silicone	7.5	0.4	2.3	x	
1-222-15-32	VS 2-15-P5	VN 2-15-P	VSA 30	Polyurethane	7.5	0.4	2.3	x	
1-222-15-82-1	VS 2-15-HE5	VN 2-15 HE	VSA 40	HE	7.9	0.49	2.3	x	
1-222-15-83-1	VS 2-15-HE8	VN 2-15HE	VSA 70	HE	7.9	0.49	2.3	x	
1-222-20-13	VS 2-20-N8	VN 2-20-N	VSA 60	Nitrile	11	0.82	4.8	x	
1-222-20-22	VS 2-20-S5	VN 2-20-S	VSA 45	Silicone	11	0.82	4.8	x	
1-222-20-23	VS 2-20-S8	VN 2-20-S	VSA 60	Silicone	11	0.82	4.8	x	
1-222-20-33	VS 2-20-P8	VN 2-20-P	VSA 60	Polyurethane	11	0.82	4.8	x	
1-222-20-82	VS 2-20-HE5	VN 2-20-HE	VSA 45	HE	11	0.82	4.8	x	
1-222-20-83	VS 2-20-HE8	VN 2-20-HE8	VSA 70	HE	11	0.82	4.8	x	
1-222-30-13	VS 2-30-N8	VN 2-30-N	VSA 60	Nitrile	17	2.27	13.4	x	
1-222-30-23	VS 2-30-S8	VN 2-30-S	VSA 60	Silicone	17	2.27	13.4	x	
1-222-30-33	VS 2-30-P8	VN 2-30-P	VSA 60	Polyurethane	17	2.27	13.4	x	
1-222-30-83-1	VS 2-30-HE8	VN 2-30 HE	VSA 90	HE	17	2.27	13.6	x	
1-222-40-13	VS 2-40-N8	VN 2-40-N	VSA 60	Nitrile	22.5	3.8	22.4	x	
1-222-40-23	VS 2-40-S8	VN 2-40-S	VSA 60	Silicone	22.5	3.8	22.4	x	
1-222-40-33	VS 2-40-P8	VN 2-40-P	VSA 60	Polyurethane	22.5	3.8	22.4	x	
1-222-40-83-1	VS 2-40-HE8	VN 2-40 HE	VSA 90	HE	22	3.8	22.8	x	
1-222-50-13	VS 2-50-N8	VN 2-50-N	VSA 80	Nitrile	32	8.68	51.1	x	
1-222-50-23	VS 2-50-S8	VN 2-50-S	VSA 80	Silicone	32	8.68	51.1	x	
1-222-50-33	VS 2-50-P8	VN 2-50-P	VSA 80	Polyurethane	32	8.68	51.1	x	
1-222-50-83-1	VS 2-50-HE8	VN 2-50 HE	VSA 90	HE	33	8.55	51.3	x	
1-222-75-14	VS 2-75-N4	VN 2-75-N	VSA 110	Nitrile	55	23.76	139.8		x
1-222-75-24	VS 2-75-S4	VN 2-75-S	VSA 110	Silicone	55	23.76	139.8		x
1-222-75-34	VS 2-75-P4	VN 2-75-P	VSA 110	Polyurethane	55	23.76	139.8		x
1-222-75-84	VS 2-75-HE4	VN 2-75-HE	VSA 110	HE	55	23.76	139.8		x

**Drawing:**

- 1 adapter
- 2 suction cup
- 3 sealing ring
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

**Dimensions**

A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
4	5	5.5	10.5	9	M3	3	5	-	2
4	5	5.5	10.5	9	M3	3	5	-	2
4	5	5.5	10.5	9	M3	3	5	-	2
6	8	9	14	12	M3	5	8	-	2
6	8	9	14	12	M3	5	8	-	2
6	8	9	14	12	M3	5	8	-	2
11	13	16	21	17	M3	5	7	-	2
11	13	16	21	17	M3	5	7	-	2
11	13	16	21	17	M3	5	7	-	2
11.5	12.5	14	19	13.5	M5	5	7	2	3
11.5	12.5	14	19	13.5	M5	5	7	2	3
11.5	12.5	14	19	13.5	M5	5	7	2	3
10	12	16	21	17	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	3
16	17	16	21.5	13.5	M5	5	7	2	4
15	17	16	24.5	17.5	M5	5	7	2	3
15	17	16	24.5	17.5	G1/8	8	13	3	11
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	M5	5	7	2	12
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	G1/8	8	13	4	13
22	24	21	27	18.5	M5	5	7	2	12
22	24	21	27	18.5	G1/8	8	13	3	13
33	36	30	35	25	G1/8	8	13	4	19
33	36	30	35	25	G1/8	8	13	4	18
33	36	30	35	25	G1/8	8	13	4	20
30	36	27	32	23	G1/8	8	13	5	19
42.5	45.5	30	35	25	G1/8	8	13	4	24
42.5	45.5	30	35	25	G1/8	8	13	4	23
42.5	45.5	30	35	25	G1/8	8	13	4	26
40	46	27.6	32	22	G1/8	8	13	5	24
54	59	37	42	29	G1/8	8	13	5	35
54	59	37	42	29	G1/8	8	13	5	34
54	59	37	42	29	G1/8	8	13	5	38
50	58.5	27.6	32	27	G1/8	8	13	5	36
78	84	41.5	50	26.5	G1/4	10	17	5	111
78	84	41.5	50	26.5	G1/4	10	17	5	110
78	84	41.5	50	26.5	G1/4	10	17	5	118
78	84	41.5	50	26.5	G1/4	10	17	5	113

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

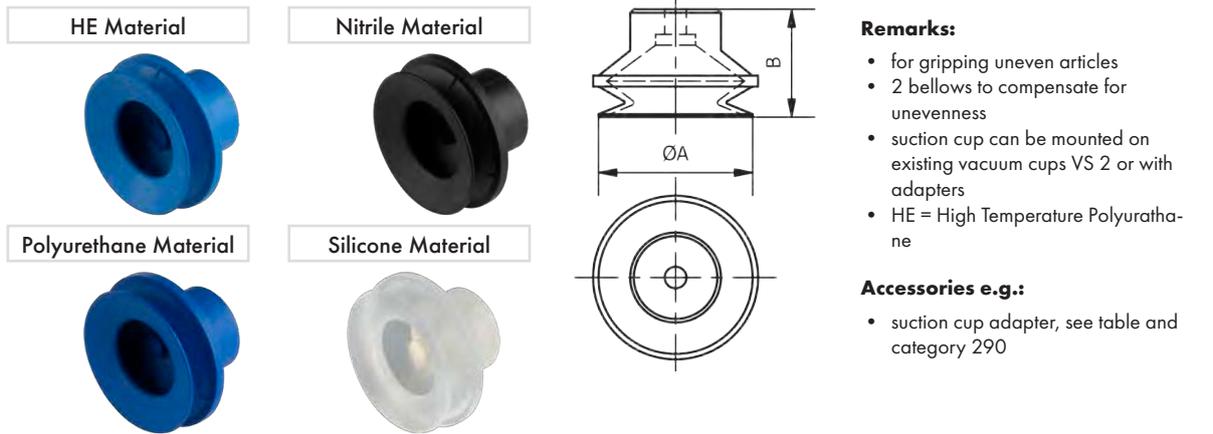
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 220 | Vacuum Cups

## VN 2 / Suction Cup - 2 Bellows, without Adapter



- Remarks:**
- for gripping uneven articles
  - 2 bellows to compensate for unevenness
  - suction cup can be mounted on existing vacuum cups VS 2 or with adapters
  - HE = High Temperature Polyurathane

- Accessories e.g.:**
- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-222-04-87	VN 2-4-HE	VSA 5	HE	4	5.5	<1
1-222-04-17	VN 2-4-N	VSA 5	Nitril	4	5.5	<1
1-222-04-27	VN 2-4-S	VSA 5	Silikon	4	5.5	<1
1-222-06-87	VN 2-6-HE	VSA 4	HE	6	9	<1
1-222-06-17	VN 2-6-N	VSA 4	Nitril	6	9	<1
1-222-06-27	VN 2-6-S	VSA 4	Silikon	6	9	<1
1-222-11-87	VN 2-11-HE	VSA 16	HE	11	16	1
1-222-11-17	VN 2-11-N	VSA 16	Nitril	11	16	1
1-222-11-27	VN 2-11-S	VSA 16	Silikon	11	16	1
1-222-10-10	VN 2-10-N	VSA 30	Nitrile	11.5	14	1
1-222-10-20	VN 2-10-S	VSA 30	Silicone	11.5	14	1
1-222-10-30	VN 2-10-P	VSA 30	Polyurethane	11.5	14	1
1-222-10-80-1	VN 2-10-HE	VSA 30	HE	10	16	1
1-222-15-10	VN 2-15-N	VSA 30	Nitrile	16	16	2
1-222-15-20	VN 2-15-S	VSA 30	Silicone	16	16	<1
1-222-15-30	VN 2-15-P	VSA 30	Polyurethane	16	16	1
1-222-15-80-1	VN 2-15-HE	VSA 40	HE	15	16	1
1-222-20-10	VN 2-20-N	VSA 60	Nitrile	22	21	3
1-222-20-20	VN 2-20-S	VSA 45	Silicone	22	21	3
1-222-20-30	VN 2-20-P	VSA 60	Polyurethane	22	21	3
1-222-20-80	VN 2-20-HE	VSA 45	HE	22	21	3
1-222-30-10	VN 2-30-N	VSA 60	Nitrile	33	30	9
1-222-30-20	VN 2-30-S	VSA 60	Silicone	33	30	8
1-222-30-30	VN 2-30-P	VSA 60	Polyurethane	33	30	10
1-222-30-80-1	VN2-30-HE	VSA 90	HE	30	27	9
1-222-40-10	VN 2-40-N	VSA 60	Nitrile	42.5	30	14
1-222-40-20	VN 2-40-S	VSA 60	Silicone	42.5	30	13
1-222-40-30	VN 2-40-P	VSA 60	Polyurethane	42.5	30	16
1-222-40-80-1	VN 2-40-HE	VSA 90	HE	40	27.6	14
1-222-50-10	VN 2-50-N	VSA 80	Nitrile	54	37	24
1-222-50-20	VN 2-50-S	VSA 80	Silicone	54	37	23
1-222-50-30	VN 2-50-P	VSA 80	Polyurethane	54	37	27
1-222-50-80-1	VN 2-50-HE	VSA 90	HE	50	27.6	25
1-222-75-10	VN 2-75-N	VSA 110	Nitrile	78	41.5	86
1-222-75-20	VN 2-75-S	VSA 110	Silicone	78	41.5	85
1-222-75-30	VN 2-75-P	VSA 110	Polyurethane	78	41.5	92
1-222-75-80	VN 2-75-HE	VSA 110	HE	78	41.5	88

## VS 2 PL / Vacuum Cup - 2 Bellows, Longlife, with Adapter

**Remarks:**

**Application: for gripping uneven, curved articles**

- 2 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup with adapter
- suction cups can be changed

**Connection:**

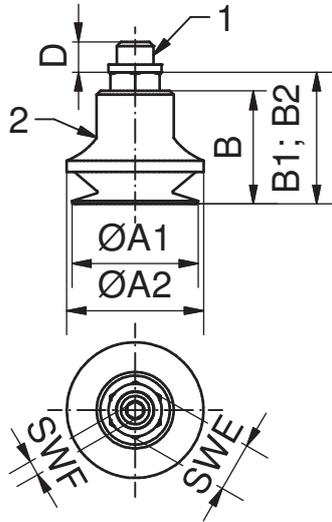
- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.



**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter	Material	Working area [mm]	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit
1-222-20-63	VS 2-20-PL8	VN 20 PL	VSA 60	PL	11	0.82	4.8	x
1-222-30-63	VS 2-30-PL8	VN 30 PL	VSA 60	PL	17	2.27	13.4	x
1-222-50-63	VS 2-50-PL8	VN 50 PL	VSA 80	PL	32	8.68	51.1	x

Part No.	Description	A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-222-20-63	VS 2-20-PL8	20	24	21	27	18.5	G1/8	8	13	4	12
1-222-30-63	VS 2-30-PL8	30	36	30	35	25	G1/8	8	13	4	17
1-222-50-63	VS 2-50-PL8	50	59	37	42	29	G1/8	8	13	5	34

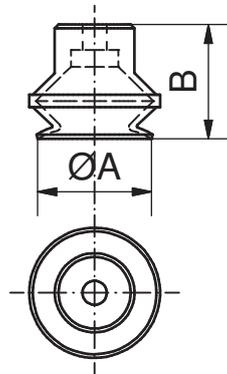
## VN 2 PL / Suction Cup - 2 Bellows, Longlife, without Adapter

**Remarks:**

- for gripping uneven, curved articles
- 2 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup can be mounted on existing vacuum cups VS 2 PL or with adapters

**Accessories e.g.:**

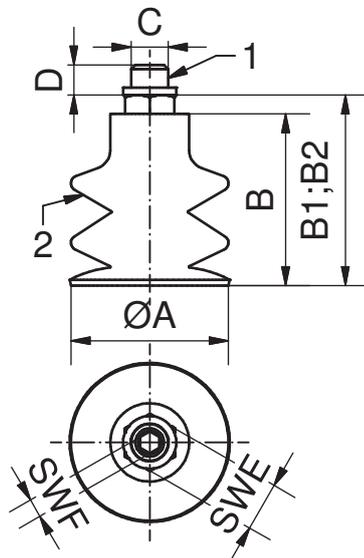
- suction cup adapter, see table and category 290



Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-222-20-60	VN 2-20-PL	VSA 60	PL	20	21	2.3
1-222-30-60	VN 2-30-PL	VSA 60	PL	30	21	6.8
1-222-50-60	VN 2-50-PL	VSA 80	PL	50	36	19.6

# 220 | Vacuum Cups

## VS 3 / Vacuum Cup 3 Bellows, with Adapter



**Remarks:**

**Application: for gripping strong uneven, curved articles**

- 3 bellows to compensate for unevenness
- suction cup with adapter
- suction cups can be changed
- PU = Polyurethane
- HE = High Temperature Polyurathane

**Connection:**

- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

Part No.	Description	Suction cup	Adapter
1-223-05-88	VS 3-5-HE3	VN 3-5-HE	VSA 17
1-223-05-18	VS 3-5-N3	VN 3-5-N	VSA 17
1-223-05-28	VS 3-5-S3	VN 3-5-S	VSA 17
1-223-07-88	VS 3-7-HE3	VN 3-7-HE	VSA 16
1-223-07-18	VS 3-7-N3	VN 3-7-N	VSA 16
1-223-07-28	VS 3-7-S3	VN 3-7-S	VSA 16
1-223-05-12	VS 3-5 N5	VN 3-5-N	VSA 30
1-223-05-22	VS 3-5-S5	VN 3-5-S	VSA 30
1-223-05-32	VS 3-5-P5	VN 3-5-P	VSA 30
1-223-05-82	VS 3-5-HE5	VN 3-5-HE	VSA 30
1-223-08-12	VS 3-8-N5	VN 3-8-N	VSA 30
1-223-08-22	VS 3-8-S5	VN 3-8-S	VSA 30
1-223-08-32	VS 3-8-P5	VN 3-8-P	VSA 30
1-223-08-82	VS 3-8-HE5	VN 3-8-HE	VSA 30
1-223-10-12	VS 3-10-N5	VN 3-10-N	VSA 40
1-223-10-22	VS 3-10-S5	VN 3-10-S	VSA 40
1-223-10-32	VS 3-10-P5	VN 3-10-P	VSA 40
1-223-10-82	VS 3-10-HE5	VN 3-10-HE	VSA 40
1-223-10-13	VS 3-10-N8	VN 3-10-N	VSA 70
1-223-10-23	VS 3-10-S8	VN 3-10-S	VSA 70
1-223-10-33	VS 3-10-P8	VN 3-10-P	VSA 70
1-223-10-83	VS 3-10-HE8	VN 3-10-HE	VSA70
1-223-12-82	VS 3-12-HE5	VN 3-12-HE	VSA 40
1-223-12-83	VS 3-12-HE8	VN 3-12-HE	VSA 70
1-223-15-12	VS 3-15-N5	VN 3-15-N	VSA 40
1-223-15-22	VS 3-15-S5	VN 3-15-S	VSA 40
1-223-15-32	VS 3-15-P5	VN 3-15-P	VSA 40
1-223-15-82	VS 3-15-HE5	VN 3-15-HE	VSA 40
1-223-15-13	VS 3-15-N8	VN 3-15-N	VSA 70
1-223-15-23	VS 3-15-S8	VN 3-15-S	VSA 70
1-223-15-33	VS 3-15-P8	VN 3-15-P	VSA 70
1-223-15-83	VS 3-15-HE8	VN 3-15-HE	VSA 70
1-223-18-12	VS 3-18-N5	VN 3-18-N	VSA 40
1-223-18-22	VS 3-18-S5	VN 3-18-S	VSA 40
1-223-18-32	VS 3-18-P5	VN 3-18-P	VSA 40
1-223-18-82	VS 3-18-HE5	VN 3-18-HE	VSA 40
1-223-18-13	VS 3-18-N8	VN 3-18-N	VSA 70
1-223-18-23	VS 3-18-S8	VN 3-18-S	VSA 70
1-223-18-33	VS 3-18-P8	VN 3-18-P	VSA 70
1-223-18-83	VS 3-18-HE8	VN 3-18-HE	VSA 70
1-223-20-12	VS 3-20-N5	VN 3-20-N	VSA 40
1-223-20-22	VS 3-20-S5	VN 3-20-S	VSA 40
1-223-20-32	VS 3-20-P5	VN 3-20-P	VSA 40
1-223-20-82	VS 3-20-HE5	VN 3-20-HE	VSA 40
1-223-20-13	VS 3-20-N8	VN 3-20-N	VSA 70
1-223-20-23	VS 3-20-S8	VN 3-20-S	VSA 70
1-223-20-33	VS 3-20-P8	VN 3-20-P	VSA 70
1-223-20-83	VS 3-20-HE8	VN 3-20-HE	VSA 70
1-223-25-82	VS 3-25-HE5	VN 3-25-HE	VSA 40
1-223-25-83	VS 3-25-HE8	VN 3-25-HE	VSA 60

Material	Working area diameter [mm]	Operating [cm²]	Holding force [N]	Push fit	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
HE	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
Nitril	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
Silikon	2.6	0.05	0,3	x	5	14	19	17	M3	5	7	-	2
HE	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Nitril	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Silikon	1,8	0,03	0,15	x	7	14	19	16	M3	5	7	-	2
Nitrile	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
Silicone	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
PU	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
HE	2	0.03	0.2	x	5	9.5	14.5	10.5	M5	5	7	2	3
Nitrile	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
Silicone	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
PU	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
HE	2.9	0.07	0.4	x	8	10	15	12	M5	5	7	2	3
Nitrile	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
Silicone	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
PU	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
HE	4.5	0.14	0.8	x	10	15	20	16	M5	5.5	7	2	4
Nitrile	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
Silicone	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
PU	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
HE	4.5	0.14	0.8	x	10	15	20	16	G1/8	8	13	3	11
HE	5	0,18	1,1	x	13	21	26	19	M5	5,5	7	2	5
HE	5	0,18	1,1	x	13	21	26	19	G1/8	8	13	3	11
Nitrile	5.2	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
Silicone	5.2	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
PU	5	0.18	1.1	x	15	23	28	20	M5	5.5	7	2	5
HE	5.2	0.07	0.4	x	15	23	28	20	M5	5.5	7	2	5
Nitrile	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
Silicone	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
PU	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
HE	5.2	0.18	1.1	x	15	23	28	20	G1/8	8	13	3	12
Nitrile	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
Silicone	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
PU	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
HE	8	0.49	2.9	x	18	23	28	20	M5	5.5	7	2	5
Nitrile	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
Silicone	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
PU	8	0.49	2.9	x	18	23	28	20	G1/8	8	13	3	12
HE	8	0.49	2.9	x	18	23	28	20	G1/8	5	13	3	12
Nitrile	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
Silicone	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
PU	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	6
HE	9.6	0.65	3.8	x	20	23	28	20	M5	5	7	2	5
Nitrile	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
Silicone	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
PU	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
HE	9.6	0.65	3.8	x	20	23	28	20	G1/8	8	13	3	12
HE	10	0.8	6.4	x	25	34	39	21	M5	5.5	7	2	7
HE	10	0.8	6.4	x	25	34	39	21	G1/8	8	13	3	14

Continuation on the following page

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

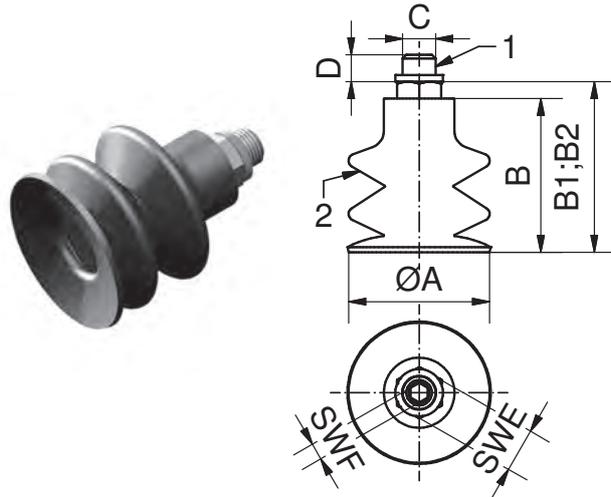
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 220 | Vacuum Cups

## VS 3 / Vacuum Cup - 3 Bellows, with Adapter (Continuation)



Part No.	Description	Suction cup	Adapter
1-223-30-13	VS 3-30-N8	VN 3-30-N	VSA 90
1-223-30-23	VS 3-30-S8	VN 3-30-S	VSA 90
1-223-30-33	VS 3-30-P8	VN 3-30-P	VSA 90
1-223-30-83	VS 3-30-HE8	VN 3-30-HE	VSA 90
1-223-40-13	VS 3-40-N8	VN 3-40-N	VSA 90
1-223-40-23	VS 3-40-S8	VN 3-40-S	VSA 90
1-223-40-33	VS 3-40-P8	VN 3-40-P	VSA 90
1-223-40-83	VS 3-40-HE8	VN 3-40-HE	VSA 90
1-223-60-13	VS 3-60-N8	VN 3-60-N	VSA 90
1-223-60-23	VS 3-60-S8	VN 3-60-S	VSA 90
1-223-60-33	VS 3-60-P8	VN 3-60-P	VSA 90
1-223-60-83	VS 3-60-HE8	VN 3-60-HE	VSA 90
1-223-90-14	VS 3-90-N4	VN 3-90-N	VSA100
1-223-90-24	VS 3-90-S4	VN 3-90-S	VSA100

## VN 3 / Suction Cup - 3 Bellows, without Adapter

HE Material



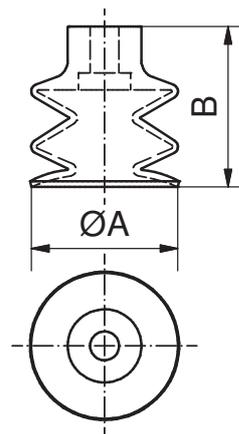
Nitrile Material



Polyurethane Material



Silicone Material



**Remarks:**

- for gripping strong uneven articles
- 3 bellows to compensate for unevenness
- suction cup can be mounted on existing vacuum cups VS 2 or with adapters
- HE = High Temperature Polyurethane

**Accessories e.g.:**

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-05-87	VN 3-5-HE	VSA 17	HE	5	14	<1
1-223-05-17	VN 3-5-N-M	VSA 17	Nitril	5	14	<1
1-223-05-27	VN 3-5-S-M	VSA 17	Silikon	5	14	<1
1-223-07-87	VN 3-7-HE-M	VSA 16	HE	7	14	<1
1-223-07-17	VN 3-7-N	VSA 16	Nitril	7	14	<1
1-223-07-27	VN 3-7-S	VSA 16	Silikon	7	14	<1
1-223-05-10	VN 3-5-N	VSA 30	Nitrile	5	9.5	<1
1-223-05-20	VN 3-5-S	VSA 30	Silicone	5	9.5	<1
1-223-05-30	VN 3-5-P	VSA 30	Polyurethane	5	9.5	<1
1-223-05-80	VN 3-5-HE	VSA 30	HE	5	9.5	<1
1-223-08-10	VN 3-8-N	VSA 30	Nitrile	8	10	<1
1-223-08-20	VN 3-8-S	VSA 30	Silicone	8	10	<1
1-223-08-30	VN 3-8-P	VSA 30	Polyurethane	8	10	<1
1-223-08-80	VN 3-8-HE	VSA 30	HE	8	10	<1
1-223-10-10	VN 3-10-N	VSA 40	Nitrile	10	15	1
1-223-10-20	VN 3-10-S	VSA 40	Silicone	10	15	1
1-223-10-30	VN 3-10-P	VSA 40	Polyurethane	10	15	1

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
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**290**  
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Parallel Gripper

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Gripper Fingers

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Nipper Bodies

**610**  
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Pneumatics

**990**  
Tubular System  
Micro System

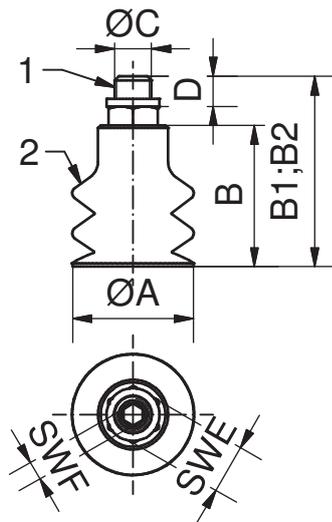
**990**  
PA-Forming  
Others

Material	Working area Ø [mm]	Operating [cm <sup>2</sup> ]	Holding force [N]	Push fit	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
Nitrile	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	21
Silicone	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	21
PU	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	23
HE	17	2.01	11.8	x	30	37.5	42.5	30	G1/8	8	13	5	22
Nitrile	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	33
Silicone	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	33
PU	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	36
HE	16	2.27	13.4	x	40	45.5	51.5	34	G1/8	8	13	5	34
Nitrile	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	52
Silicone	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	51
PU	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	57
HE	29	6.72	39.6	x	60	56	61	37	G1/8	8	13	5	54
Nitrile	32	7.79	45.9	x	90	87	92	58	G1/4	10	17	6	195
Silicone	32	7.79	45.9	x	90	87	92	58	G1/4	10	17	6	189

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-10-80	VN 3-10-HE	VSA 40	HE	10	15	1
1-223-12-80	VN 3-12-HE	VSA 40	HE	13	21	1
1-223-15-10	VN 3-15-N	VSA 40	Nitrile	15	23	1
1-223-15-20	VN 3-15-S	VSA 40	Silicone	15	23	1
1-223-15-30	VN 3-15-P	VSA 40	Polyurethane	15	23	2
1-223-15-80	VN 3-15-HE	VSA 40	HE	15	23	1
1-223-18-10	VN 3-18-N	VSA 40	Nitrile	18	23	2
1-223-18-20	VN 3-18-S	VSA 40	Silicone	18	23	2
1-223-18-30	VN 3-18-P	VSA 40	Polyurethane	18	23	2
1-223-18-80	VN 3-18-HE	VSA 40	HE	18	23	2
1-223-20-10	VN 3-20-N	VSA 40	Nitrile	20	23	2
1-223-20-20	VN 3-20-S	VSA 40	Silicone	20	23	2
1-223-20-30	VN 3-20-P	VSA 40	Polyurethane	20	23	2
1-223-20-80	VN 3-20-HE	VSA 40	HE	20	23	2
1-223-25-80	VN 3-25-HE	VSA 40 / 60	HE	25	34	6.1
1-223-30-10	VN 3-30-N	VSA 90	Nitrile	30	37.5	9
1-223-30-20	VN 3-30-S	VSA 90	Silicone	30	37.5	9
1-223-30-30	VN 3-30-P	VSA 90	Polyurethane	30	37.5	10
1-223-30-80	VN 3-30-HE	VSA 90	HE	30	37.5	9
1-223-40-10	VN 3-40-N	VSA 90	Nitrile	40	45.5	21
1-223-40-20	VN 3-40-S	VSA 90	Silicone	40	45.5	20
1-223-40-30	VN 3-40-P	VSA 90	Polyurethane	40	45.5	23
1-223-40-80	VN 3-40-HE	VSA 90	HE	40	45.5	21
1-223-60-10	VN 3-60-N	VSA 90	Nitrile	60	56	40
1-223-60-20	VN 3-60-S	VSA 90	Silicone	60	56	38
1-223-60-30	VN 3-60-P	VSA 90	Polyurethane	60	56	45
1-223-60-80	VN 3-60-HE	VSA 90	HE	60	56	41
1-223-90-10	VN 3-90-N	VSA100	Nitrile	90	87	162
1-223-90-20	VN 3-90-S	VSA100	Silicone	90	87	157

# 220 | Vacuum Cups

## VS 3 PL / Vacuum Cup - 3 Bellows, Longlife, with Adapter



**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon
- SWF internal hexagon

**Remarks:**

**Application: for gripping strong uneven, curved articles**

- 3 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup with adapter
- suction cups can be changed

**Connection:**

- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

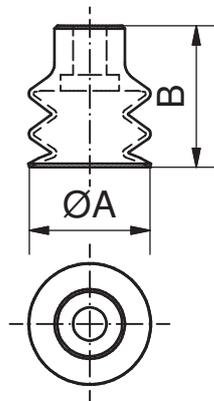
**Data**

Part No.	Description	Suction cup	Adapter	Material	Working area	Operating [cm <sup>2</sup> ]	Holding force [N]	Connection
1-223-20-62	VS 3-20-PL5	VN 3-20-PL	VSA 40	PL	10.2	0.82	4.9	push fit
1-223-20-63	VS 3-20-PL8	VN 3-20-PL	VSA 70	PL	10.2	0.82	4.9	push fit
1-223-30-63	VS 3-30-PL8	VN 3-30-PL	VSA 90	PL	17.8	2.01	11.8	push fit
1-223-60-63	VS 3-60-PL8	VN 3-60-PL	VSA 90	PL	30.8	6.72	39.6	push fit

**Dimensions**

Part No.	Description	A [mm]	B [mm]	B [mm]	B2 [mm]	C [mm] ["]	D [mm]	SWE [mm]	SWF [mm]	Weight [g]
1-223-20-62	VS 3-20-PL5	20	23	28	20	M5	5	7	2	5
1-223-20-63	VS 3-20-PL8	20	23	28	20	G1/8	8	13	3	12
1-223-30-63	VS 3-30-PL8	30	37.5	42.5	30	G1/8	8	13	5	19
1-223-60-63	VS 3-60-PL8	60	56	61	37	G1/8	8	13	5	49

## VN 3 PL / Suction Cup - 3 Bellows, Longlife, without Adapter



**Remarks:**

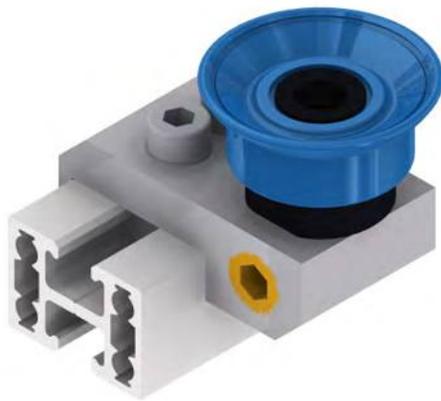
- for gripping strong uneven, curved articles
- 3 bellows to compensate for unevenness
- extra durable with high wear resistance
- PL = Polyurethane Long Life
- suction cup can be mounted on existing vacuum cups VS 3 PL or with adapters

**Accessories e.g.:**

- suction cup adapter, see table and category 290

Part No.	Description	fits for Adapter	Material	A [mm]	B [mm]	Weight [g]
1-223-20-60	VN 3-20-PL	VSA 40 / VSA 70	PL	20	23	2
1-223-30-60	VN 3-30-PL	VSA 90	PL	30	37.5	6
1-223-60-60	VN 3-60-PL	VSA 90	PL	60	56	36

## Application examples Vacuum Cups



## Vacuum Cup properties

### Advantages:

*Different materials in different diameters for special applications, see product descriptions*

### Material specifications:

\*\*\*\*\* = very high  
\*\*\* = high  
\* = low

### Material: Natural Rubber (NK)

Colour:	Brown
Hardness:	40
Working Temperature:	-40 °C to 80 °C short term -50 to +120 °C
Tear Resistance:	**
Aging Properties:	**
Oil & Grease Resistance:	*
Application:	Low temperature

### Material: Rubber (NBR)

Colour:	grey or red
Working Temperature:	-30 °C to 100 °C
Hardness:	45 +/- 5
Tear Resistance:	***
Aging Properties:	****
Oil & Grease Resistance:	***
Application:	Handling parts with grainy surfaces

### Material: Perbunan (PN)

Colour:	blue
Hardness:	55 +/- 5
Working Temperature:	-30 °C to 100 °C
Tear Resistance:	****
Aging Properties:	*****
Abrasion Resistance:	****
Oil & Grease Resistance:	****
Application:	sheet metal

### Material: Polyurethane (2K)

Colour:	lightblue (lip) blue (bellow)
Shore hardness:	lip: 30 A, soft bellow: 40 A, medium
Working Temperature:	+10 °C to +50 °C
Advantage:	very soft lip and high sealing
Application:	for very uneven and heavy textured surfaces

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

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Nipper Bodies

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Nipper Blades

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Special Elements

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Sensors

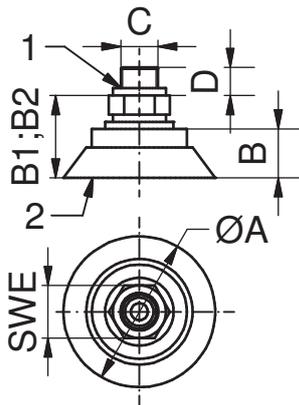
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 224 | Vacuum Cups-Special

### VAS SBR / Special Vacuum Cup, for rough surfaces, with Adapter



**Remarks:**

**Application:** e.g. in the wood industry when handling raw chipboard

- material: natural rubber
- heat resistant up to 100 °C
- nearly mark free
- recommended for rough, grained surfaces
- suction cup with adapter
- suction cups can be changed

**Connection:**

- suction cup/adapter

**Scope of delivery:**

- every VS is delivered with sealing ring

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

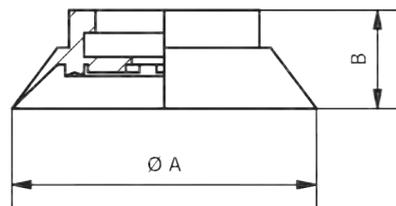
**Drawing:**

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position
- SWE external hexagon

Part No.	Description	Suction cup	Adapter	Material	Holding force [N]	Operating [cm <sup>2</sup> ]
1-224-82-00	VAS 40 SBR	VSN 40 SBR	AVS 40	NBR	36.2	6.16
1-224-85-00	VAS 70 SBR	VSN 70 SBR	AVS 70	NBR	81.5	13.85

Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C [°]	D [mm]	SWE [mm]	Weight [g]
1-224-82-00	VAS 40 SBR	40	13	22	17.5	G1/8	8	14	20
1-224-85-00	VAS 70 SBR	70	28	37	34	G1/4	10	17	96

### VSN SBR / Special Suction Cup, without Adapter



**Remarks:**

- material: natural rubber
- heat resistant up to 100 °C
- recommended for rough, grained surfaces
- suction cup can be mounted on existing vacuum cups VAS SBR or with adapters

**Accessories e.g.:**

- suction cup adapter, see table and category 290

Part No.	Description	Adapter	Material	A [mm]	B [mm]	Weight [g]
1-224-82-01	VSN 40 SBR	AVS 40	NBR	40	13	6
1-224-85-01	VSN 70 SBR	AVS 70	NBR	70	28	45

## VS 1 PN / Special Vacuum Cup for sheet metal, with Adapter

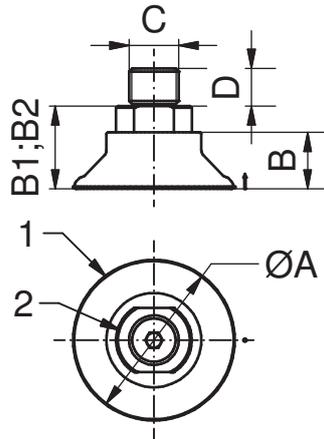
### Remarks:

**Application: specially adapted to the sheet metal handling**

- special inner structure prevents buckling or deep drawing, even with thin sheets (up to approx. 0.5 mm thick) or aluminum sheets
- soft, conformable sealing lip especially suitable for flat or slightly curved workpieces with a smooth or slightly rough textured surface
- PN = Perbunan (color: blue)
- vulcanized nipple

### Drawing:

- 1 adapter
- 2 suction cup
- B1 relaxed position
- B2 compressed position



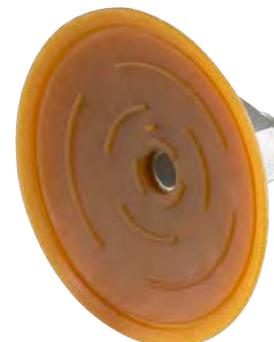
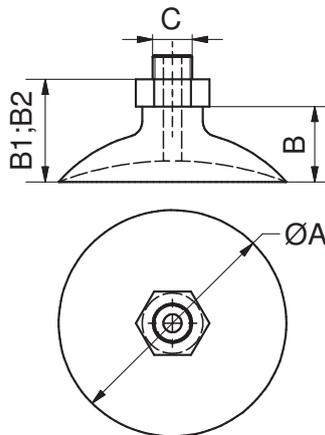
Part No.	Description	A [mm]	B [mm]	B1 [mm]	B2 [mm]	C ["]	D [mm]	SW [mm]	Material	Weight [g]
1-225-03-00	VS 1-30 PN 4	30	13	20	17	G1/4	10	17	PN	31
1-225-06-00	VS 1-40 PN 4	40	15	22	18	G1/4	10	17	PN	22
1-225-09-00	VS 1-50 PN 4	50	18	28	24	G1/4	10	22	PN	51
1-225-12-00	VS 1-60 PN 4	60	20	31	26	G1/4	10	22	PN	68
1-225-15-00	VS 1-80 PN 4	80	25	36	30	G1/4	10	22	PN	88
1-225-18-00	VS 1-100 PN 4	100	26	36	30	G1/4	10	22	PN	76
1-225-21-00	VS 1-125 PN 4	125	34	43	36	G1/4	10	22	PN	154

## VS 1 NK / Vacuum Cup Natural Rubber - 1 Bellow, with Adapter

### Remarks:

**Application: e.g. suitable for very short cycle time**

- NK = natural rubber
- exact positioning
- higher load capacity
- no twisting
- suction cups are vulcanised onto nipples



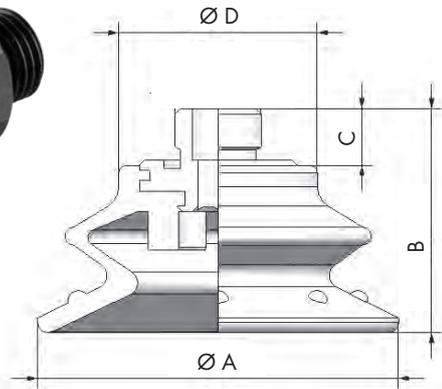
Part No.	Description	A [mm]	C [mm]	B [mm]	B1 [mm]	B2 [mm]	Material
1-229-04-00	VS 1 34 NK 4	34	G1/4	14	23	20	NK
1-229-05-00	VS 1 53 NK 4	53	G1/4	20	29	25	NK
1-229-06-00	VS 1 75 NK 4	75	G1/4	25	34	28	NK
1-229-07-00	VS 1 96 NK 4	96	G1/4	38	47	35	NK

# 224 | Vacuum Cups-Special

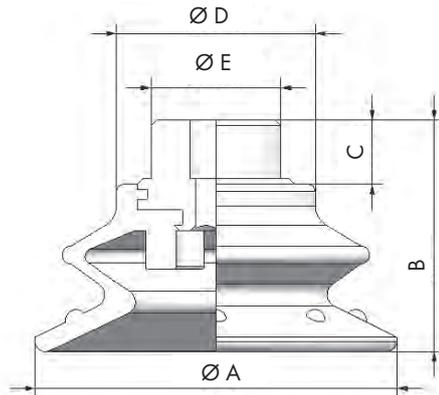
## VS 2 2K / 2-Component Vacuum Cup - 2 Bellows, with Adapter



Picture: VS 2-15... to VS 2-40...



Picture: VS 2-50... to VS 2-70... (without PDN)



**Remarks:**

**Application: for high sealing, e.g. on grained, rough, uneven surfaces**

- 2 bellows to compensate for unevenness and textured surfaces
  - temperature range +10°C to +50°C (higher temperatures temporary possible)
  - suction cup with adapter
  - suction cups can be changed
- Note \* 1:  
Ø70: adapter is molded into the cup
- Note \* 2:  
Ø50 and Ø70:  
with internal thread, adapters have to be reduced from 3/8 to 1/4 by using PDN 3/8-1/4 (Part No. 1-858-18-00)

**Bellow and lip have different degrees of hardness:**

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Scope of delivery:**

- every VS is delivered with sealing ring

Part No.	Description	Suction Cup	Adapter	Connection	Material	Working Area [mm]	Operating [cm <sup>2</sup> ]	Holding Force [N]
1-228-15-00	VS 2-15-2K5	VN 2-15-2K	VSA 2K 15 M	M5	Polyurethane	7	0.33	2.0
1-228-20-00	VS 2-20-2K8	VN 2-20-2K	VSA 2K 20 M	G1/8	Polyurethane	11	0.87	5.2
1-228-30-00	VS 2-30-2K4	VN 2-30-2K	VSA 2K 40 M	G1/4	Polyurethane	19	2.69	16.1
1-228-40-00	VS 2-40-2K4	VN 2-40-2K	VSA 2K 40 M	G1/4	Polyurethane	25	4.71	28.3
1-228-50-00	VS 2-50-2K3-8	VN 2-50-2K	VSA 2K 50 F	G3/8*2	Polyurethane	32	7.79	46.8
1-228-70-00	VS 2-70-2K3-8	*1	*1	G3/8*2	Polyurethane	43	14.19	85.1

Part No.	Description	integrated filter screen	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Ø E [mm]	Wrench Size [mm]	Weight [g]
1-228-15-00	VS 2-15-2K5		16	28	9	9		8	2
1-228-20-00	VS 2-20-2K8	x	21	28	10	12		12	4
1-228-30-00	VS 2-30-2K4	x	32	32	15	17		19	12
1-228-40-00	VS 2-40-2K4	x	42	37	15	22		19	18
1-228-50-00	VS 2-50-2K3-8	x	53	44	15	28	28	24	37
1-228-70-00	VS 2-70-2K3-8		73	60	13	50	28	22	68

**VN 2 2K / 2-Component Suction Cup - 2 Bellows, without Adapter**

**Remarks:**

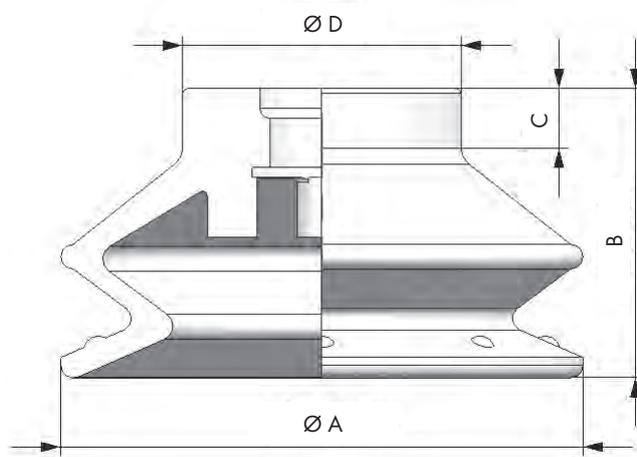
- high sealing on grained, rough, uneven surfaces
- 2 bellows to compensate for unevenness and textured surfaces
- temperature range +10°C to +50°C (higher temperatures temporary possible)
- suction cup can be mounted on existing vacuum cups VS 2 2K or with adapters

**Bellow and lip have different degrees of hardness:**

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

**Accessories e.g.:**

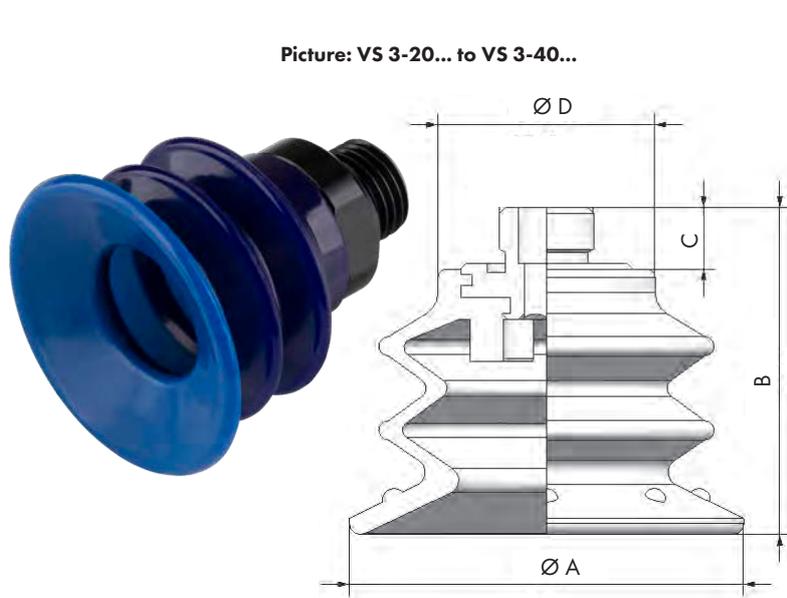
- suction cup adapter, see table and category 290



Part No.	Description	Adapter	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Weight [g]
1-228-15-01	VN 2-15-2K	VSA 2K 15 M	Polyurethane	16	19	8	9	1
1-228-20-01	VN 2-20-2K	VSA 2K 20 M	Polyurethane	21	18	5	12	2
1-228-30-01	VN 2-30-2K	VSA 2K 40 M	Polyurethane	32	17	3	17	4
1-228-40-01	VN 2-40-2K	VSA 2K 40 M	Polyurethane	42	22	4	22	11
1-228-50-01	VN 2-50-2K	VSA 2K 50 F	Polyurethane	53	29	6	28	20

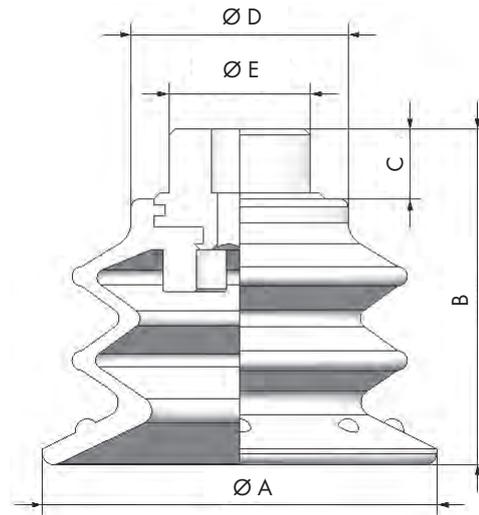
# 224 | Vacuum Cups-Special

## VS 3 2K / 2-Component Vacuum Cup - 3 Bellows, with Adapter



Picture: VS 3-20... to VS 3-40...

Picture: VS 3-50... to VS 3-70... (without PDN)



**Remarks:**

**Application: for high sealing, e.g. on grained, rough, strong uneven surfaces**

- 3 bellows to compensate for strong unevenness and textured surfaces
  - temperature range +10°C to +50°C (higher temperatures temporary possible)
  - suction cup with adapter
  - suction cups can be changed
- Note \* 1:  
Ø70: adapter is molded into the cup
- Note \* 2:  
Ø50 and Ø70  
with internal thread, adapters have to be reduced from 3/8 to 1/4 by using PDN 3/8-1/4 (Part No. 1-858-18-00)

**Bellow and lip have different degrees of hardness:**

- optimal suction stability
- very soft and flexible sealing lip
- Shore Hardness A
- 30 (lip very soft)
- 60 (bowl medium soft)

**Holding force:**

Is the theoretical value at -0.6 bar vacuum on a dry smooth and flat surface. There is no safety factor built in.

**Scope of delivery:**

- every VS is delivered with sealing ring

Part No.	Description	Suction Cup	Adapter	Connection	Material	Working Area [mm]	Operating [cm <sup>2</sup> ]	Holding Force [N]
1-228-22-00	VS 3-20-2K8	VN 3-20-2K	VSA 2K 20 M	G1/8	Polyurethane	12	1.04	6.2
1-228-33-00	VS 3-30-2K8	VN 3-30-2K	VSA 2K 20 M	G1/8	Polyurethane	13	1.33	8.0
1-228-44-00	VS 3-40-2K4	VN 3-40-2K	VSA 2K 40 M	G1/4	Polyurethane	18	2.41	14.4
1-228-55-00	VS 3-50-2K3-8	VN 3-50-2K	VSA 2K 50 F	G3/8*2	Polyurethane	22	3.80	22.8
1-228-77-00	VS 3-70-2K3-8	*1	*1	G3/8*2	Polyurethane	32	8.04	48.3
1-228-78-00	VS 3-70-2K3-8-M	*1	*1	G3/8	Polyurethan	32	8.04	48.3

Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Ø E [mm]	Wrench Size [mm]	Weight [g]
1-228-22-00	VS 3-20-2K8	21	25	10	12		12	2
1-228-33-00	VS 3-30-2K8	30	31	10	17		13	7
1-228-44-00	VS 3-40-2K4	40	43	15	22		19	18
1-228-55-00	VS 3-50-2K3-8	50	51	15	28	28	24	37
1-228-77-00	VS 3-70-2K3-8	70	60	13	39	28	22	66
1-228-78-00	VS 3-70-2K3-8-M	70	60	13	39	28	22	66

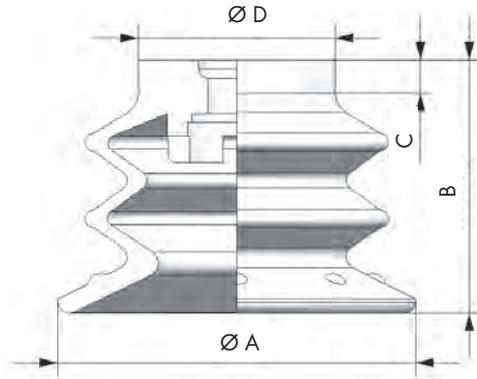
## VN 3 2K / 2-Component Suction Cup - 3 Bellows, without Adapter

### Remarks:

- high sealing on grained, rough, uneven surfaces
- 3 bellows to compensate for strong unevenness and textured surfaces
- temperature range +10°C to +50°C (higher temperatures temporary possible)
- suction cup can be mounted on existing vacuum cups VS 2 2K or with adapters
- see VS 3 2K

### Accessories e.g.:

- suction cup adapter, see table and category 290



Part No.	Description	Adapter	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	Weight [g]
1-228-22-01	VN 3-20-2K	VSA 2K 20 M	Polyurethane	21	15	2	12	2
1-228-33-01	VN 3-30-2K	VSA 2K 20 M	Polyurethane	30	21	3	17	4
1-228-44-01	VN 3-40-2K	VSA 2K 40 M	Polyurethane	40	28	4	22	10
1-228-55-01	VN 3-50-2K	VSA 2K 50 F	Polyurethane	50	36	5	28	19

## VS 1 E / Vacuum Cup made of ED

### Remarks:

**Application: when good holding force and exact positioning are needed**

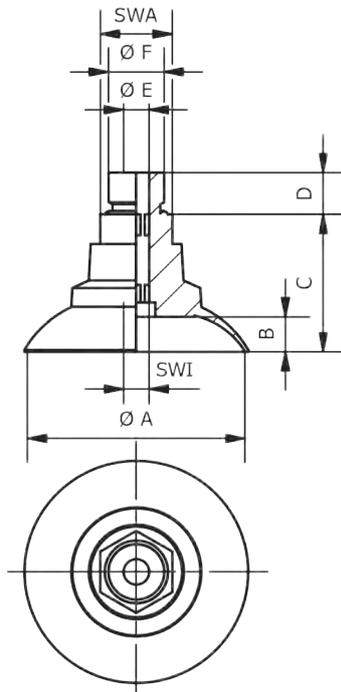
- applicable to curved surfaces
- suitable for sheet metal and oily surfaces
- prevents deep drawing and minimizes dents
- suction cup made of Elastodur
- shore hardness: 85 °Sh
- nipple made of Aluminium

### Connection:

- suction cup and adapter are screwed together

### Zeichnung:

- F vacuum connection  
 SWI internal hexagon  
 SWA external hexagon



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F ["]	SWA [mm]	SWI [mm]	Weight [g]
1-225-25-00	VS 1-40 E 4	41,3	6,9	27,6	10	5	G1/4	17	5	17
1-225-29-00	VS 1-50 E 4	51,5	8,4	32,8	10	6	G1/4	17	6	28
1-225-33-00	VS 1-60 E 4	61,5	10,9	35,3	10	6	G1/4	17	6	31
1-225-41-00	VS 1-80 E 4	81	13,9	38,3	10	6	G1/4	17	6	39
1-225-37-00	VS 1-100 E 4	99,7	17,1	47,2	10	6	G1/4	22	6	72

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

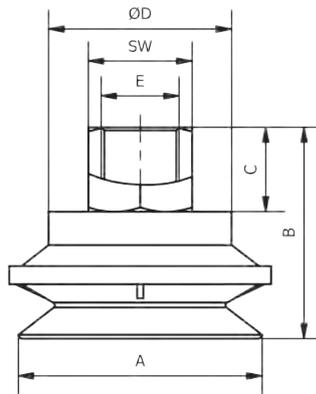
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 224 | Vacuum Cups-Special

### VS HT+ / Vacuum Cup, heat-resistant up to 300°C, with Adapter



**Remarks:**

**Application: special vacuum cup for demoulding at high temperatures**

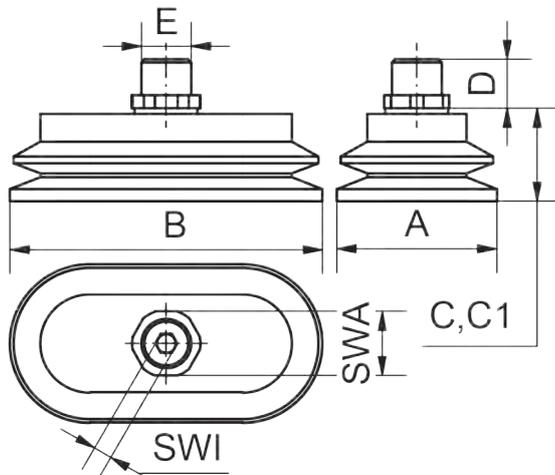
- 2 bellows for compensating uneven surfaces
- temperature range from -20°C to +300°C
- resistant to: chemicals, chloric solvents, lubrication solvents, aromatic/aliphatic hydrocarbons

**Accessories e.g.:**

- Adapter PDN

Part No.	Description	Material	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	SW [°]	Screw Thread, inside E [°]	Weight [g]
1-229-30-00	VS 2-40 HT+	Special-Viton	40	35	14	30	17	1/4	46
1-229-31-00	VS 2-50 HT+	Special-Viton	50	36	15	40	22	1/4	89

### VS O 2 / Suction Cup - oval, 2 Bellows, with Adapter



**Remarks:**

**Application: for demoulding tasks where high holding forces are needed**

- for gripping long articles
- HE = High Temperature Polyurathane

**Connection:**

- suction cups are vulcanised to the nipple

**Scope of delivery:**

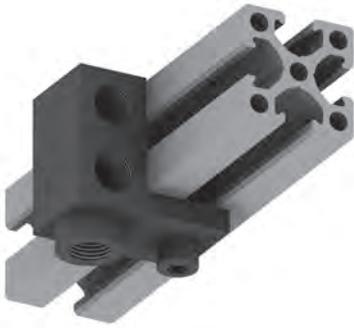
- every VS is delivered with sealing ring

**Drawing:**

- C normal position
- C1 compressed position
- SWI internal hexagon
- SWA external hexagon

Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [°]	SWA [mm]	SWI [mm]	Weight [g]
1-224-90-00	VS 2 O-30x60 HE	32	62	22	16	13	G1/4	17	5	36
1-224-91-00	VS 2 O-40x80 HE	42	82	25	16	13	G1/4	17	5	44

## Application example VTB1



## Application example VTB2



## Application example LVT

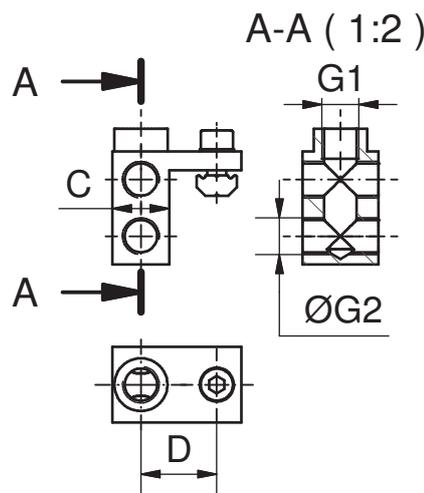


## VTB 1 / Manifold Block 4 Ports

**Remarks:**

**Application: for expanding air circuits**

- can be mounted directly to profiles
- 1 circuit
- 1 inlet
- 4 ports



Part No.	Description	G1 ["]	G2 ["]	C [mm]	D [mm]	Input	Output	Material	Weight [g]
1-230-05-00	VTB X 1-4-1/8-1/8	G1/8	G1/8	15	20	1	4	Aluminum	31
1-230-12-00	VTB JU 1-4-1/8-1/8	G1/8	G1/8	15	27.5	1	4	Aluminum	36

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

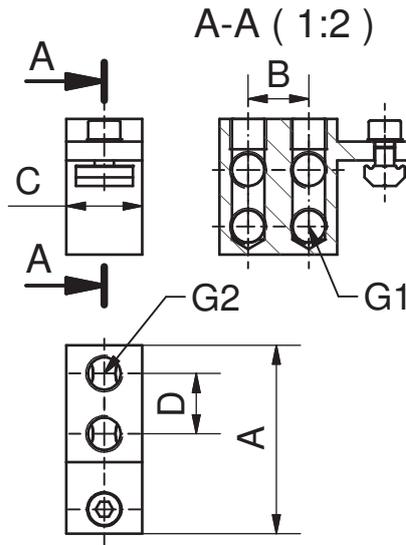
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 230 | Manifold

## VTB 2 / Manifold Block 8 Ports



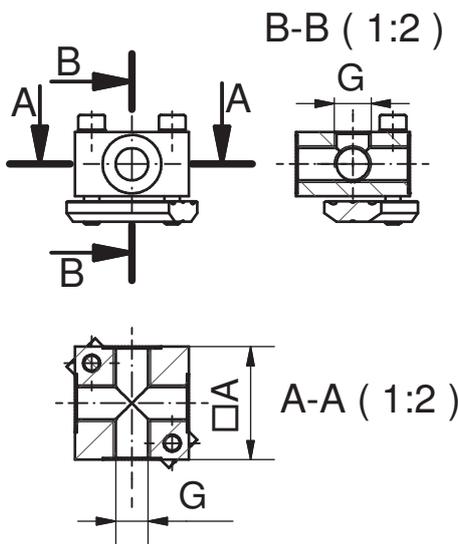
**Remarks:**

**Application: for expanding air circuits**

- can be mounted directly to profiles
- VTB X 1-8-1/8-1/8 and VTB JU 1-8-1/8-1/8:
  - 1 circuit
  - 8 ports
- VTB X 2-8-1/8-1/8 and VTB JU 2-8-1/8-1/8:
  - 2 circuits
  - 4 ports per circuit

Part No.	Description	A [mm]	B [mm]	C [mm]	G1 ["]	G2 ["]	D [mm]	Input	Output	Circuits	Weight [g]
1-230-15-00	VTB X 1-8-1/8-1/8	50	15	20	G1/8	G1/8	15	1	8	1	47
1-230-25-00	VTB X 2-8-1/8-1/8	50	15	20	G1/8	G1/8	15	2	8	2	56
1-230-22-00	VTB JU 1-8-1/8-1/8	60	15	20	G1/8	G1/8	15	1	8	1	53
1-230-32-00	VTB JU 2-8-1/8-1/8	60	16	20	G1/8	G1/8	15	2	8	2	56

## LVT / Light Weight Manifold Block



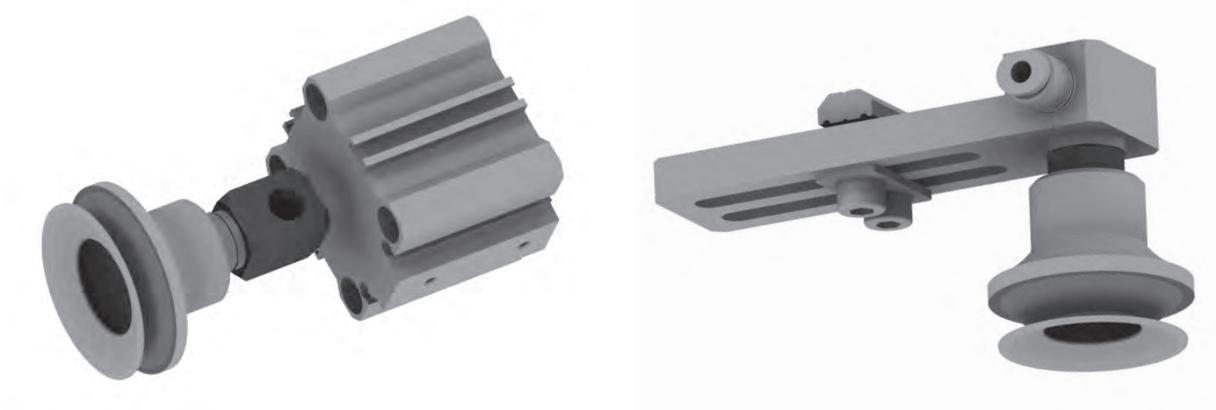
**Remarks:**

**Application: for expanding air circuits**

- can be mounted directly to profiles
- 1 circuit
- 1 inlet
- 4 ports

Part No.	Description	A [mm]	G [mm]	Input	Output	Material	Weight [g]
1-230-40-00	LVT L M5	14	5 x M5	1	4	Aluminum	13
1-230-45-00	LVT X 1/8	30	5 x G1/8	1	4	Aluminum	50
1-230-50-00	LVT X 1/4	40	5 x G1/4	1	4	Aluminum	99

## Application examples AVI / VSA-VS2



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## VSA / Adapter for Suction Cups VN and Vacuum Cups VS

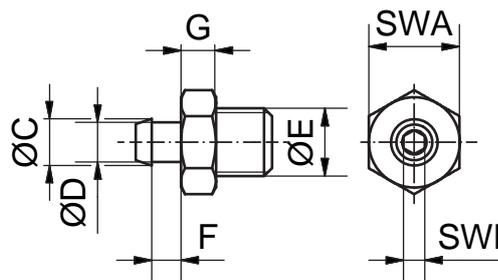
**Remarks:**

**Application: adapter for Suction Cups VN and Vacuum Cups VS**

- see table and category 220

**Scope of delivery:**

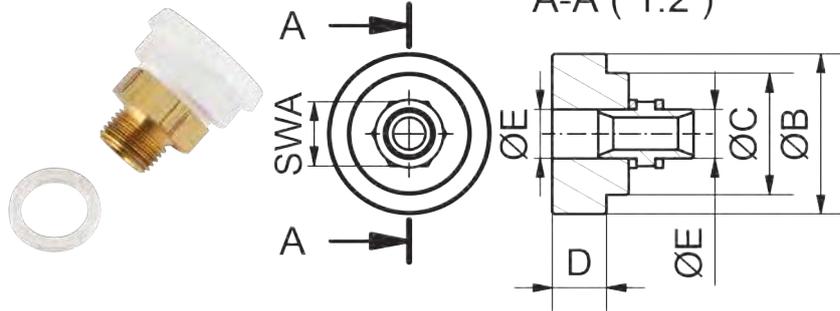
- does not include suction cup and clamp



Part No.	Description	suitable for Suction Cup	installed in Vacuum Cup	SWA [mm]	SWI [mm]	C [mm]	D [mm]	E [mm] ["°]	F [mm]	G [mm]	Material	Weight [g]
1-290-04-00	VSA 4	VN 2	VS 2	8	-	6	4	M3	2	5	Al	1
1-290-05-00	VSA 5	VN O / VN 2	VS O / VS 2	5		3	2	M3	1.5	2	Al	<1
1-290-10-00	VSA 10	VN 1	VS 1	7		3	2	M5	1.5	5	CuZn	2
1-290-15-00	VSA 15	VN O	VS O	8		6.5	5	M5	2	5	Al	1
1-290-16-00	VSA 16	VN 2 / VN 3	VS 2 / VS 3	7	-	6.5	5.8	M3	3.5	5	Al	1
1-290-17-00	VSA 17	VN 3	VS 3	8	-	4.5	4.2	M3	4	5	Al	1
1-290-20-00	VSA 20	VN O	VS O	13	3	7.5	6	G1/8	2	5	CuZn	10
1-290-25-00	VSA 30	VN 1 / VN 2 / VN 3	VS 1 / VS 2 / VS 3	7	2	6.2	4.2	M5	2	5	CuZn	3
1-290-30-00	VSA 40	VN 2 / VN 3	VS 2 / VS 3	7	2	6.6	5.7	M5	4.2	5	CuZn	3
1-290-35-00	VSA 50	VN 1	VS 1	13	3	9	5	G1/8	4.5	5	CuZn	36
1-290-40-00	VSA 60	VN 1 / VN 2	VS 1 / VS 2	13	4	10	6.5	G1/8	6.65	5	CuZn	10
1-290-45-00	VSA 70	VN 2 / VN 3	VS 2 / VS 3	13	3	6.7	5.7	G1/8	4.2	5	CuZn	10
1-290-50-00	VSA 80	VN 1 / VN 2	VS 1 / VS 2	13	5	14	9	G1/8	7	5	CuZn	11
1-290-55-00	VSA 90	VN 2 / VN 3	VS 2 / VS 3	13	5	13	9	G1/8	13	5	CuZn	13
1-290-60-00	VSA 100	VN 3	VS 3	17	6	18	13	G1/4	19	5	CuZn	33
1-290-65-00	VSA 110	VN 1 / VN 2	VS 1 / VS 2	17	5		M10x1.25	G1/4	10	5	CuZn	19
1-290-70-00	VSA 130	VN O	VS O	17	6	13.5	12	G1/4	7	5	CuZn	23

# 290 | Adapter

## AVS / Adapter for VAS-SBR

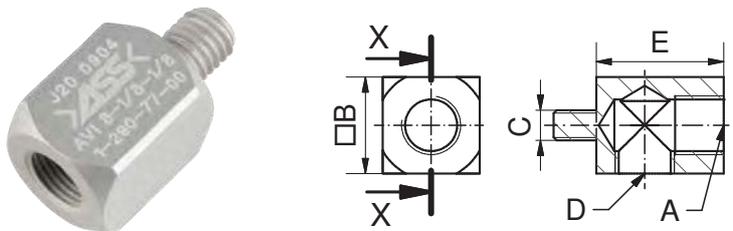


**Remarks:**

- adapter for suction cup VSN SBR
- installed in relative Vacuum Cups VAS SBR

Part No.	Description	SWA [mm]	B [mm]	C [mm]	D [mm]	E ["]	Material	Weight [g]
1-290-33-00	AVS 40	14	21	18	3.2	G1/8	CuZn/POM	14
1-290-47-00	AVS 70	17	42.5	32	14	G1/4	CuZn/POM	52

## AVI / Adapter, female



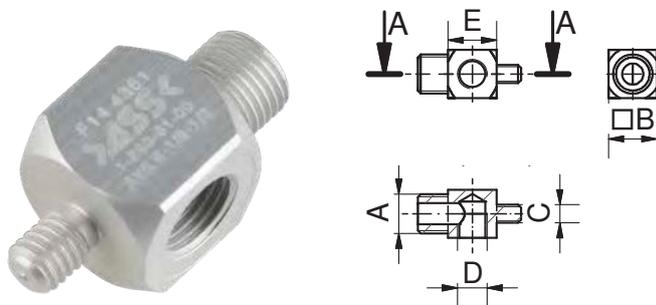
**Remarks:**

**Drawing:**

- A for mounting vacuum cups
- C for mounting on short stroke cylinder KHZ

Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-290-73-00	AVI 5-5-5	M5	8	M5	M5	12	Steel/zinc plated	5
1-290-75-00	AVI 3-5-5	M5	8	M3	M5	12	Steel/zinc plated	4
1-290-76-00	AVI M5-1/8-1/8	G1/8	16	M5	G1/8	21	Steel/zinc plated	30
1-290-77-00	AVI 8-1/8-1/8	G1/8	16	M8	G1/8	21	Aluminum	12
1-290-79-00	AVI 8-1/4-1/8	G1/4	16	M8	G1/8	26	Aluminum	12

## AVA / Adapter, male



**Remarks:**

**Drawing:**

- A for mounting vacuum cups
- C for mounting on short stroke cylinder KHZ

Part No.	Description	A ["]	B [mm]	C [mm]	D ["]	E [mm]	Material	Weight [g]
1-290-81-00	AVA 6-1/8-1/8	G1/8	16	M6	G1/8	16	Aluminum	10
1-290-83-00	AVA 8-1/8-1/8	G1/8	16	M8	G1/8	16	Aluminum	10
1-290-85-00	AVA 6-1/4-1/8	G1/4	16	M6	G1/8	16	Aluminum	32
1-290-87-00	AVA 8-1/4-1/8	G1/4	16	M8	G1/8	16	Aluminum	11

## VSA 2K / Adapter for 2-Component Suction and Vacuum Cups

### Remarks:

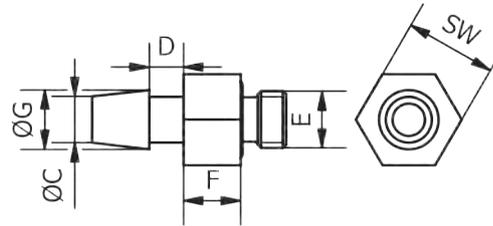
- adapter for suction cups VN 2K
- can be used with VN 2 2K and VN 3 2K (see table)

### Scope of Delivery:

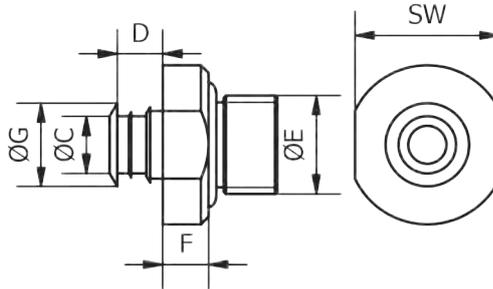
- every adapter comes with a seal ring

### Note \*1:

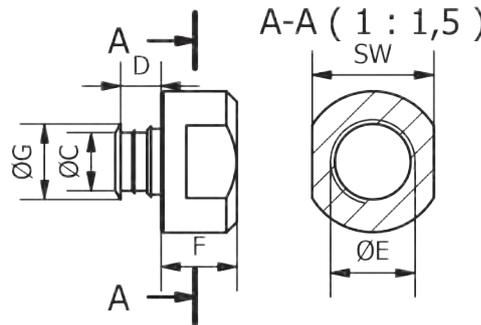
Adapters have to be reduced from G3/8 to G1/4 to work with ASS components. Use PDN 3/8-1/4, category 850.



1-290-90-00



1-290-91-00  
1-290-92-00



1-290-93-00

Part No.	Description	SW [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm]	G [mm]	Material
1-290-90-00	VSA 2K 15 M	8	4	3	M5	5	5.2	Aluminium
1-290-91-00	VSA 2K 20 M	13	7.5	4.5	G1/8	4	8	Aluminium
1-290-92-00	VSA 2K 40 M	19	9	6	G1/4	6	11	Aluminium
1-290-93-00	VSA 2K 50 F	24	11.5	8	G3/8	15	15	Aluminium

Part No.	Description	Connection	fits for Suction Cup	used in Vacuum Cup	Weight [g]
1-290-90-00	VSA 2K 15 M	M5	VN 2-15-2K	VS 2-15-2K5	1
1-290-91-00	VSA 2K 20 M	G 1/8	VN 2-20-2K VN 3-20-2K VN 3-30-2K	VS 2-20-2K8 VS 3-20-2K8 VS 3-30-2K8	2
1-290-92-00	VSA 2K 40 M	G 1/4	VN 2-30-2K VN 2-40-2K VN 3-40-2K	VS 2-30-2K4 VS 2-40-2K4 VS 3-40-2K4	7
1-290-93-00	VSA 2K 50 F	G 3/8*1	VN 2-50-2K VN 3-50-2K	VS 2-50-2K3-8 VS 3-50-2K3-8	17

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 290 | Adapter

## VSE / Vacuum Cup Inserts



**Remarks:**

**Application: prevents buckling, e.g. with warm plastic components or tempered FVK organo sheets**

- insert for vacuum cups
- temperature range from -50° to +260° Celsius in long-term use
- PEEK = Polyetheretherketone
- temperature-resistant, thermoplastic material
- optimal in combination with our HE vacuum cups (HE = High Temperature Elastomer)
- easy to use
- easy to install in compatible vacuum cups
- pictures may differ

**Application examples:**  
Left figure shows the application in the first bellow. If the application requires a stronger seal by the lip, the VSE also can be inserted into the second bellow (right figure).



Part No.	Description	compatible to Vacuum Cup/Suction Cup	Material	Weight [g]
1-291-10-00	VSE 2-10 PEEK	VN 2-10-HE VS 2-10-HE5	Polyetheretherketone	<1
1-291-20-00	VSE 3-10 PEEK	VN 3-10-HE VS 3-10-HE5 VS 3-10-HE8	Polyetheretherketone	<1
1-291-30-00	VSE 3-15 PEEK	VN 3-15-HE VS 3-15-HE5 VS 3-15-HE8	Polyetheretherketone	<1
1-291-40-00	VSE 2-15 PEEK	VN 2-15-HE VS 2-15-HE5 VS 2-15-HE8 VN 3-18-HE	Polyetheretherketone	<1
1-291-50-00	VSE 2-18 PEEK	VN 2-18-HE VS 2-18-HE5 VS 2-18-HE8	Polyetheretherketone	<1
1-291-60-00	VSE 3-20 PEEK	VN 3-20-HE VS 3-20-HE5 VS 3-20-HE8	Polyetheretherketone	1
1-291-70-00	VSE 2-23/3-25 PEEK	VN 2-23-HE VS 2-23-HE5 VS 2-23-HE8 VN 3-25-HE VS 3-25-HE5 VS 3-25-HE8	Polyetheretherketone	3
1-291-80-00	VSE 2/3-30 PEEK	VN 2-30-HE VS 2-30-HE8 VN 3-30-HE VS 3-30-HE8	Polyetheretherketone	5

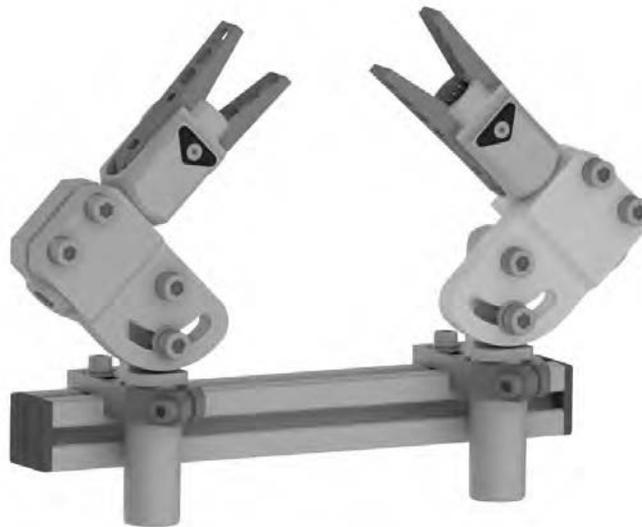
**App. example WKA**



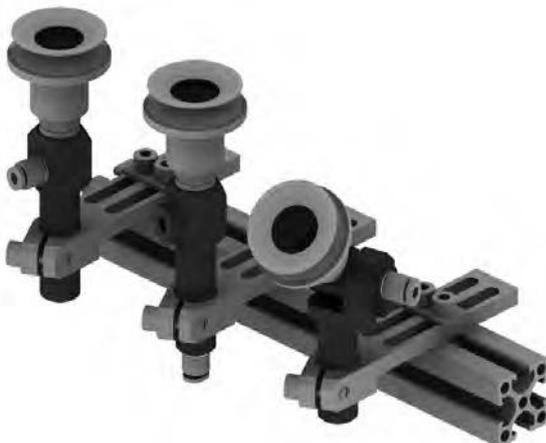
**App. example GLA / GLA-V**



**Application example GLA-V / GLA-VM**



**App. ex. GSE / GSE-U / GGE**



**App. ex. GAF / GAF U / GGS**



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

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Parallel Gripper

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Gripper Fingers

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PA-Forming  
Others

# 300 | Gripper Arms

## Application example GGK



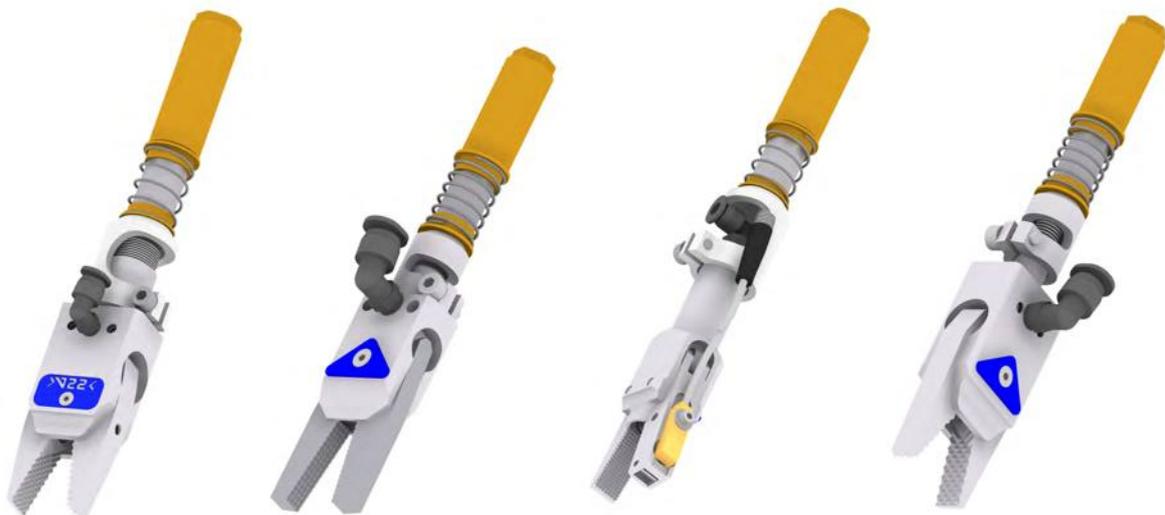
## Application example GGG 90



## Application example GGS W



## Application examples GGG



**Application example Blue Scale**

The combination of several Blue Scale elements (here WST BS and GLA-V BS) enables the most exact settings on the profile and e.g. is particularly suitable when using sensors.



**000**  
Quick Change Systems

**050**  
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Channel Nuts

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Connectors

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**850**  
Pneumatics

**990**  
Tubular System  
Micro System

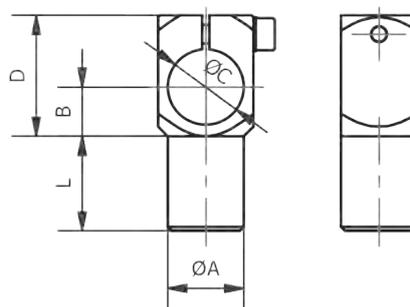
**990**  
PA-Forming  
Others

**SKS / Short Angle Arm**

**Remarks:**

**Application: e.g. for easy mounting of cylindrical components ob short distance**

- easy to handle
- various mounting options
- secure connection by cylinder screw



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-39-00	SKS 10-10	10	7	10	19	15	Aluminium	8
1-320-42-00	SKS 14-14	14	10	14	26	20	Aluminium	19
1-320-45-00	SKS 20-20	20	13	20	32	25	Aluminium	36
1-320-46-00	SKS 20-30	20	18	30	44	34	Aluminium	72
1-320-48-00	SKS 30-30	30	19	30	44	40	Aluminium	130

# 300 | Gripper Arms

## WKA / Angle Arm

### WKA BS / Angle Arm, Blue Scale

WKA



WKA BS



**Remarks:**

**Type WKA**

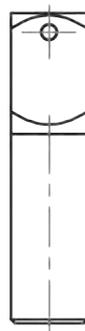
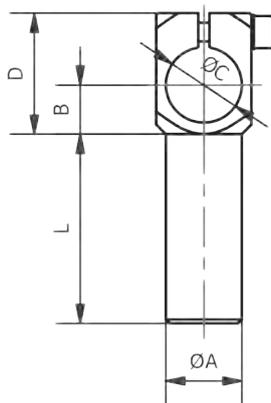
**Application: e.g. for easy mounting of cylindrical components**

- easy to handle
- various mounting options
- secure connection by cylinder screw
- WKA 20-14-100 including integrated set screw with tip for additional fixing

**Type WKA BS „Blue Scale“**

**Application: for exact mounting and replicable positioning of angles etc.**

- see above
- blue anodized
- with length- and angle-scales for exact positioning
- more Blue Scale parts are available for WST, GLA, GLA V and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-03-00	WKA 10-10-30	10	7	10	19	30	Aluminium	10
1-320-06-00	WKA 10-10-60	10	7	10	19	60	Aluminium	13
1-320-09-00	WKA 10-10-90	10	7	10	19	90	Aluminium	16
1-320-12-00	WKA 14-14-40	14	10	14	26	40	Aluminium	22
1-320-15-00	WKA 14-14-80	14	10	14	26	80	Aluminium	31
1-320-18-00	WKA 14-14-120	14	10	14	26	120	Aluminium	41
1-320-19-00	WKA 20-14-100	20	13	14	32	100	Aluminium	68
1-320-21-00	WKA 20-20-50	20	13	20	32	50	Aluminium	46
1-320-22-00	WKA 20-20-50 BS	20	13	20	32	50	Aluminium	46
1-320-24-00	WKA 20-20-100	20	13	20	32	100	Aluminium	61
1-320-25-00	WKA 20-20-100 BS	20	13	20	32	100	Aluminium	61
1-320-27-00	WKA 20-20-150	20	13	20	32	150	Aluminium	80
1-320-28-00	WKA 20-20-150 BS	20	13	20	32	150	Aluminium	80
1-320-30-00	WKA 30-30-80	30	19	30	44	80	Aluminium	176
1-320-33-00	WKA 30-30-140	30	19	30	44	140	Aluminium	276
1-320-36-00	WKA 30-30-200	30	19	30	44	200	Aluminium	348

## GLA / Elbow Gripper Arm

### GLA BS / Elbow Gripper Arm, Blue Scale

**Remarks:**

**Type GLA**

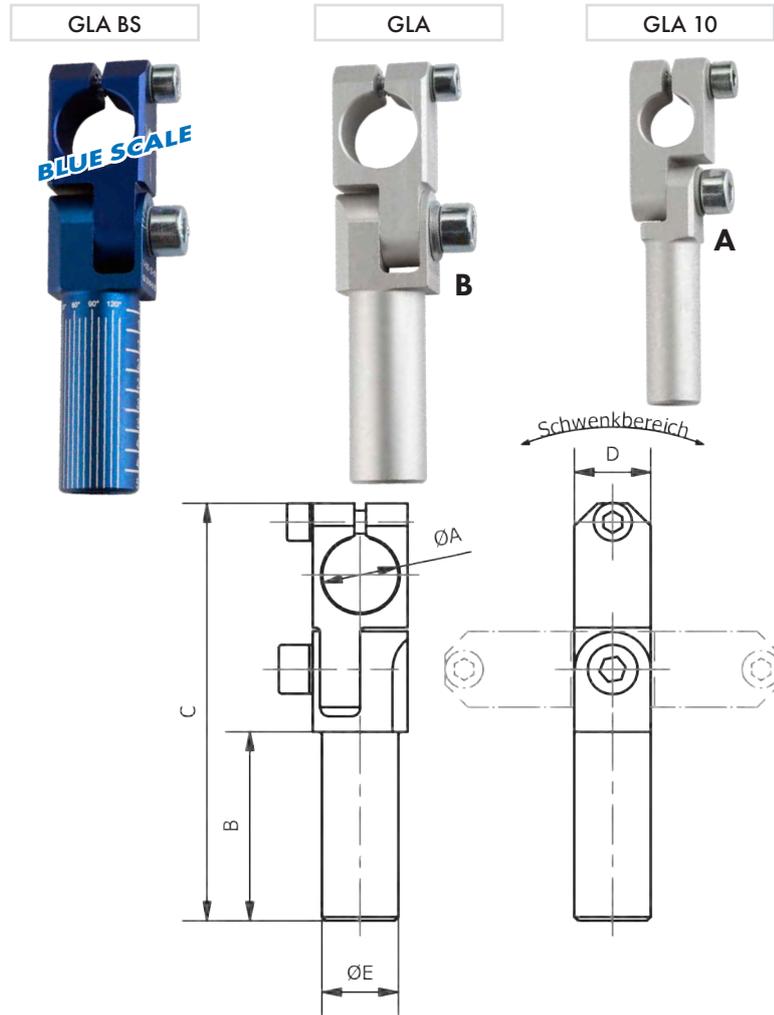
**Application: e.g. for clamping grippers or vacuum cups at an angle**

- swivel locking mechanism improved from on Ø 14
- swivel locking mechanism is stronger and holds the clamp head keeping in place
- gripper arm made of anodized aluminium
- high degree of flexibility +/- 90°
- » image A shows size 10 series
- » image B from on Ø 14 series

**Type GLA BS „Blue Scale“**

**Application: for exact mounting and replicable positioning of angles etc.**

- » see above
- » blue anodized
- » with length- and angle-scales for exact positioning
- » more Blue Scale parts are available for WST, WKA, GLA V and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-325-03-00	GLA10-10-30	10	30	64	10	10	+/-90	Al	17
1-325-06-00	GLA10-10-60	10	60	94	10	10	+/-90	Al	20
1-325-09-00	GLA10-10-90	10	90	124	10	10	+/-90	Al	23
1-325-12-00	GLA14-14-40	14	40	86	14	14	+/-90	Al	39
1-325-15-00	GLA14-14-80	14	80	126	14	14	+/-90	Al	48
1-325-18-00	GLA14-14-120	14	120	166	14	14	+/-90	Al	58
1-325-21-00	GLA20-20-50	20	50	110,5	20	20	+/-90	Al	92
1-325-22-00	GLA 20-20-50 BS	20	50	110,5	20	20	+/-90	Al	92
1-325-24-00	GLA20-20-100	20	100	160,5	20	20	+/-90	Al	107
1-325-25-00	GLA 20-20-100 BS	20	100	160,5	20	20	+/-90	Al	107
1-325-27-00	GLA20-20-150	20	150	210,5	20	20	+/-90	Al	126
1-325-28-00	GLA 20-20-150 BS	20	150	210,5	20	20	+/-90	Al	126
1-325-30-00	GLA20-30-50	30	50	125,5	28	20	+/-90	Al	149
1-325-33-00	GLA20-30-100	30	100	175,5	28	20	+/-90	Al	163
1-325-36-00	GLA20-30-150	30	150	225,5	28	20	+/-90	Al	183
1-325-39-00	GLA30-30-80	30	80	161,5	30	30	+/-90	Al	295
1-325-42-00	GLA30-30-140	30	140	221,5	30	30	+/-90	Al	338
1-325-45-00	GLA30-30-200	30	200	281,5	30	30	+/-90	Al	432

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
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Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

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Special Elements

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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 300 | Gripper Arms

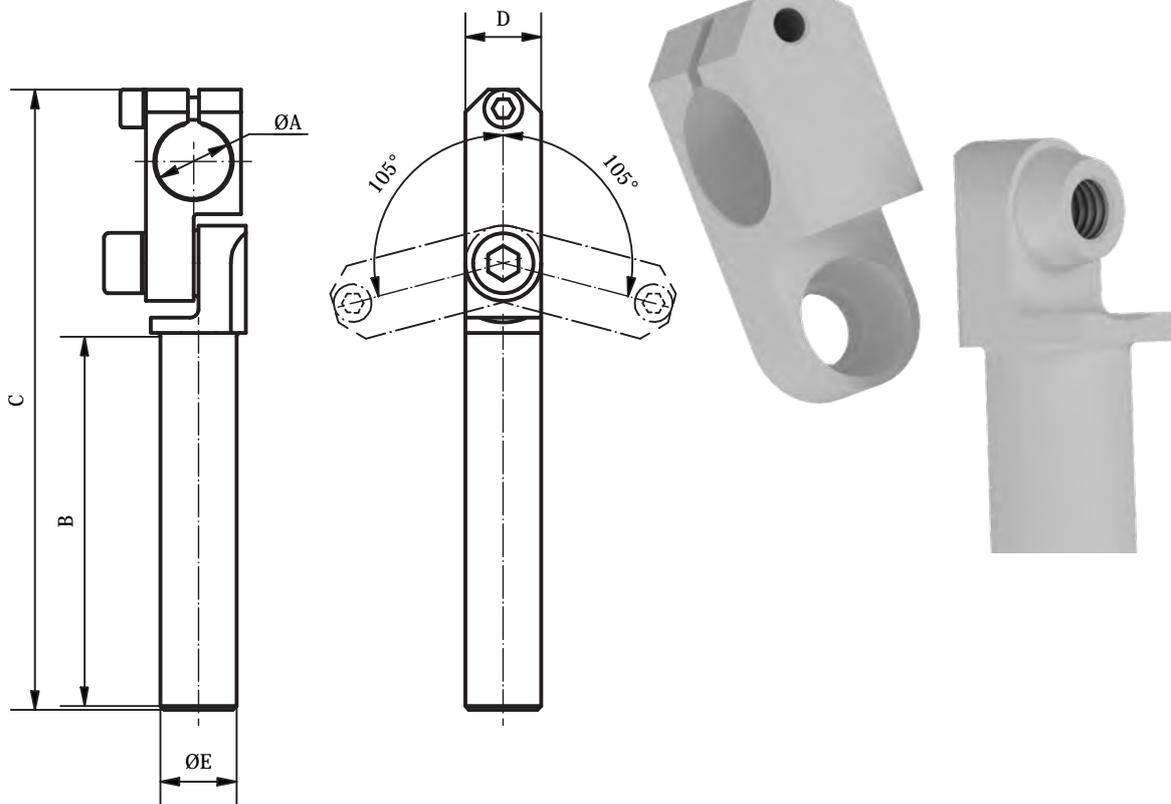
## GLA K / Elbow Gripper Arm, conical clamping



**Remarks:**

**Application: e.g. for clamping grippers or vacuum cups at an angle**

- improved clamping force through conical clamping
- Anodized aluminum gripper arm
- high flexibility due to the swivel range of +/- 105°
- Various clamping diameters and lengths for the widest possible range of applications



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-324-21-00	GLA K 20-20-50	20	50	114.5	20	20	+/-105	Al	120
1-324-24-00	GLA K 20-20-100	20	100	164.5	20	20	+/-105	Al	135
1-324-27-00	GLA K 20-20-150	20	150	214.5	20	20	+/-105	Al	154
1-324-30-00	GLA K 20-30-50	20	50	129.5	28	20	+/-105	Al	177
1-324-33-00	GLA K 20-30-100	20	100	179.5	28	20	+/-105	Al	191
1-324-36-00	GLA K 20-30-150	20	150	229.5	28	20	+/-105	Al	211
1-324-39-00	GLA K 30-30-80	30	80	165.5	30	30	+/-105	Al	323
1-324-42-00	GLA K 30-30-140	30	140	225.5	30	30	+/-105	Al	366
1-324-45-00	GLA K 30-30-200	30	200	285.5	30	30	+/-105	Al	460

## GLA V / Elbow Gripper Arm, heavy duty

### GLA V BS / Elbow Gripper Arm, heavy duty, Blue Scale

**Remarks:**

**Type GLA V**

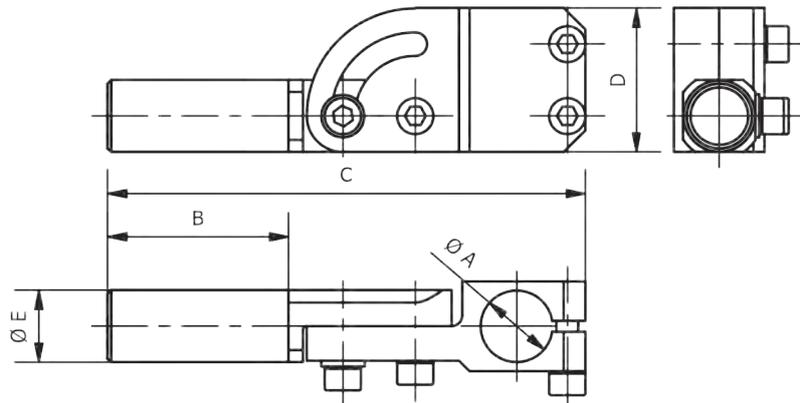
**Application:** e.g. for clamping grippers or vacuum cups at an angle

- reinforced version with extra high clamping force
- angle adjustment and clamping by 2 screws
- high flexibility: swivel range +/- 90°
- for high load

**Type GLA V BS „Blue Scale“**

**Application:** for exact mounting and replicable positioning of angles etc.

- » see above
- » blue anodized
- » with length- and angle-scales for exact positioning
- » more Blue Scale parts are available for WST, WKA, GLA and ASZ KS



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-325-53-00	GLA V 10-10-30	10	30	74	20	10	0-90	Aluminium	27
1-325-56-00	GLA V 10-10-60	10	60	104	20	10	0-90	Aluminium	30
1-325-59-00	GLA V 10-10-90	10	90	134	20	10	0-90	Aluminium	33
1-325-62-00	GLA V 14-14-40	14	40	99	28	14	0-90	Aluminium	63
1-325-65-00	GLA V 14-14-80	14	80	139	28	14	0-90	Aluminium	72
1-325-68-00	GLA V 14-14-120	14	120	179	28	14	0-90	Aluminium	82
1-325-71-00	GLA V 20-20-50	20	50	129	40	20	0-90	Aluminium	154
1-325-72-00	GLA V 20-20-50 BS	20	50	129	40	20	0-90	Aluminium	154
1-325-74-00	GLA V 20-20-100	20	100	179	40	20	0-90	Aluminium	169
1-325-75-00	GLA V 20-20-100 BS	20	100	179	40	20	0-90	Aluminium	169
1-325-77-00	GLA V 20-20-150	20	150	229	40	20	0-90	Aluminium	190
1-325-78-00	GLA V 20-20-150 BS	20	150	229	40	20	0-90	Aluminium	190
1-325-89-00	GLA V 30-30-80	30	80	190	60	30	0-90	Aluminium	493
1-325-92-00	GLA V 30-30-140	30	140	250	60	30	0-90	Aluminium	568
1-325-95-00	GLA V 30-30-200	30	200	310	60	30	0-90	Aluminium	627

**000**  
Quick Change Systems

**050**  
Profiles  
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**100/115**  
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Pneumatics

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Tubular System  
Micro System

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PA-Forming  
Others

# 300 | Gripper Arms

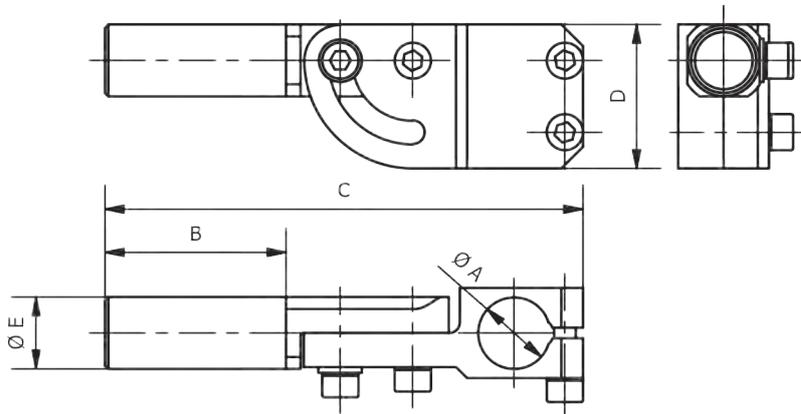
## GLA VM/ Elbow Gripper Arm, heavy duty, mirrored



**Remarks:**

**Application:** In combination with the GLA V it is easily possible to build mirror-imaged robot hands.

- increases the ease of installation
- mirrored design of the GLA V
- allows better setting options in a robot hand
- clamping diameter as standard Elbow Gripper Arm
- angle adjustment and clamping by 2 screws
- for high load



Application example shows the combination of GLA V and the mirrored version, the GLA VM.

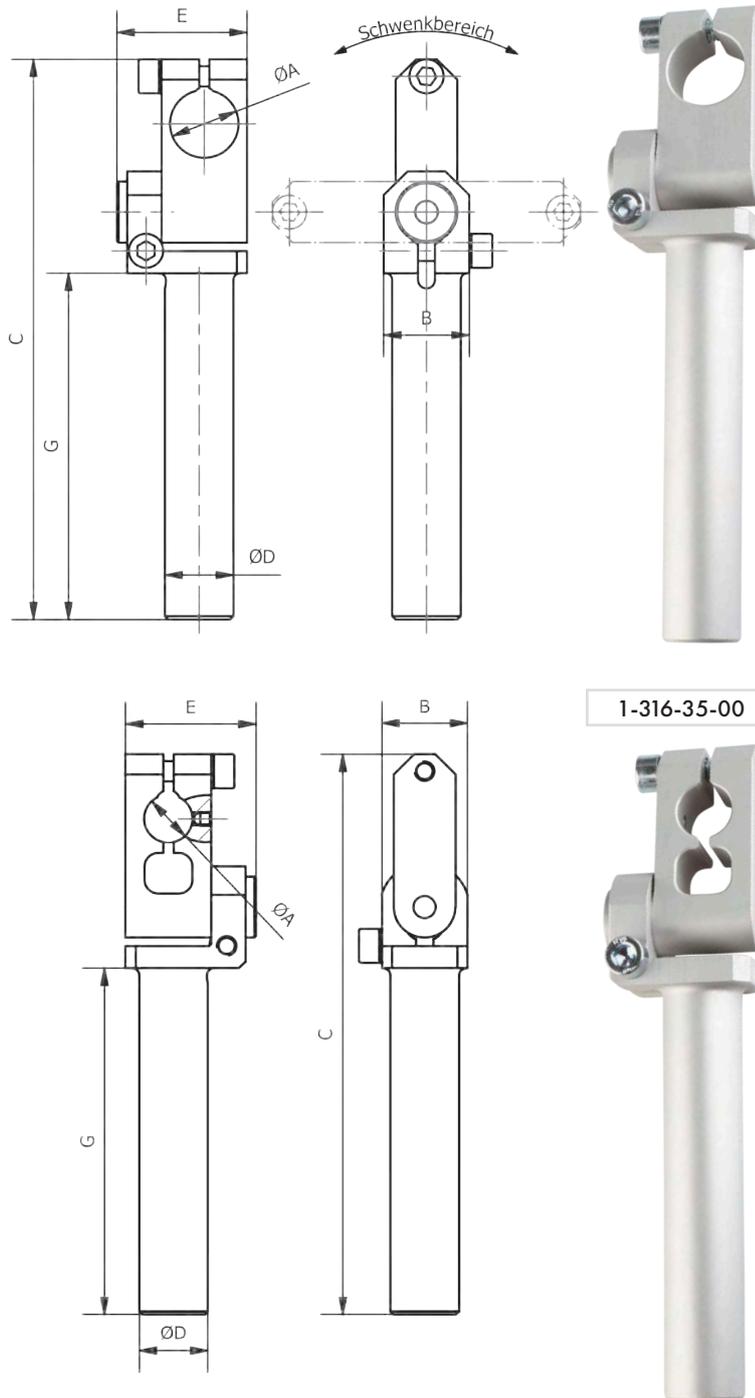
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Swivel area [°]	Material	Weight [g]
1-327-53-00	GLA VM 10-10-30	10	30	74	20	10	0-90	Aluminium	27
1-327-56-00	GLA VM 10-10-60	10	60	104	20	10	0-90	Aluminium	30
1-327-59-00	GLA VM 10-10-90	10	90	134	20	10	0-90	Aluminium	33
1-327-62-00	GLA VM 14-14-40	14	40	99	28	14	0-90	Aluminium	63
1-327-65-00	GLA VM 14-14-80	14	80	139	28	14	0-90	Aluminium	72
1-327-68-00	GLA VM 14-14-120	14	120	179	28	14	0-90	Aluminium	82
1-327-71-00	GLA VM 20-20-50	20	50	129	40	20	0-90	Aluminium	154
1-327-74-00	GLA VM 20-20-100	20	100	179	40	20	0-90	Aluminium	169
1-327-77-00	GLA VM 20-20-150	20	150	229	40	20	0-90	Aluminium	190
1-327-89-00	GLA VM 30-30-80	30	80	190	60	30	0-90	Aluminium	493
1-327-92-00	GLA VM 30-30-140	30	140	250	60	30	0-90	Aluminium	568
1-327-95-00	GLA VM 30-30-200	30	200	310	60	30	0-90	Aluminium	627

## GGW / Gripper Arm, +/-90 degree

**Remarks:**

**Application:** e.g. for clamping grippers or vacuum cups at a special angle

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- GGW 20-14-100 including integrated set screw with tip for additional fixing



1-316-35-00

Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	E [mm]	G [mm]	Material	Weight [g]
1-316-03-00	GGW 10-10-30	10	15	67	10	23	30	Aluminium	20
1-316-06-00	GGW 10-10-60	10	15	97	10	23	60	Aluminium	24
1-316-09-00	GGW 10-10-90	10	15	127	10	23	90	Aluminium	27
1-316-21-00	GGW 14-14-40	14	20	88	14	30	40	Aluminium	46
1-316-24-00	GGW 14-14-80	14	20	130	14	30	80	Aluminium	55
1-316-27-00	GGW 14-14-120	14	20	168	14	30	120	Aluminium	63
1-316-35-00	GGW 20-14-100	14	25	165	20	38	100	Aluminium	111
1-316-39-00	GGW 20-20-50	20	25	114	20	38	50	Aluminium	96
1-316-42-00	GGW 20-20-100	20	25	165	20	38	100	Aluminium	112
1-316-45-00	GGW 20-20-150	20	25	214	20	38	150	Aluminium	127

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**190**  
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Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

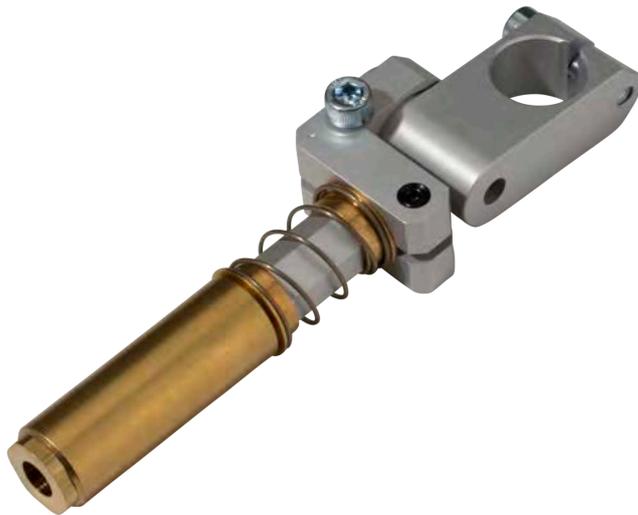
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 300 | Gripper Arms

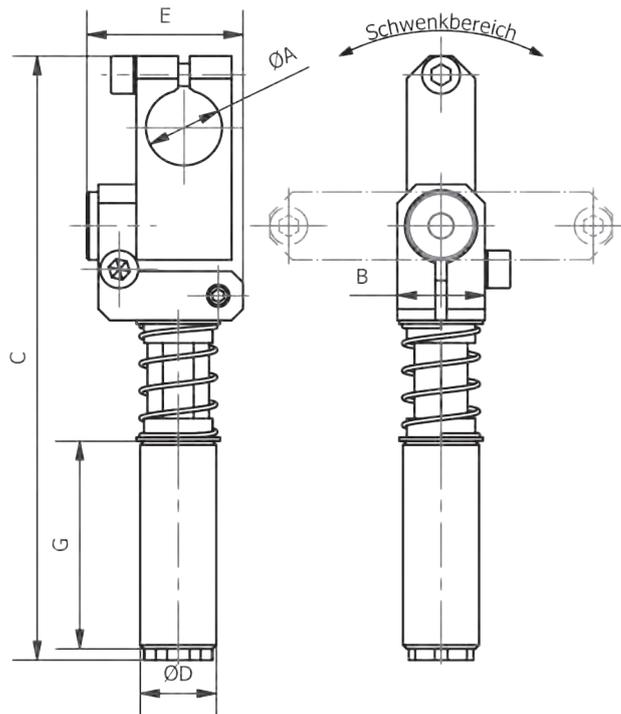
### GGW W / Gripper Arm, spring comp., lock. against rotation, +/-90°



**Remarks:**

**Application: e.g. for clamping a grippers at a special angle**

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- spring loaded to compensate ejector travel
- locked against rotation



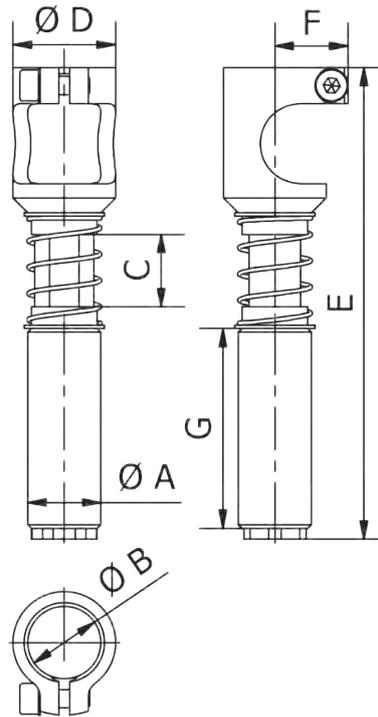
Part No.	Description	Ø A [mm]	B [mm]	C [mm]	Ø D [mm]	E [mm]	Spring travel F [mm]	G [mm]	Material	Weight [g]
1-362-03-00	GGW W 10-10-10	10	14	87	10	24	10	25	Al/CuZn	44
1-362-09-00	GGW W 14-14-15	14	18	114	14	33	15	32	Al/CuZn	79
1-362-15-00	GGW W 14-14-40	14	18	139	14	33	40	32	Al/CuZn	83
1-362-21-00	GGW W 20-20-20	20	23	160	20	41	20	55	Al/CuZn	193
1-362-22-00	GGW W 20-10-20	10	23	160	20	41	20	55	Al/CuZn	204
1-362-27-00	GGW W 20-20-50	20	23	190	20	41	50	55	Al/CuZn	200
1-362-28-00	GGW W 20-10-50	10	23	190	20	41	50	55	Al/CuZn	234

## GGG / Gripper Arm, spring comp., locked against rot., for GRZ

**Remarks:**

**Application:** e.g. for mounting grippers GRZ in x-axis (ejection direction)

- new: axial hose passage possible
- GGG 14 compatible to:
  - GRZ 10-12 series
  - GRZ 14 with adapter AD 10
  - GRZ 14
- GGG 20 compatible to:
  - GRZ 20-16 series
  - GRZ 20-20



1-363-09-00  
1-363-21-00  
1-363-27-00

1-363-12-00  
1-363-24-00  
1-363-30-00



Part No.	Description	A [mm]	B [mm]	C Spring travel [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-363-09-00	GGG 14-10-15	14	10	15	16	82,5	12,5	32	43
1-363-12-00	GGG M14-10-15	M14x1	10	15	16	82,5	12,5	32	54
1-363-21-00	GGG 20-20-20	20	20	20	28	130	20	55	134
1-363-24-00	GGG M20-20-20	M20x1,5	20	20	28	130	20	55	156
<b>New</b> 1-363-27-00	GGG 20-20-50	20	20	50	28	160	20	55	142
<b>New</b> 1-363-30-00	GGG M20-20-50	M20x1,5	20	50	28	160	20	55	186

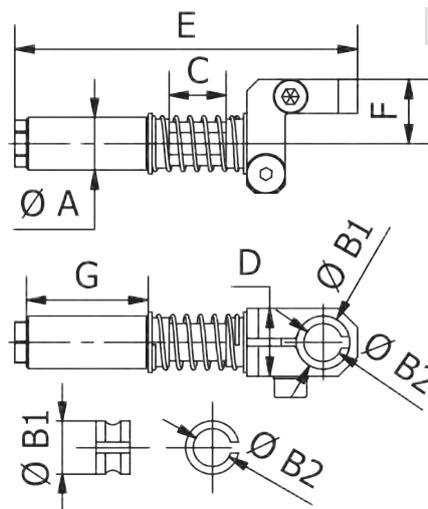
## GGG 90 / Gripper Arm, spring comp., lock against rot., for GRZ, 90°

**Remarks:**

**Application:** e.g. for mounting grippers GRZ in an angle of 90°

- GGG 90 14 compatible to:
  - GRZ 10-12 series
  - GRZ 14 with adapter AD 10
  - GRZ 14

**Attention: GGK is needed for application with high moments of force!**



1-364-09-00

1-364-12-00



Part No.	Description	A [mm]	B1 [mm]	B2 [mm]	C Spring travel [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-364-09-00	GGG 90 14-10-15	14	14	10	15	18	90	17	32	56
1-364-12-00	GGG 90 M14-10-15	M14x1	14	10	15	18	90	17	32	67

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Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 300 | Gripper Arms

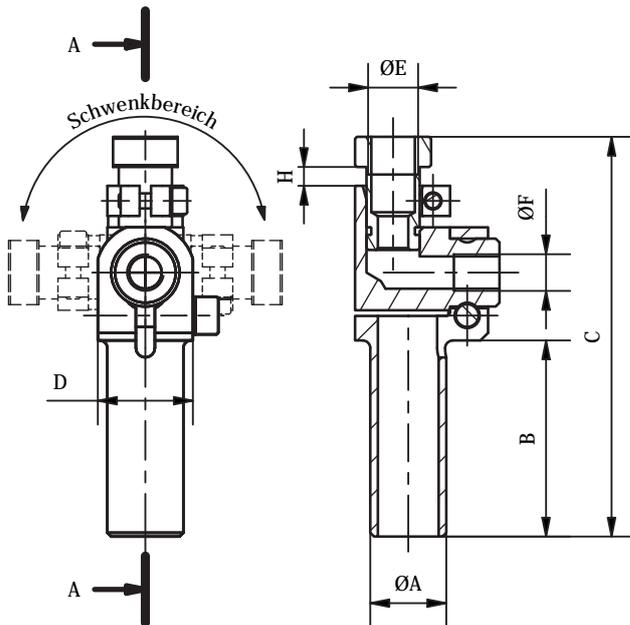
## GGO / Gripper Arm for Oval Vacuum Cups



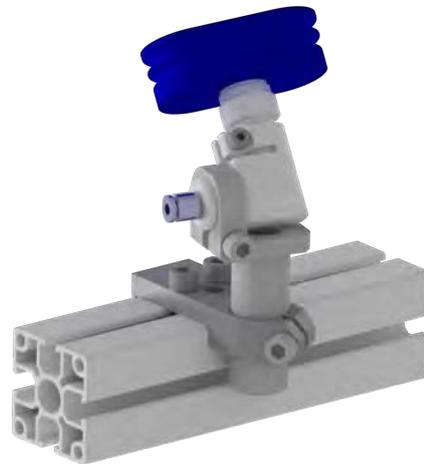
**Remarks:**

**Application: e.g. for mounting vacuum cups in an angled position**

- head can be swiveled by +/- 90°
- swivelable head can be tightened by a separated screw
- fine adjustment through the height-adjustable center piece
- the angle of the oval suction cup can be adjusted using a clamping screw



Application example



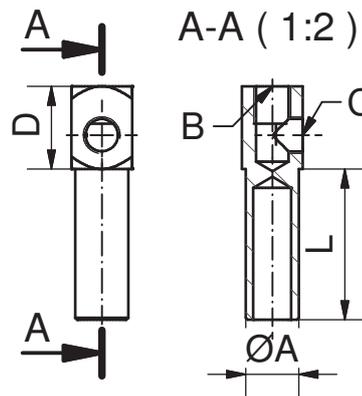
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [°]	F [°]	H [mm]	Weight [g]
1-314-39-00	GGO 20-1/4-1/8-50	20	50	101-106	25	G1/4	G1/8	0-5	80
1-314-42-00	GGO 20-1/4-1/8-100	20	100	151-156	25	G1/4	G1/8	0-5	95
1-314-45-00	GGO 20-1/4-1/8-150	20	150	201-206	25	G1/4	G1/8	0-5	111

## GSE / Gripper Arm for Suction Cups with air connection

**Remarks:**

**Application: for mounting vacuum cups to the robot hand**

- vacuum connection sidewise
- position of the vacuum cup can be infinitely adjusted in depth
- also available with external thread on request



Part No.	Description	A [mm]	B [mm] ["]	C [mm] ["]	D [mm]	L [mm]	Weight [g]
1-310-03-00	GSE 10-M5-M5-30	10	M5	M5	16	30	7
1-310-06-00	GSE 10-M5-M5-60	10	M5	M5	16	60	10
1-310-09-00	GSE 10-M5-M5-90	10	M5	M5	16	90	14
1-310-21-00	GSE 10-1/8-M5-30	10	G1/8	M5	16	30	9
1-310-24-00	GSE 10-1/8-M5-60	10	G1/8	M5	16	60	12
1-310-27-00	GSE 10-1/8-M5-90	10	G1/8	M5	16	90	16
1-310-40-00	GSE 14-1/8-1/8-40	14	G1/8	G1/8	22	40	20
1-310-43-00	GSE 14-1/8-1/8-80	14	G1/8	G1/8	22	80	28
1-310-46-00	GSE 14-1/8-1/8-120	14	G1/8	G1/8	22	120	38
1-310-60-00	GSE 20-1/4-1/8-50	20	G1/4	G1/8	23	50	36
1-310-63-00	GSE 20-1/4-1/8-100	20	G1/4	G1/8	23	100	51
1-310-66-00	GSE 20-1/4-1/8-150	20	G1/4	G1/8	23	150	69
1-310-78-00	GSE 30-1/4-1/4-80	30	G1/4	G1/4	30	80	122
1-310-81-00	GSE 30-1/4-1/4-140	30	G1/4	G1/4	30	140	169
1-310-84-00	GSE 30-1/4-1/4-200	30	G1/4	G1/4	30	200	254

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Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
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Vacuum Cups

**300**  
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**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 300 | Gripper Arms

## GSE U / Gripper Arm for Vacuum Cups, with air duct



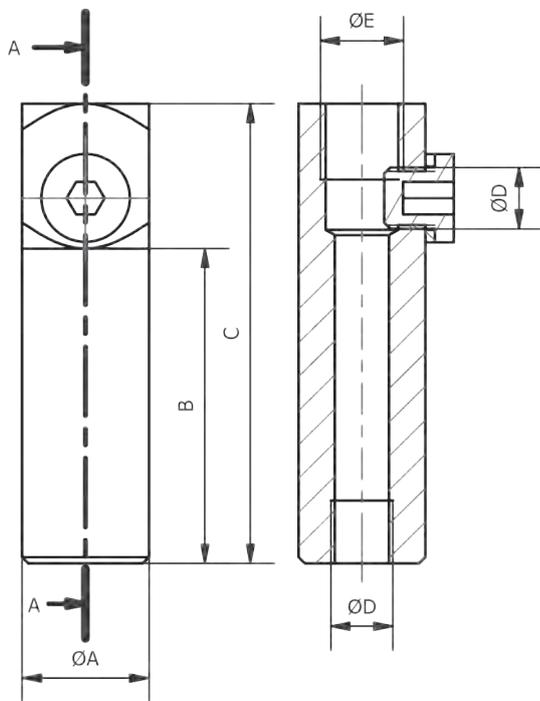
**Remarks:**

**Application: for mounting vacuum cups to the robot hand**

- vacuum connection sideways or air duct
- also available with external thread on request

**Scope of delivery:**

- sealing screw included



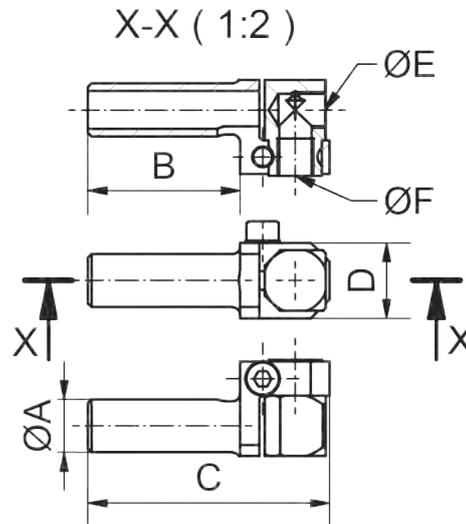
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-311-00-00	GSE U 10-M5-M5-30	10	30	46	M5	M5	Aluminum	11
1-311-01-00	GSE U 10-M5-M5-60	10	60	76	M5	M5	Aluminum	16
1-311-02-00	GSE U 10-M5-M5-90	10	90	106	M5	M5	Aluminum	21
1-311-03-00	GSE U 10-1/8-M5-30	10	30	45	M5	G1/8	Aluminum	13
1-311-04-00	GSE U 10-1/8-M5-60	10	60	75	M5	G1/8	Aluminum	18
1-311-05-00	GSE U 10-1/8-M5-90	10	90	105	M5	G1/8	Aluminum	23
1-311-06-00	GSE U 14-1/8-1/8-40	14	40	62	G1/8	G1/8	Aluminum	27
1-311-07-00	GSE U 14-1/8-1/8-80	14	80	102	G1/8	G1/8	Aluminum	37
1-311-08-00	GSE U 14-1/8-1/8-120	14	120	142	G1/8	G1/8	Aluminum	48
1-311-09-00	GSE U 20-1/4-1/8-50	20	50	73	G1/8	G1/4	Aluminum	59
1-311-10-00	GSE U 20-1/4-1/8-100	20	100	123	G1/8	G1/4	Aluminum	94
1-311-11-00	GSE U 20-1/4-1/8-150	20	150	173	G1/8	G1/4	Aluminum	130

## GGE / Swivel Head Gripper Arm for Vacuum Cups

**Remarks:**

**Application: for mounting vacuum cups at an angle**

- swivel head can be clamped separately by cylinder screw
- air connection (F) on the side



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm] ["]	F [mm] ["]	Material	Weight [g]
1-315-03-00	GGE 10-M5-M5-30	10	30	48	15	M5	M5	Al	14
1-315-06-00	GGE 10-M5-M5-60	10	60	78	15	M5	M5	Al	17
1-315-09-00	GGE 10-M5-M5-90	10	90	108	15	M5	M5	Al	21
1-315-21-00	GGE 14-1/8-1/8-40	14	40	65	20	G1/8	G1/8	Al	30
1-315-24-00	GGE 14-1/8-1/8-80	14	80	105	20	G1/8	G1/8	Al	39
1-315-27-00	GGE 14-1/8-1/8-120	14	120	145	20	G1/8	G1/8	Al	47
1-315-39-00	GGE 20-1/4-1/4-50	20	50	82	25	G1/4	G1/4	Al	61
1-315-42-00	GGE 20-1/4-1/4-100	20	100	132	25	G1/4	G1/4	Al	76
1-315-45-00	GGE 20-1/4-1/4-150	20	150	182	25	G1/4	G1/4	Al	92

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Profile  
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Nipper Blades

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Sensors

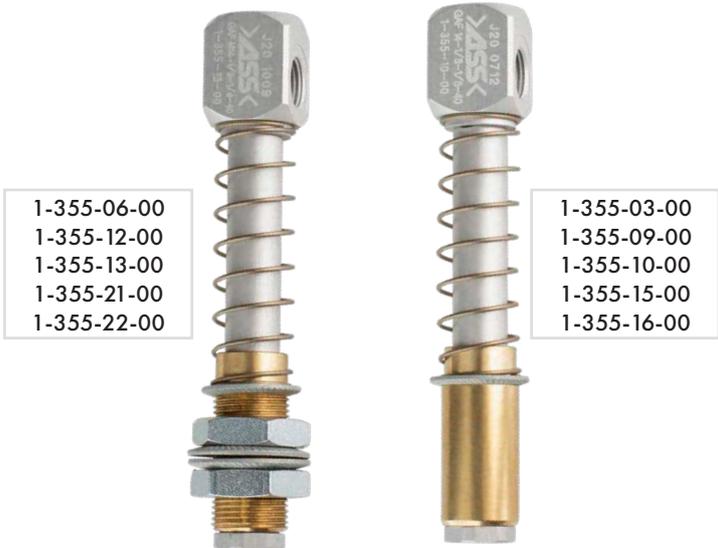
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 300 | Gripper Arms

## GAF / Spring Compensated Gripper Arm for Vacuum Cups



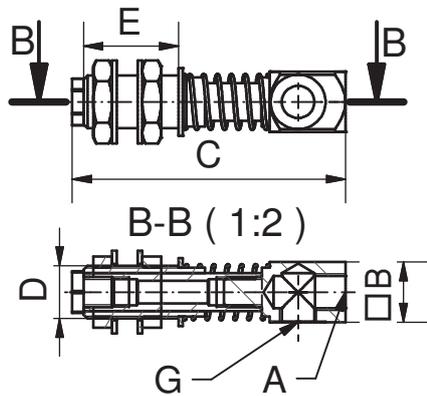
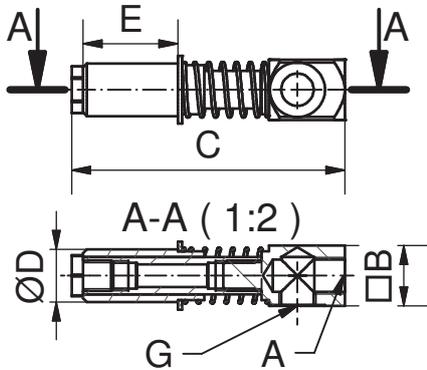
1-355-06-00  
1-355-12-00  
1-355-13-00  
1-355-21-00  
1-355-22-00

1-355-03-00  
1-355-09-00  
1-355-10-00  
1-355-15-00  
1-355-16-00

**Remarks:**

**Application: for mounting vacuum cups in the robot hand**

- vacuum connection can only be mounted sidewise
- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



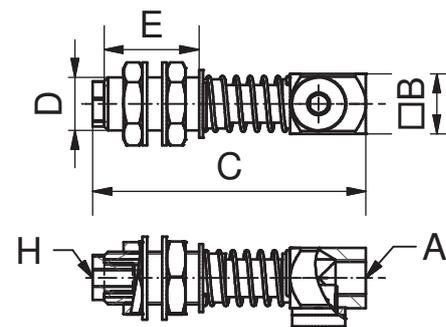
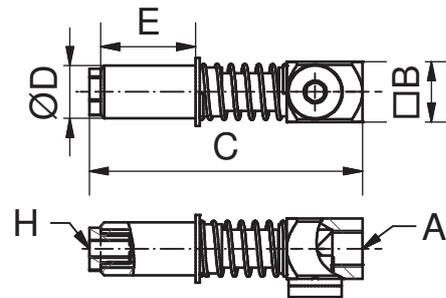
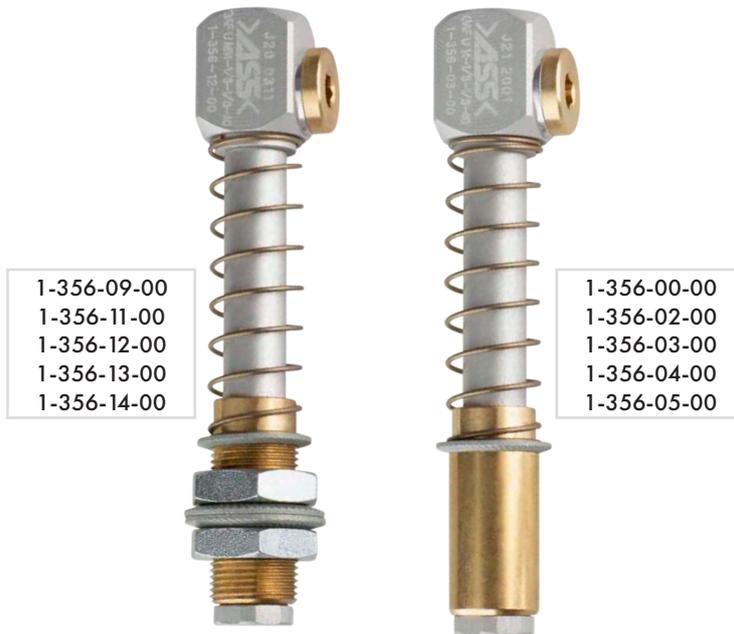
Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm] ["]	Spring travel [mm]	Material	Weight [g]
1-355-03-00	GAF 10-M5-M5-10	M5	10	58	10	25	M5	10	St/CuZn	18
1-355-06-00	GAF M10-M5-M5-10	M5	10	58	M10x1	25	M5	10	St/CuZn	23
1-355-09-00	GAF 14-1/8-1/8-15	G1/8	16	72	14	25	G1/8	15	Al/CuZn	38
1-355-10-00	GAF 14-1/8-1/8-40	G1/8	16	97	14	25	G1/8	40	Al/CuZn	42
1-355-12-00	GAF M14-1/8-1/8-15	G1/8	16	72	M14x1	25	G1/8	15	Al/CuZn	51
1-355-13-00	GAF M14-1/8-1/8-40	G1/8	16	97	M14x1	25	G1/8	40	Al/CuZn	54
1-355-15-00	GAF 20-1/4-1/8-20	G1/4	20	109	20	50	G1/8	20	Al/CuZn	111
1-355-16-00	GAF 20-1/4-1/8-50	G1/4	20	139	20	50	G1/8	50	Al/CuZn	115
1-355-21-00	GAF M20-1/4-1/8-20	G1/4	20	109	M20x1.5	50	G1/8	20	Al/CuZn	133
1-355-22-00	GAF M20-1/4-1/8-50	G1/4	20	139	M20x1.5	50	G1/8	50	Al/CuZn	140

## GAF U / Spring Comp. Gripper Arm for Vacuum Cups, with air duct

**Remarks:**

**Application: for mounting vacuum cups in the gripper hand**

- vacuum connection can be mounted sidewise or at the end of the gripper arm
- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	Spring travel [mm]	Material	Weight [g]
1-356-00-00	GAF U 10-M5-M5-10	M5	10	63	10	25	M5	10	St/CuZn	21
1-356-09-00	GAF U M10-M5-M5-10	M5	10	63	M10x1	25	M5	10	St/CuZn	25
1-356-02-00	GAF U 14-1/8-1/8-15	G1/8	16	72	14	25	M5	15	Al/CuZn	44
1-356-03-00	GAF U 14-1/8-1/8-40	G1/8	16	97	14	25	M5	40	Al/CuZn	48
1-356-11-00	GAF U M 4-1/8-1/8-15	G1/8	16	72	M14x1	25	M5	15	Al/CuZn	57
1-356-12-00	GAF U M14-1/8-1/8-40	G1/8	16	97	M14x1	25	M5	40	Al/CuZn	62
1-356-04-00	GAF U 20-1/4-1/8-20	G1/4	20	109	20	50	G1/8	20	Al/CuZn	115
1-356-05-00	GAF U 20-1/4-1/8-50	G1/4	20	139	20	50	G1/8	50	Al/CuZn	123
1-356-13-00	GAF U M20-1/4-1/8-20	G1/4	20	109	M20x1,5	50	G1/8	20	Al/CuZn	138
1-356-14-00	GAF U M20-1/4-1/8-50	G1/4	20	139	M20x1,5	50	G1/8	50	Al/CuZn	145

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**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 300 | Gripper Arms

## GFV U /Gripper Arm, spring comp., lock. ag. rotation, w. air duct

Image 1

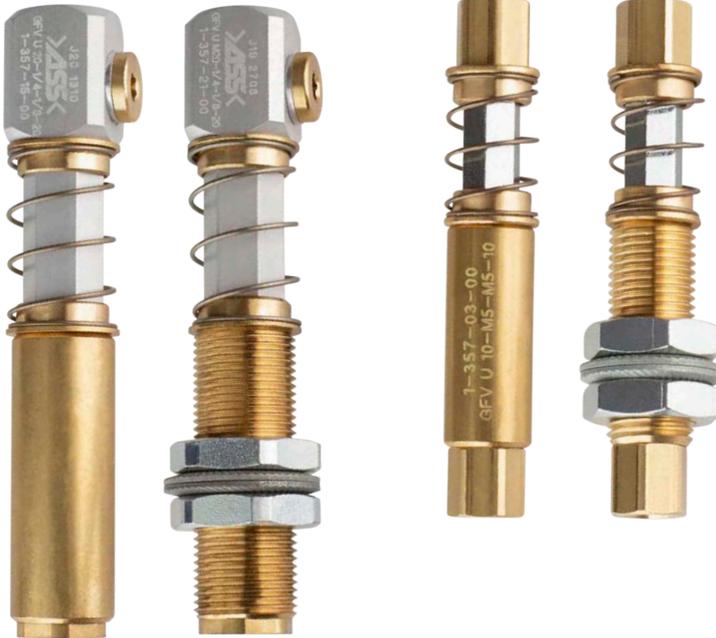
Image 2

1-357-09-00  
1-357-15-00

1-357-12-00  
1-357-21-00

1-357-03-00

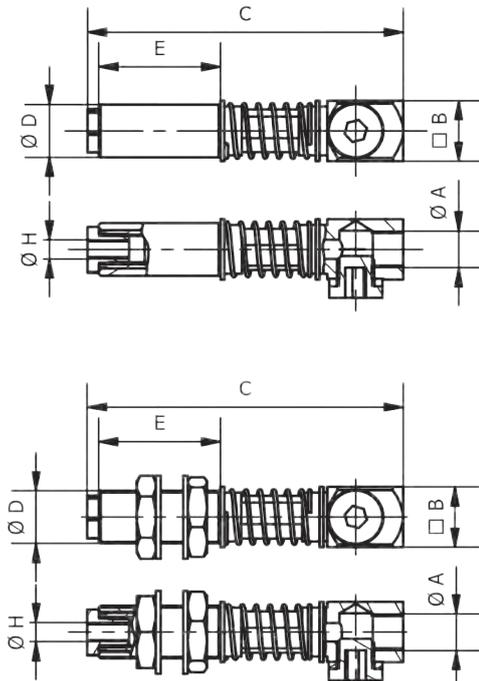
1-357-06-00



**Remarks:**

**Application: for connecting vacuum cups in the robot hand**

- suitable for oval vacuum cups
- locked against rotation by hexagonal guide
- high quality stainless steel spring
- vacuum connection can be mounted either on the side or at the end of the gripper arm
- » Exception:  
GFV U 10 (both versions) only air feedthrough possible (Image 2)



Part No.	Description	A [mm] ["]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm] ["]	Spring travel [mm]	Material	Weight [g]
1-357-03-00	GFV U 10-M5-M5-10	M5	10	59	10	25	M5	10	Al/St/CuZn	23
1-357-06-00	GFV U M10-M5-M5-10	M5	10	59	M10x1	25	M5	10	Al/St/CuZn	28
1-357-09-00	GFV U 14-1-8-1-8-15	G1/8	16	83	14	32	M5	15	Al/CuZn	50
1-357-12-00	GFV U M14-1-8-1-8-15	G1/8	16	83	M14x1	32	M5	15	Al/CuZn	62
1-357-15-00	GFV U 20-1-4-1-8-20	G1/4	20	121	20	55	G1/8	20	Al/CuZn	127
1-357-21-00	GFV U M20-1-4-1-8-20	G1/4	20	121	M20x1,5	55	G1/8	20	Al/CuZn	147

## GIF U T / Gripper Arm, internal spring, telescope



**Remarks:**

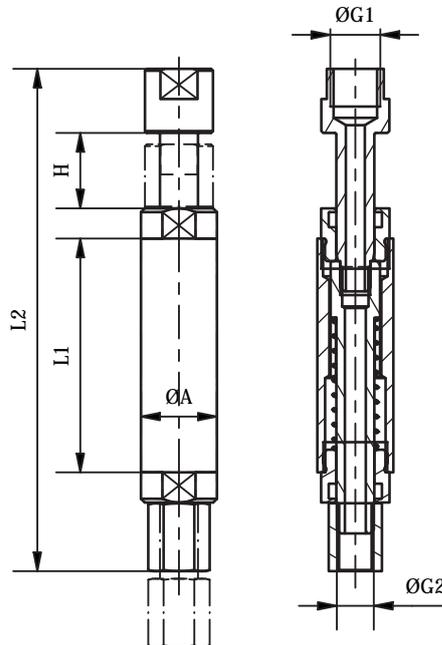
**Application: e.g. for mounting vacuum cups in the robot hand**

- Version U: dive trough
- Version U T: telescopic
- with internal spring
- the telescopic movement does not move the connections and hoses
- Body and lifting tube made of high-quality aluminum
- with air duct
- non-rotating
- Improved gliding properties thanks to a special anti-friction coating on the lifting tube

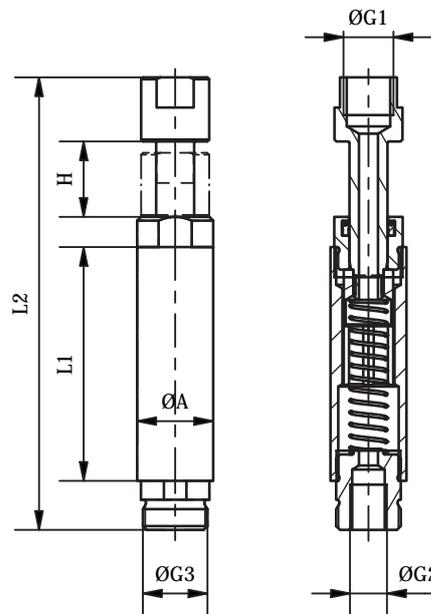
Application example



1-358-15-00



1-359-15-00



Part No.	Description	A [mm]	L1 [mm]	L2 [mm]	G1 ["]	G2 ["]	G3 [mm]	H [mm]	Weight [g]
1-358-15-00	GIF U 20-1/4-1/8-20	20	62	133	G1/4	G1/8	-	20	76
1-359-15-00	GIF U T 20-1/4-1/8-20	20	62	120	G 1/4	G 1/8	M17x1	20	55

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

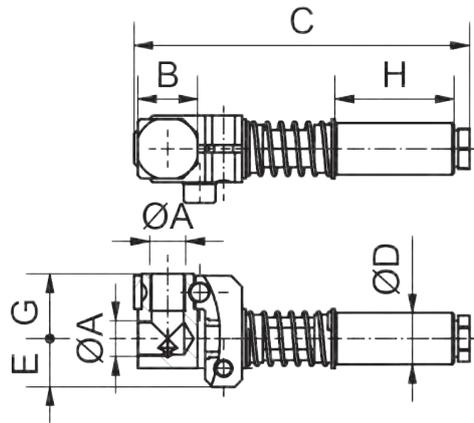
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

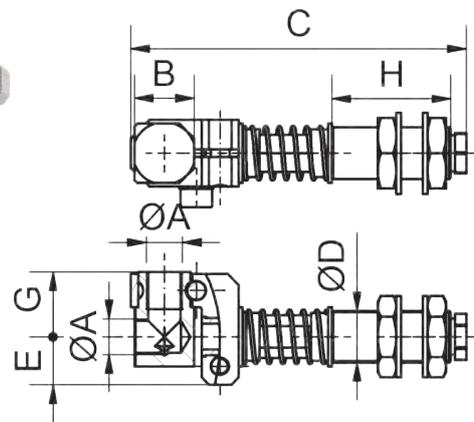
# 300 | Gripper Arms

## GGs / Gripper Arm, spring comp., lock. ag. rot., for Vacuum Cups

- 1-360-03-00
- 1-360-09-00
- 1-360-15-00
- 1-360-21-00
- 1-360-27-00



- 1-360-06-00
- 1-360-12-00
- 1-360-18-00
- 1-360-24-00
- 1-360-30-00



**Remarks:**

**Application: for connecting angled vacuum cups to the robot hand**

- suitable for oval vacuum cups
- locked against rotation by hexagonal guide
- high quality stainless steel spring

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
1-360-03-00	GGs 10-M5-M5-10	M5	12	70	10	5.5
1-360-06-00	GGs M10-M5-M5-10	M5	12	70	M10x1	5.5
1-360-09-00	GGs 14-1/8-1/8-15	G1/8	16	90	14	8
1-360-12-00	GGs M14-1/8-1/8-15	G1/8	16	90	M14x1	8
1-360-15-00	GGs 14-1/8-1/8-40	G1/8	16	114	14	8
1-360-18-00	GGs M14-1/8-1/8-40	G1/8	16	114	M14x1	8
1-360-21-00	GGs 20-1/4-1/4-20	G1/4	20	126	20	10
1-360-24-00	GGs M20-1/4-1/4-20	G1/4	20	126	M20x1.5	10
1-360-27-00	GGs 20-1/4-1/4-50	G1/4	20	156	20	10
1-360-30-00	GGs M20-1/4-1/4-50	G1/4	20	156	M20x1.5	10

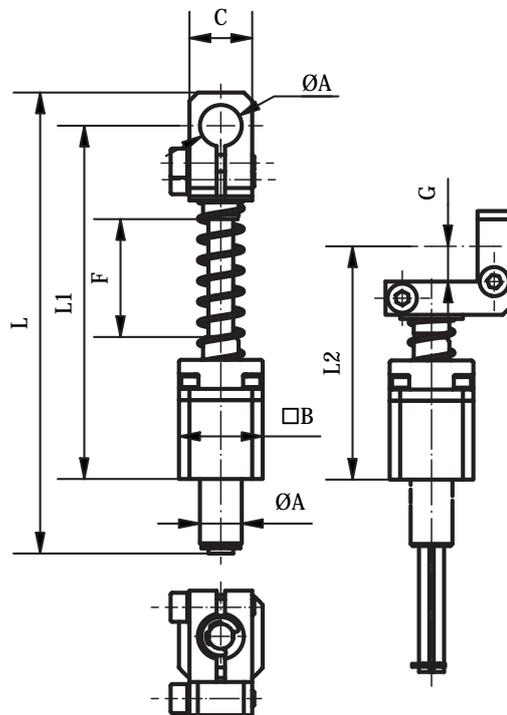
Part No.	Description	Suspension [mm]	G [mm]	H [mm]	Material	Weight [g]
1-360-03-00	GGs 10-M5-M5-10	10	13	25	Al/St/CuZn	38
1-360-06-00	GGs M10-M5-M5-10	10	13	25	Al/St/CuZn	43
1-360-09-00	GGs 14-1/8-1/8-15	15	17.5	32	Al/CuZn	63
1-360-12-00	GGs M14-1/8-1/8-15	15	17.5	32	Al/CuZn	75
1-360-15-00	GGs 14-1/8-1/8-40	40	17.5	32	Al/CuZn	67
1-360-18-00	GGs M14-1/8-1/8-40	40	17.5	32	Al/CuZn	78
1-360-21-00	GGs 20-1/4-1/4-20	20	21.5	55	Al/CuZn	158
1-360-24-00	GGs M20-1/4-1/4-20	20	21.5	55	Al/CuZn	179
1-360-27-00	GGs 20-1/4-1/4-50	50	21.5	55	Al/CuZn	165
1-360-30-00	GGs M20-1/4-1/4-50	50	21.5	55	Al/CuZn	186

## GGK / Gripper Arm, spring compensated, with a Linear Guidance

### Remarks:

- linear guidance locked against rotation
- extremely precise
- linear guidance can absorb lateral forces and moments
- ideal for mounting grippers
- suitable holder for vacuum cups with additional support by ZTB and gripper GRZ
- » see application examples

**Current delivery time on request!**



Part No.	Description	A	B	D	E	F	G	L	L1	L2	Weight [g]
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
1-361-01-00	GGK 10-25	10	20	15	25	9	111.5	85.1	56.7	72	72
1-361-03-00	GGK 10-50	10	20	15	50	9	159.3	131	79.7	97	97
1-361-21-00	GGK 20-30	20	30	25	30	16.5	160.5	112	79.6	217	217
1-361-22-00	GGK 20-60	20	30	25	60	16.5	221.5	173	109.6	312	312

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
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Vacuum Cups

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Needle Gripper

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Nipper Blades

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Special Elements

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Electrics and  
Sensors

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Pneumatics

**990**  
Tubular System  
Micro System

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PA-Forming  
Others

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Systems

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PA-Forming  
Others

# 300 | Gripper Arms

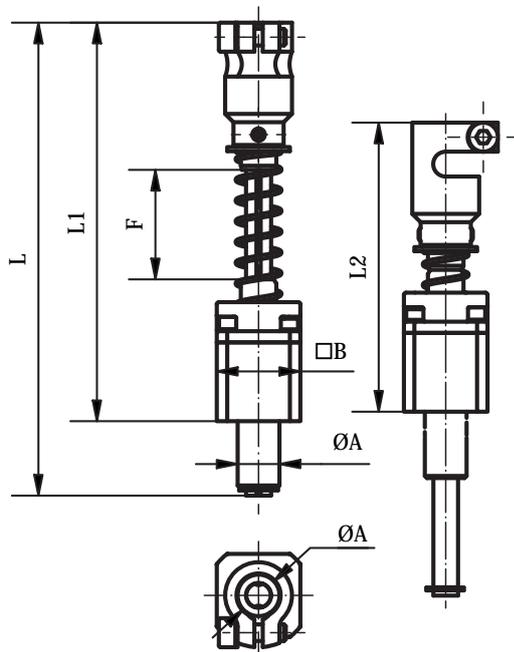
## GGK A / Gripper Arm, linear guidance, spring comp., lock.ag.rot., axial



**Remarks:**

- clamping axial
- linear guidance locked against rotation
- extremely precise
- linear guidance can absorb lateral forces and moments
- ideal for mounting grippers
- » see application examples

**Current delivery time on request!**

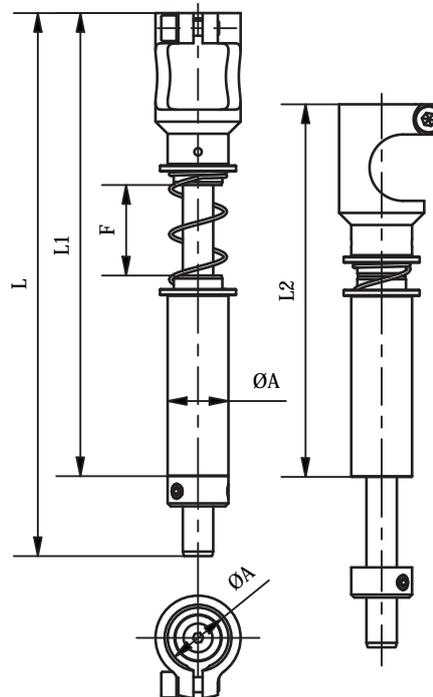


Part No.	Description	A [mm]	B [mm]	F [mm]	L [mm]	L1 [mm]	L2 [mm]	Weight [g]
1-361-31-00	GGK A 10-25	10	20	25	116	96.1	69.7	68
1-361-33-00	GGK A 10-50	10	20	50	164	144	92.7	93
1-361-35-00	GGK A 20-30	20	30	30	168	133	100.6	214
1-361-36-00	GGK A 20-60	20	30	60	229	194	130.6	305
1-361-37-00	GGK A 20-90	20	30	90	269	234	143.4	333

**GGK A R / Gripper Arm, linear guidance, rotatable, axial**

**Remarks:**

- particularly suitable for accommodating rotationally symmetrical centerings
- the design is rotation-free
- axial clamping
- ball guide of the gripper arm is extremely precise



Part No.	Description	A [mm]	F [mm]	L [mm]	L1 [mm]	L2 [mm]	Weight [g]
1-365-35-00	GGK A R 20-30 R	20	30	180	153.5	123.5	271
1-365-36-00	GGK A R 20-60 R	20	60	210	196.5	136.5	284
1-365-37-00	GGK A R 20-90 R	20	90	255	239.3	149.3	300

**000**  
Quick Change Systems

**050**  
Profiles  
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Clamps

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Connectors

**190**  
Profile  
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Nipper Blades

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Special Elements

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Electrics and  
Sensors

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Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

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Others

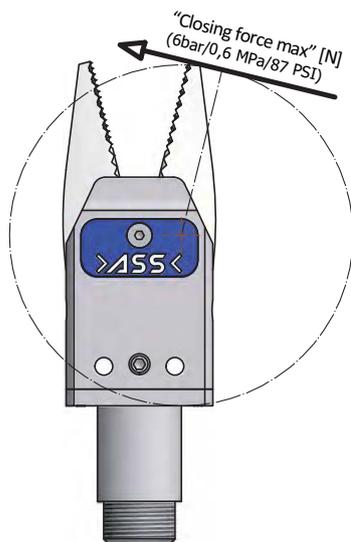
# 400 | Grippers

## Application example Gripper Sizes



Comparison of sizes of different gripper lines.

## Application example GRZ Closing Force



### Overview Closing Force:

Standard gripper versions of the different sizes in comparison, measured at an operating pressure of 6 bar.

Gripper	Closing Force max. [N]
GRZ 06-06	6
GRZ 10-08 CM	19
GRZ 10-12	28
GRZ 14 R	75
GRZ 20-16	65
GRZ 20-20 R	100
GRZ 25 R	350
GRZ 32	350

## Application example Easy to change Gripper Jaws

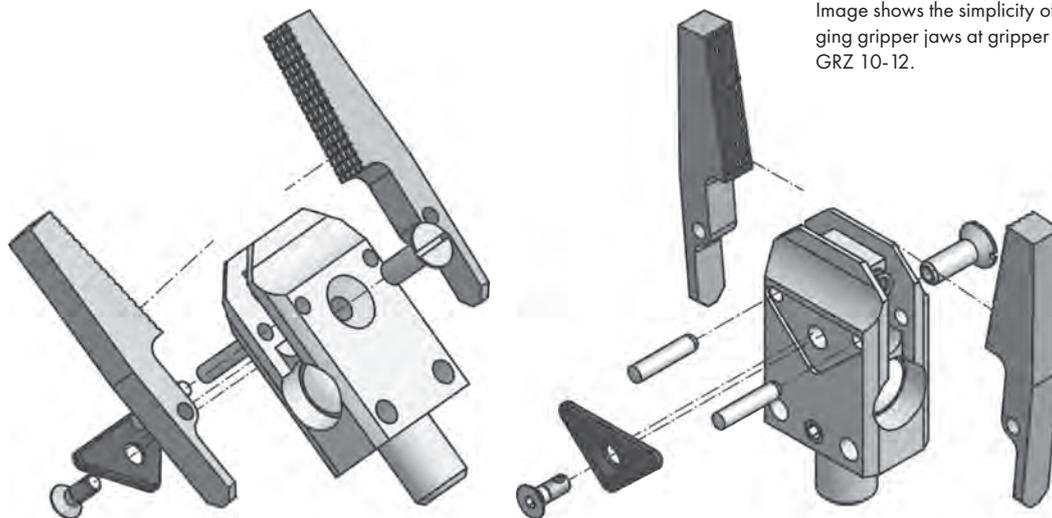
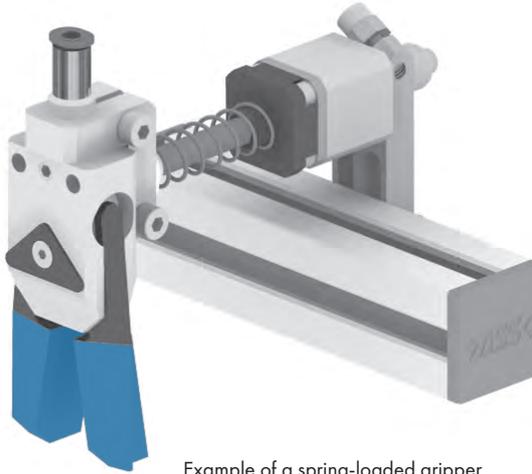
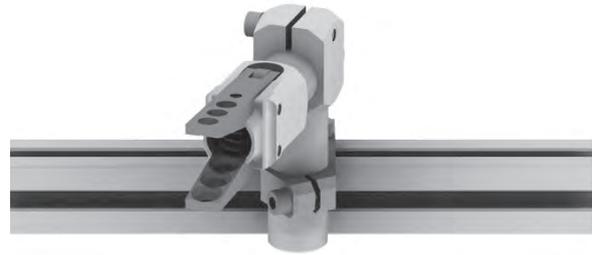


Image shows the simplicity of changing gripper jaws at gripper size GRZ 10-12.

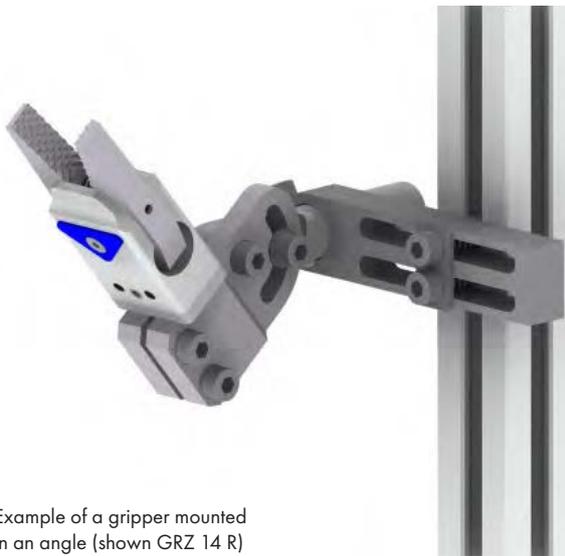
**Application examples for mounting Grippers**



Example of a spring-loaded gripper (shown GRZ 10-12 AH EP)



Example of a gripper mounted in 90° angle (shown GRZ 20-16)

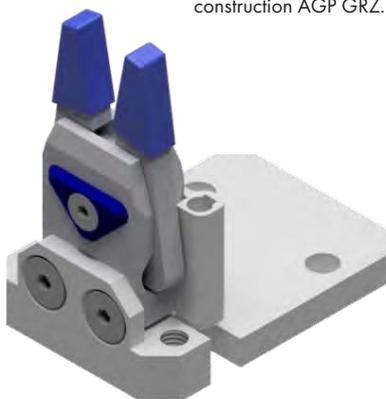


Example of a gripper mounted in an angle (shown GRZ 14 R)



Example of a gripper mounted with two clamps for a strong hold (shown GRZ 32 CS)

Connection of the GRZ 10-08 CMG EP with adapter for board construction AGP GRZ.



Example of a possible connection of a GRZ 10-12 RB CS to board construction via the AGP GRZ adapter.



**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

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Clamps

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Profile  
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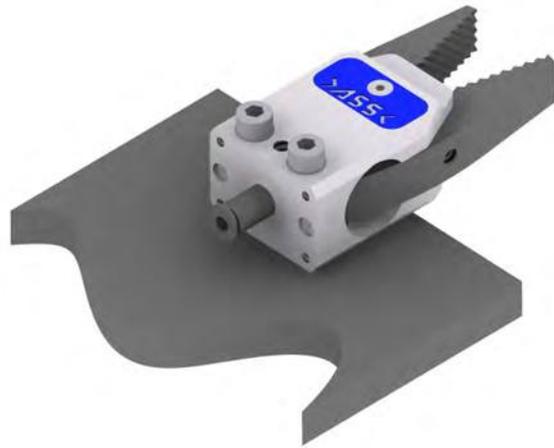
**990**  
PA-Forming  
Others

# 400 | Grippers

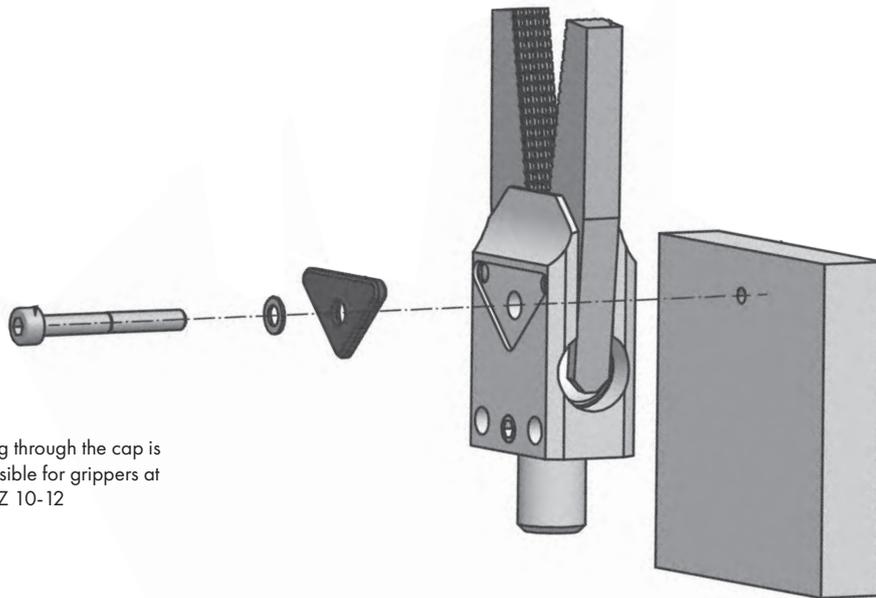
## Application examples for mounting Grippers



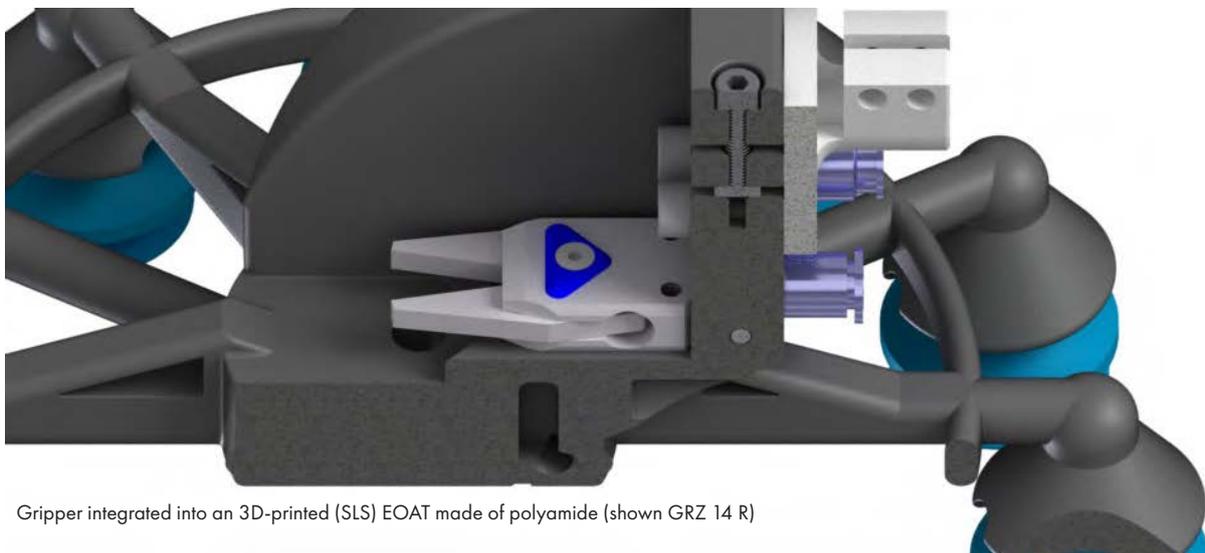
Mounting from the bottom is possible for series GRZ 14, GRZ 20 and GRZ 25 (shown GRZ 20-20 R)



Mounting through the gripper body is possible for all grippers up to series GRZ 25 (shown GRZ 20-20 R)



Mounting through the cap is only possible for grippers at type GRZ 10-12



Gripper integrated into an 3D-printed (SLS) EOAT made of polyamide (shown GRZ 14 R)

**Application examples Air Connection**

With VL U extended GRZ 10-08 with integrated air duct.



A direct air connection through the adapter AD-GRZ U is possible for gripper series GRZ 14 and GRZ 20 (shown GRZ 20 with saw jaws)



Air connection mounted sidewise (shown GRZ 10-08 CM)



An air connection indirectly through the adapter AD-GRZ U is possible for the gripper series GRZ 14, GRZ 20 and GRZ 25 (shown GRZ 14 R)

**App. example GRZ 10-08 C WK**



Grippers GRZ...WK with sensor are particularly suitable for gripping soft and rubber-like sprues (shown GRZ 10-08 C WK).

**App. example GRZ PS,CS,I**



Grippers GRZ...PS with parrot jaws are for gripping sprues (shown GRZ 14 PS,CS,I).

**Application examples GRZ 14 D A**



The double acting gripper GRZ 14 D A can be used for gripping from the inside (figure left) and gripping from the outside (figure right).

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
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Others

# 400 | Grippers

## Application example monitoring at GRZ 10-08

GRZ 10-08 CMG EP with attached Sensor Bracket  
SH GRZ 10-08 and Sensor MFS T2

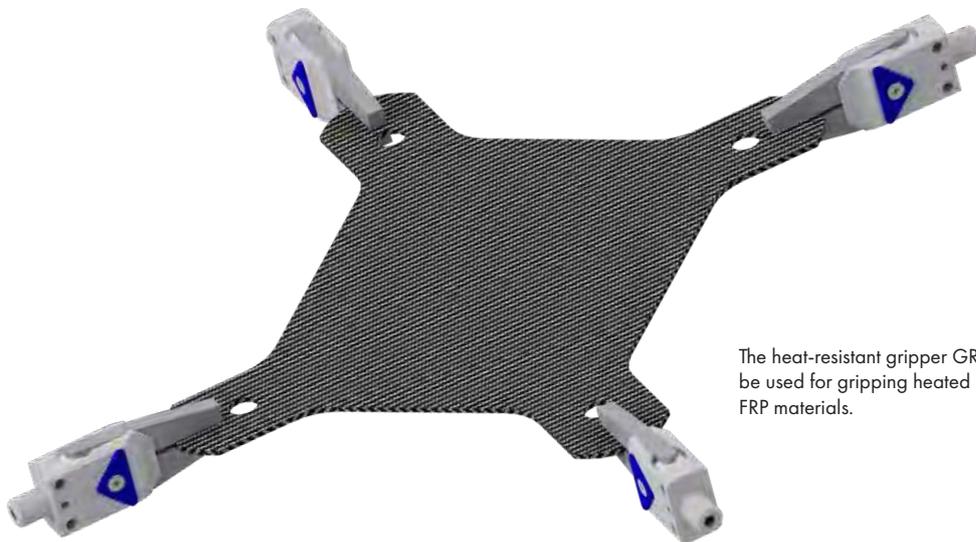


GRZ 14 R with mounted sensor holding bracket and sensor.



GRZ 25 with mounted sensor.

## Application example GRZ 10-12 HT



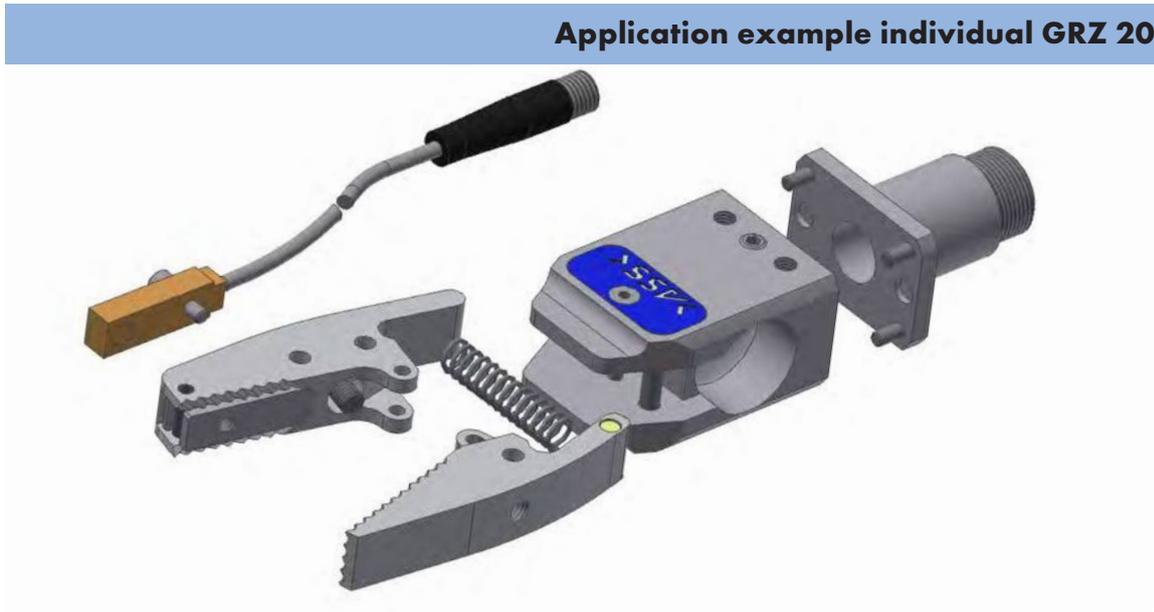
The heat-resistant gripper GRZ 10-12 HT can be used for gripping heated materials such as FRP materials.

## Application example GRZ AD 20-16



Extention tube VLR 20 mounted on gripper GRZ 20-16 by Adapter GRZ AD 20-16.

**Application example individual GRZ 20-20**



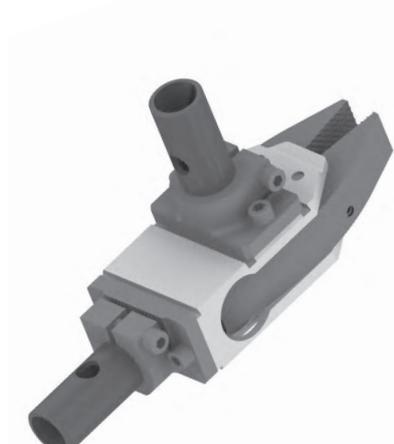
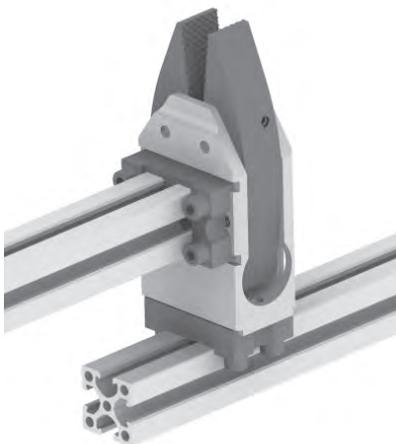
**Application example AD 20 GRZ 20 S**



GRZ 20-20 R mounted sidewise with adapter AD 20 GRZ 20 S

**Application examples GRZ 25**

Examples show various ways to connect gripper GRZ 25. Left side shows adaption by AP HEU, middle shows AP PGR and the figure on the right side shows AE HEU.



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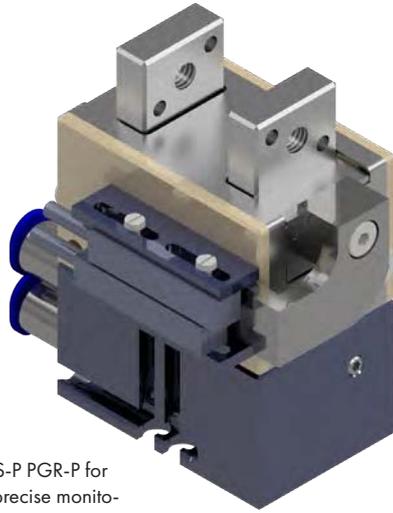
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## Application examples PGR-P

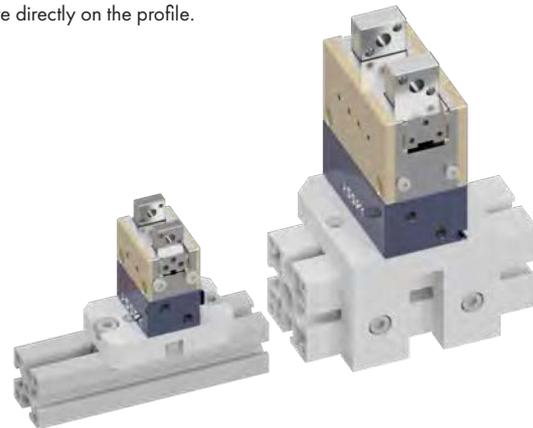


The direct connection is used for pressure supply without trouble-prone tubing. The pressure medium is instead guided through holes in the mounting plate.



Add-on kit AS-P PGR-P for additionally precise monitoring tasks.

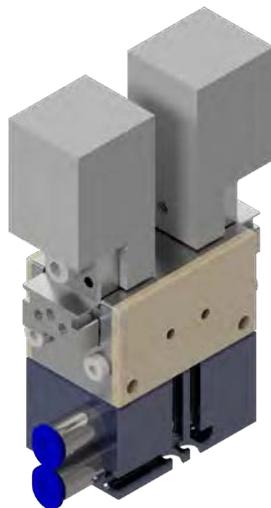
Connection using an adapter plate directly on the profile.



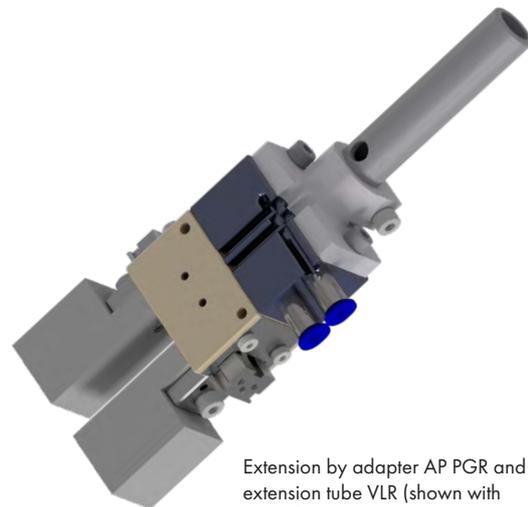
Sidewise connection of the parallel gripper PGR-P.

## Application example GB PGR

## Application example AP PGR



Unmachined jaws attached to a parallel gripper (shown PGR-P).



Extension by adapter AP PGR and extension tube VLR (shown with PGR-P).

**App. example IGP / IGP EP**

The ID Grippers IGP and IGP EP are characterized by their low weight. The IGP EP (shown here) additionally is provided with an EP coating and is particularly suitable for sensitive products.



**Application example IGB and IGB H**



The left figure shows the IGB mounted directly to a plate, the lower figure shows the connection by using the adapter AD IGB and the right figure shows the practical application of the ID gripper IGB.



Partial present control by vacuum is possible.

The end positions of sizes IGB 27 to IGB 63 can optionally be monitored with sensor bracket SH IGB and magnetic field sensor MFS T2.

When gripping with the IGB H (right), in contrast to the IGB (left), the component is lifted. Depending on the application, this can replace a Z-axis in pick and place.



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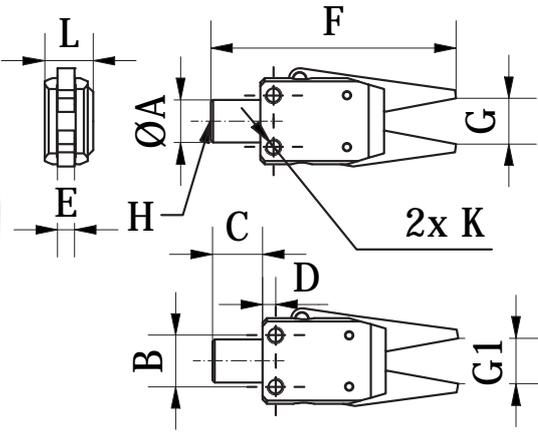
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# 400 | Grippers

## GRZ 10-08 / Gripper Size 10-08



**Remarks:**

**Application:** miniature size gripper, see table for properties of the jaw geometries

- single-acting gripper
- two pistons, Ø 8mm
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories for example:**

- Sensor Bracket SH GRZ 10-08
- extension with air duct VL U
- adapter for board mounting AGP GRZ

GRZ 10-08 CM

GRZ 10-08 CMG EP

GRZ 10-08 AH



GRZ 10-08 C WK  
GRZ 10-08 C WK NPN

GRZ 10-08 C  
GRZ 10-08 C NPN

GRZ 10-08 CF  
GRZ 10-08 CF NPN



GRZ 10-08 CF EP  
GRZ 10-08 CF EP NPN



## GRZ 10-08 / Gripper Size 10-08 (Continuation)

Description	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	H	K	L [mm]	Closing force max. [N]
GRZ 10-08...	10	12	11.5	3	57	M5	M4	10	19

Part No.	Description	Jaw Type	Application / Remarks
1-408-14-00	GRZ 10-08 CM	chequered	• optionally equipped sensor mounting bracket and initiator
<b>New</b> 1-408-04-00	GRZ 10-08 AH	chequered, extra-wide	• for sprues undefined in position
1-408-30-00	GRZ 10-08 CMG EP	smooth, with EP coating Shore 90	• very smooth gripping • optionally equipped sensor mounting bracket and initiator
1-408-17-00	GRZ 10-08 C	with sensor PNP	• gripper with direct part-present-control • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-18-00	GRZ 10-08 C NPN	with sensor NPN	• gripper with direct part-present-control • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-19-00	GRZ 10-08 C WK	with sensor PNP / soft materials contour	• especially for part-present-control of soft materials • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-20-00	GRZ 10-08 C WK NPN	with sensor NPN / soft materials contour	• especially for part-present-control of soft materials • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-21-00	GRZ 10-08 CF EP	with sensor PNP / smooth, with EP coating Shore 90	• gripper with direct part-present-control • with flat shift fork • very smooth gripping • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-22-00	GRZ 10-08 CF EP NPN	with sensor NPN / smooth, with EP coating Shore 90	• gripper with direct part-present-control • with flat shift fork • very smooth gripping • direct query, inductive, NPN, NO, 3-pole, 2m, cable
1-408-25-00	GRZ 10-08 CF	chequered / with sensor PNP	• gripper with direct part-present-control • with flat shift fork • direct query, inductive, PNP, NO, 3-pole, 2m, cable
1-408-26-00	GRZ 10-08 CF NPN	chequered / with sensor NPN	• gripper with direct part-present-control • with flat shift fork • direct query, inductive, NPN, NO, 3-pole, 2m, cable

Part No.	Description	Jaws made of...	E [mm]	G [mm]	G1 [mm]	Weight [g]
1-408-14-00	GRZ 10-08 CM	hardcoated Aluminium	4	10	0	17
<b>New</b> 1-408-04-00	GRZ 10-08 AH	hardcoated Aluminium	12	10	0	17
1-408-30-00	GRZ 10-08 CMG EP	hardcoated Aluminium, EP coating Shore 90, colour blue	5	10	0	18
1-408-17-00	GRZ 10-08 C	hardcoated Aluminium	8	10	1	49
1-408-18-00	GRZ 10-08 C NPN	hardcoated Aluminium	8	10	1	44
1-408-19-00	GRZ 10-08 C WK	hardcoated Aluminium, Steel	9	7.5	0	51
1-408-20-00	GRZ 10-08 C WK NPN	hardcoated Aluminium, Steel	9	7.5	0	51
1-408-21-00	GRZ 10-08 CF EP	hardcoated Aluminium, EP coating Shore 90, colour blue	7	10	1	49
1-408-22-00	GRZ 10-08 CF EP NPN	hardcoated Aluminium, EP coating Shore 90, colour blue	7	10	1	49
1-408-25-00	GRZ 10-08 CF	hardcoated Aluminium	8	10	1	49
1-408-26-00	GRZ 10-08 CF NPN	hardcoated Aluminium	8	10	1	49

The EP-coating is an elastomer, so all dimensions are nominal.

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# 400 | Grippers

## SH GRZ 10-08 / Sensor Bracket



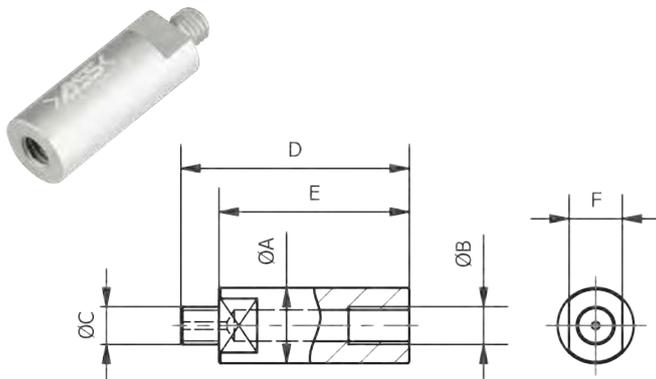
**Remarks:**

**Application:** allows easy installation of a sensor

- 1 or 2 switching points can be monitored in combination with the sensor
- gripping jaw area unchanged
- suitable for Sensor MFS T 2 3,7

Part No.	Description	Adaptable with	Material	Weight [g]
1-408-80-00	SH GRZ 10-08	GRZ 10-08 CMG / CMG EP	Polyamide	2

## VL U / Extension with air duct for GRZ 10



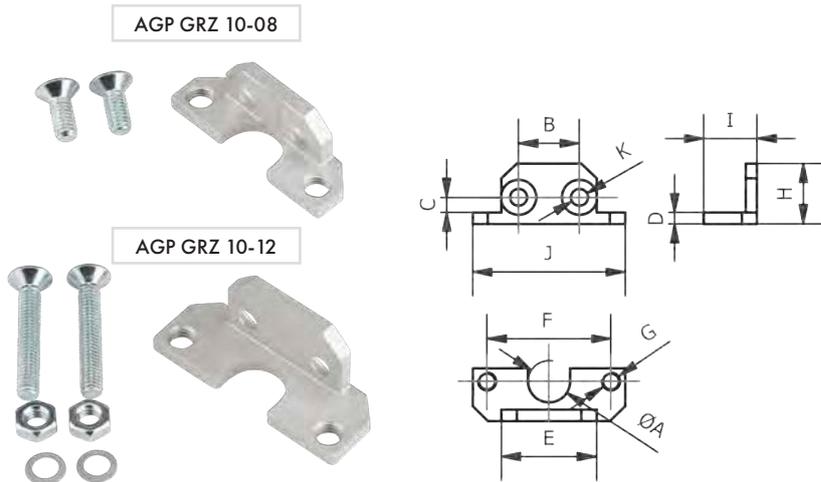
**Remarks:**

**Application:** Extension for all grippers GRZ 10-08 and GRZ 10-12

- easy to handle
- with air duct
- small and compact design
- » see application example

Part No.	Description	A [mm]	B	C	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-408-70-00	VL-U-25-GRZ-10	10	M5	M5	30	25	7	Aluminium	5

## AGP GRZ / Adapter for GRZ Board Mounting



**Remarks:**

**Application:** Adapter for mounting GRZ grippers on boards

- » see application examples

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G	H [mm]
1-408-90-00	AGP GRZ 10-08	11	12	3	3	22,5	27,5	M5	12,5
1-412-90-00	AGP GRZ 10-12	11	16	4	3	25	32,5	M5	16

Part No.	Description	I [mm]	J [mm]	K [mm]	Material	Weight [g]	Price [€]
1-408-90-00	AGP GRZ 10-08	10	35	4,5	Aluminium	3	
1-412-90-00	AGP GRZ 10-12	14	40	4,5	Aluminium	13	

**GRZ 10-12 / Gripper Size 10-12**

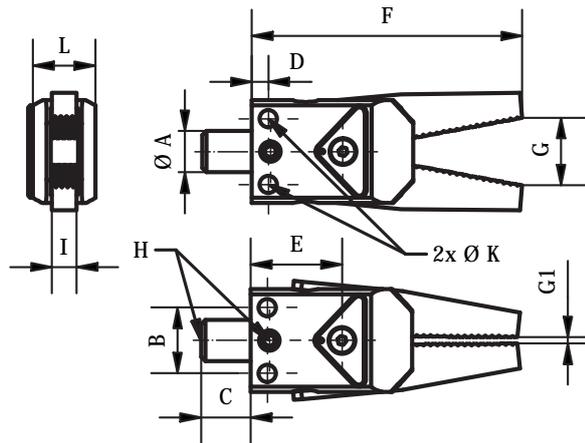
**Remarks:**

**Application: single-acting, compact gripper, see table for properties of the jaw geometries**

- parts can not get stuck behind jaws (except AH, AH EP, DB, A, A1, BSCS)
- two pistons Ø 12mm
  - » closing force measured at point of jaws at 6 bar
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Sprue Shifter AAE (only suitable for GRZ 10-12...WK)



Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H	K [mm]	L [mm]
GRZ 10-12...	10	16	12	4	22	M5	4.2	15



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Others

# 400 | Grippers

## GRZ 10-12 / Gripper Size 10-12 (Continuation)

Part No.	Description	Jaw Type	Application / Remarks
1-412-03-00	GRZ 10-12	chequered	<ul style="list-style-type: none"> <li>standard version</li> </ul>
1-412-05-00	GRZ 10-12 BG	chequered, hardened, shutting	<ul style="list-style-type: none"> <li>for small diameters or plates</li> <li>shutting version</li> </ul>
1-412-60-00	GRZ 10-12 G	smooth	<ul style="list-style-type: none"> <li>for reducing marking</li> </ul>
1-412-61-00	GRZ 10-12 G PTFE	smooth, with PTFE coating	<ul style="list-style-type: none"> <li>for sticky sprues or materials</li> </ul>
1-412-65-00	GRZ 10-12 EP	smooth, with EP coating Shore 90	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>covers all applications of smooth jaws</li> </ul>
1-412-66-00	GRZ 10-12 R HT	heat-resistant, chequered	<ul style="list-style-type: none"> <li>long term usage up to 150°C air temperature</li> <li>higher temperatures have to be tested individually, please contact your responsible contact</li> </ul>
1-412-35-00	GRZ 10-12 S	saw jaws	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> </ul>
1-412-46-00	GRZ 10-12 Z	toothed	<ul style="list-style-type: none"> <li>for semicircular sprues or bridges</li> </ul>
1-412-12-00	GRZ 10-12 PK	prism / v-groove	<ul style="list-style-type: none"> <li>for cone-shaped sprues</li> </ul>
1-412-13-00	GRZ 10-12 KK	v-groove	<ul style="list-style-type: none"> <li>for gripping sprues axial</li> </ul>
1-412-34-00	GRZ 10-12 AH	wide jaws	<ul style="list-style-type: none"> <li>for large-area gripping</li> </ul>
1-412-39-00	GRZ 10-12 AH EP	wide jaws, with EP coating Shore 90	<ul style="list-style-type: none"> <li>for large-area gripping</li> <li>very smooth gripping</li> </ul>
1-412-30-00	GRZ 10-12 DB	swiveling	<ul style="list-style-type: none"> <li>for gripping conical sprues</li> <li>automatically fitting to the conicity due to swiveling jaws</li> </ul>
1-412-06-00	GRZ 10-12 A	for customized jaws	<ul style="list-style-type: none"> <li>for adapting customized jaws</li> <li>each jaw with 2 holes M4, hole pitch 8 mm</li> <li>angle open 15°, angle closed -6°</li> </ul>
1-412-09-00	GRZ 10-12 A1	for customized jaws	<ul style="list-style-type: none"> <li>for adapting customized jaws</li> <li>each jaw with 3 holes M4, hole pitch 8 mm</li> <li>angle open 15°, angle closed -6°</li> </ul>
1-412-16-00	GRZ 10-12 CF	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 3m, cable</li> </ul>
1-412-17-00	GRZ 10-12 CF NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 3m, cable</li> </ul>
1-412-20-00	GRZ 10-12 CFS	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-23-00	GRZ 10-12 CFS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-22-00	GRZ 10-12 CFS EP	with sensor PNP / with EP coating Shore 90	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-27-00	GRZ 10-12 CFS EP NPN	with sensor NPN / with EP coating Shore 90	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-25-00	GRZ 10-12 CFS WK	with sensor PNP / contour for soft materials	<ul style="list-style-type: none"> <li>especially for part-present-control of soft materials and for gripping small diameters or straps</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-26-00	GRZ 10-12 CFS WK NPN	with sensor NPN / contour for soft materials	<ul style="list-style-type: none"> <li>especially for part-present-control of soft materials and for gripping small diameters or straps</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-40-00	GRZ 10-12 SCFS	with sensor PNP / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-45-00	GRZ 10-12 SCFS NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-43-00	GRZ 10-12 RB CS	with sensor PNP, extra wide / chequered, extra wide	<ul style="list-style-type: none"> <li>extra wide jaws for large-area gripping</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-412-44-00	GRZ 10-12 RB CS NPN	with sensor NPN, extra wide / chequered, extra wide	<ul style="list-style-type: none"> <li>extra wide jaws for large-area gripping</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>

Jaws made of...	F [mm]	l [mm]	G [mm]	G1 [mm]	Closing force max. [N]	Weight [g]
zinc-plated Steel	65	6	16.5	1.5	28	58
zinc-plated Steel, hardened	65	6	14.5	0	28	60
zinc-plated Steel	65	6	16.5	1.5	28	60
zinc-plated Steel	65	6	16.5	1.5	28	66
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	16.5	1.5	28	60
zinc-plated Steel	65	6	16.5	1.5	28	68
zinc-plated Steel	65	6	16.5	1.5	28	58
zinc-plated Steel	65	6	16.5	1.5	28	63
zinc-plated Steel	65	6	16.5	2	28	56
zinc-plated Steel	65	6	16.5	2.5	28	56
zinc-plated Steel	70	14	17.5	1	25	68
zinc-plated Steel, EP coating Shore 90, colour blue	70	14.5	17.5	1	25	73
zinc-plated Steel	60/64	8	10.5	2.5	28	61
zinc-plated Steel	42	6	closing force and opening width depends on customized jaws			40
zinc-plated Steel	52	6	closing force and opening width depends on customized jaws			44
zinc-plated Steel	64	6	15	1	28	90
zinc-plated Steel	64	6	15	1	28	90
zinc-plated Steel	64	6	15	1	28	108
zinc-plated Steel	64	6	15	1	28	108
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	15	1	28	122
zinc-plated Steel, EP coating Shore 90, colour blue	65	6.5	15	1	28	122
zinc-plated Steel	65	10	14	1	28	116
zinc-plated Steel	65	10	14	1	28	116
zinc-plated Steel	65	6	16.5	1	28	108
zinc-plated Steel	65	6	16.5	1	28	108
zinc-plated Steel, hardcoated Aluminium	70	22	16.5	1	28	75
zinc-plated Steel, hardcoated Aluminium	70	22	16.5	1	28	75

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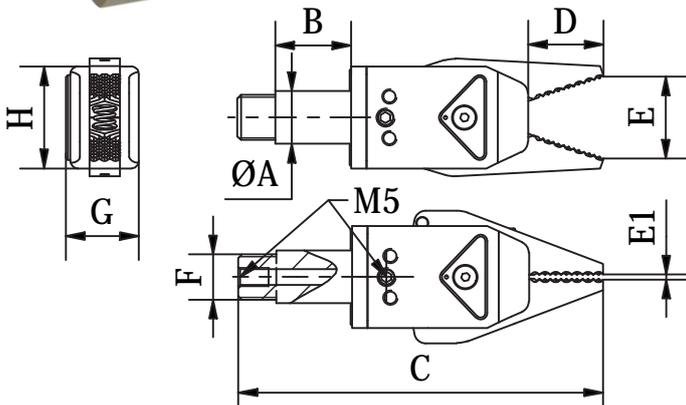
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## GRZ 14 R / Gripper with Chequered Jaws



**Remarks:**

**Application: smaller size with greater closing force**

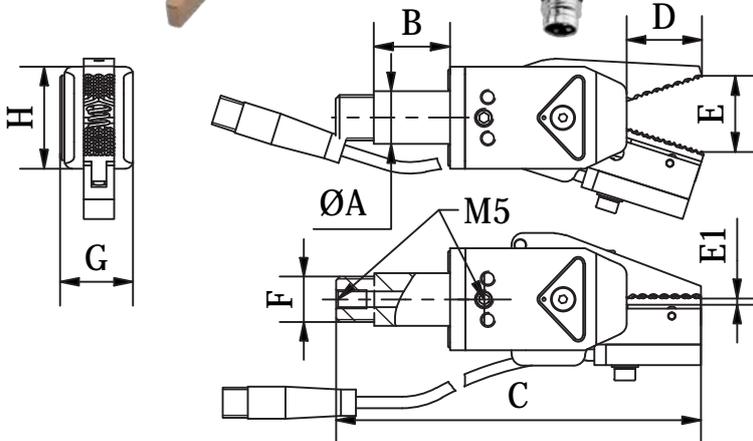
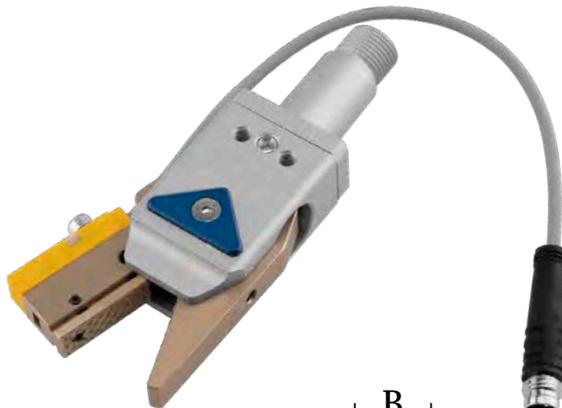
- jaws made of hardcoated Aluminium
- consistent development of the GRZ series
- optimized connections
- easy to change jaws
- air connection M5 optional at adapter or laterally
- single acting
- optionally equipped with a sensor bracket and initiator
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Extension Tube VLR
- Sensor Bracket SH GRZ 14
- all Gripper Jaws Size 14

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-414-00-00	GRZ 14 R	14	20	96	19.5	22	0	M12x1	19	27	75	64

## GRZ 14 R,CS,I / Gripper with Chequered Jaws and Sensor with Plug



**Remarks:**

**Application: smaller size with sensor and greater closing force**

- jaws made of hardcoated Aluminium
- direct query, inductive, PNP, NO, 3-pole, 0.16m, M8 connector
- NPN version available as separate Gripper Jaws
- air connection M5 optional at adapter or laterally
- single acting
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-414-20-00	GRZ 14 R,CS,I	14	20	96	19.5	22	2	M12x1	19	27	75	73

**GRZ 14 D A / Gripper, double acting**

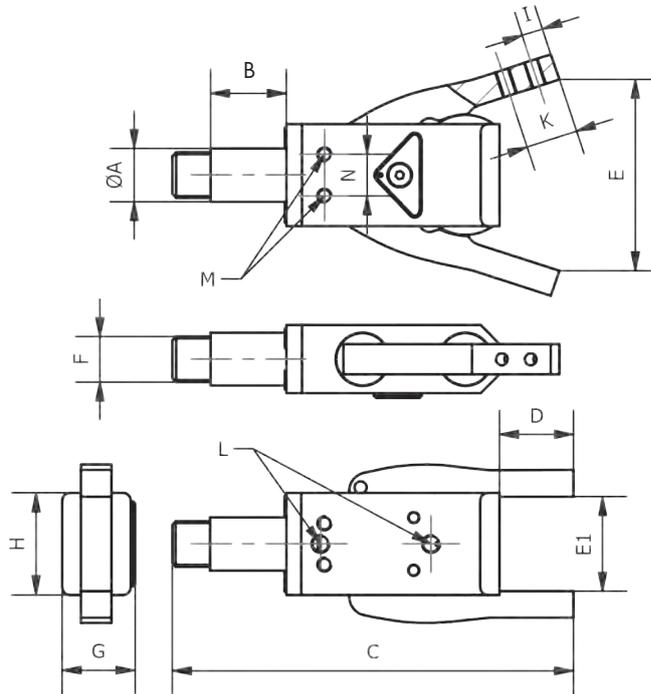
**Remarks:**

**Application: for adapting workpiece-specific jaws and for individual applications can also be used as inner gripper**

- double-acting gripper
- angle opened 36°, angle closed 0°
- optionally equipped with a sensor bracket and initiator
- » closing and opening force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Extension Tube VLR



Part No.	Description	Closing force max. [N]	Opening force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]
1-414-50-00	GRZ 14 D A	75	75	14	20	106	19.5	23	48

Part No.	Description	F [mm]	G [mm]	G1 [mm]	H [mm]	K [mm]	Air Connection	M [mm]	N [mm]	Weight [g]
1-414-50-00	GRZ 14 D A	M12x1	19	27	5,6	13,6	2xM5	2xM4	11	79

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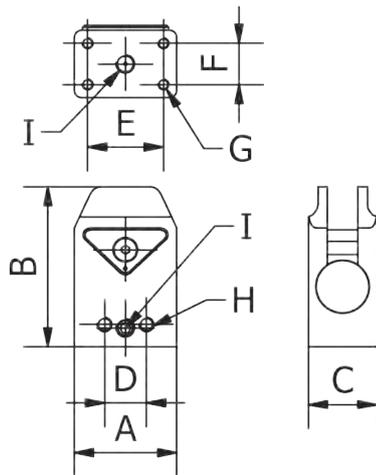
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## GRZ 14 Body



**Remarks:**

**Application: for creating individual grippers of the GRZ 14 series**

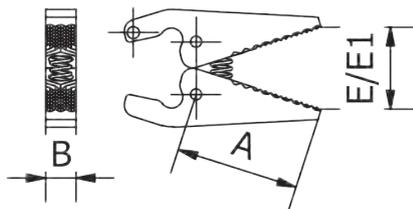
- made of anodized Aluminium
- 2 pistons, Ø 14
- choose gripper jaws and accessories to customize your GRZ gripper
- all components easy to assemble
- single-acting body
- optionally equipped with a sensor holder and initiator

**Accessories e.g.:**

- Sensor Bracket SH GRZ 14
- Adapter AS GRZ 14
- all Gripper Jaws Size 14

Part No.	Description	A	B	C	D	E	F	G	H	I	Weight [g]
		[mm]									
1-414-80-00	GRZ 14 Body	27	42.5	19	11	20	11	M3	M4	M5	34

## GRZ 14 Gripper Jaws / Gripper Jaws Size 14



**Remarks:**

**Application: gripper jaws for creating individual GRZ 14, see table for properties of the jaw geometries**

- Jaw pairs without integrated query can be optionally equipped with a sensor bracket and initiator
- gripper jaws made of hardcoated Aluminium

<p>GRZ 14 BP R</p> 	<p>GRZ 14 BP S</p> 	<p>GRZ 14 BP PU</p> 	<p>GRZ 14 BP EP</p> 
<p>GRZ 14 BP A</p> 	<p>GRZ 14 BP R,CS,I GRZ 14 BP R,CS,I NPN</p> 	<p>GRZ 14 BP EP,CS,I GRZ 14 BP EP,CS,I NPN</p> 	<p>GRZ 14 BP PS,CS,I GRZ 14 BP PS,CS,I NPN</p> 
<p>GRZ 14 BP S,CS,I GRZ 14 BP S,CS,I NPN</p> 	<p>GRZ 14 BP EP,CS,I,EP</p>  <p><b>NEW</b></p>		

## GRZ 14 Gripper Jaws / Gripper Jaws Size 14 (Continuation)

Part No.	Description	Application / Remarks
1-414-81-00	GRZ 14 Gripper Jaw R	<ul style="list-style-type: none"> <li>standard version</li> </ul>
1-414-86-00	GRZ 14 Gripper Jaw S	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> </ul>
1-414-90-00	GRZ 14 Gripper Jaw PU	<ul style="list-style-type: none"> <li>22 mm PU pads</li> <li>for avoiding marking</li> <li>very smooth gripping</li> </ul>
1-414-91-00	GRZ 14 Gripper Jaw EP	<ul style="list-style-type: none"> <li>for avoiding marking</li> <li>very smooth gripping</li> <li>for more information about EP coating, see category 990</li> </ul>
1-414-84-00	GRZ 14 Gripper Jaw A	<ul style="list-style-type: none"> <li>for adapting customized jaws</li> <li>hole pitch 8 mm</li> <li>angle opened 35.5 °, angle closed 0 °</li> <li>closing force and opening width depends on customized jaws</li> </ul>
1-414-82-00	GRZ 14 Gripper Jaw R,CS,I	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-83-00	GRZ 14 Gripper Jaw R,CS,I NPN	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-92-00	GRZ 14 Gripper Jaw EP,CS,I	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-97-00	GRZ 14 Gripper Jaw EP,CS,I NPN	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-95-00	GRZ 14 Gripper Jaw PS,CS,I	<ul style="list-style-type: none"> <li>contour jaws for semi-circular and large sprues</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
<b>New</b> 1-414-98-00	GRZ 14 Gripper Jaws EP,CS,I,EP	<ul style="list-style-type: none"> <li>very smooth gripping, EP coating on both sides, optimizes the adhesion</li> <li>for more information about EP coating, see category 990</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-96-00	GRZ 14 Gripper Jaw PS,CS,I NPN	<ul style="list-style-type: none"> <li>contour jaw for semi-circular and large sprues</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-94-00	GRZ 14 Gripper Jaw S,CS,I	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-414-93-00	GRZ 14 Gripper Jaw S,CS,I NPN	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>

Part No.	Description	Jaw Type	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-414-81-00	GRZ 14 Gripper Jaw R	chequered	33	8	22	0	19
1-414-86-00	GRZ 14 Gripper Jaw S	saw jaws	33	8	22	0	18
1-414-90-00	GRZ 14 Gripper Jaw PU	with Polyurethane Pads	33	8	17	0	18
1-414-91-00	GRZ 14 Gripper Jaw EP	smooth, with EP coating Shore 90, colour blue	33	8	22	0	19
1-414-84-00	GRZ 14 Gripper Jaw A	for customized jaws, each jaw with 2 holes M5	32.5	8	-	-	17
1-414-82-00	GRZ 14 Gripper Jaw R,CS,I	with sensor PNP / chequered	32.5	8	22	2	27
1-414-83-00	GRZ 14 Gripper Jaw R,CS,I NPN	with sensor NPN / chequered	32.5	8	22	2	27
1-414-92-00	GRZ 14 Gripper Jaw EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-97-00	GRZ 14 Gripper Jaw EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-95-00	GRZ 14 Gripper Jaw PS,CS,I	with sensor PNP / contour jaw	32.5	8	20	0	27
<b>New</b> 1-414-98-00	GRZ 14 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	32.5	8	22	2	30
1-414-96-00	GRZ 14 Gripper Jaw PS,CS,I NPN	with sensor NPN / contour jaw	32.5	8	20	0	27
1-414-94-00	GRZ 14 Gripper Jaw S,CS,I	with sensor PNP / saw jaw	32.5	8	22	2	27
1-414-93-00	GRZ 14 Gripper Jaw S,CS,I NPN	with sensor NPN / saw jaw	32.5	8	22	2	27

The EP-coating is an elastomer, so all dimensions are nominal.

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## SH GRZ 14 / Sensor Mounting Bracket



**Remarks:**

**Application: allows easy mounting of a sensor**

- two positions can be monitored (open/closed)
- space saving
- gripping jaw area unchanged
- 2 switching points „teachable“

Part No.	Description	fits for Sensor	Material	Weight [g]
1-414-04-00	SH GRZ 14	MFS T2 3,7 (Part No. 1-808-30-00)	Polyamide	4

## AD GRZ 14 U / Adapter with Air Duct



**Remarks:**

**Application: adapts GRZ 14 to GRZ 14-14 or GRZ 14-10**

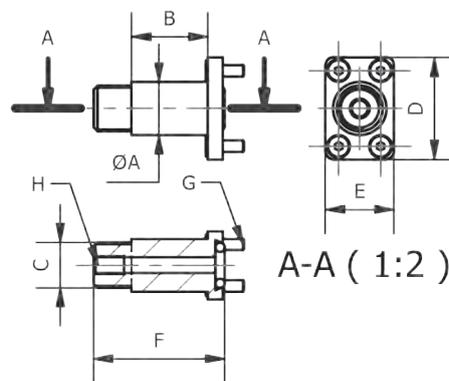
- with integrated air duct

**Scope of Delivery:**

- seal ring and screws included

**Accessories e.g.:**

- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-414-11-00	AD 14 GRZ 14 U	14	20	M12x1	27	18	34	M3	M5	14
1-414-13-00	AD 10 GRZ 14 U	10	15	M8x1	27	18	29	M3	M5	12

**AAE / Sprue Shifter for gripper GRZ**

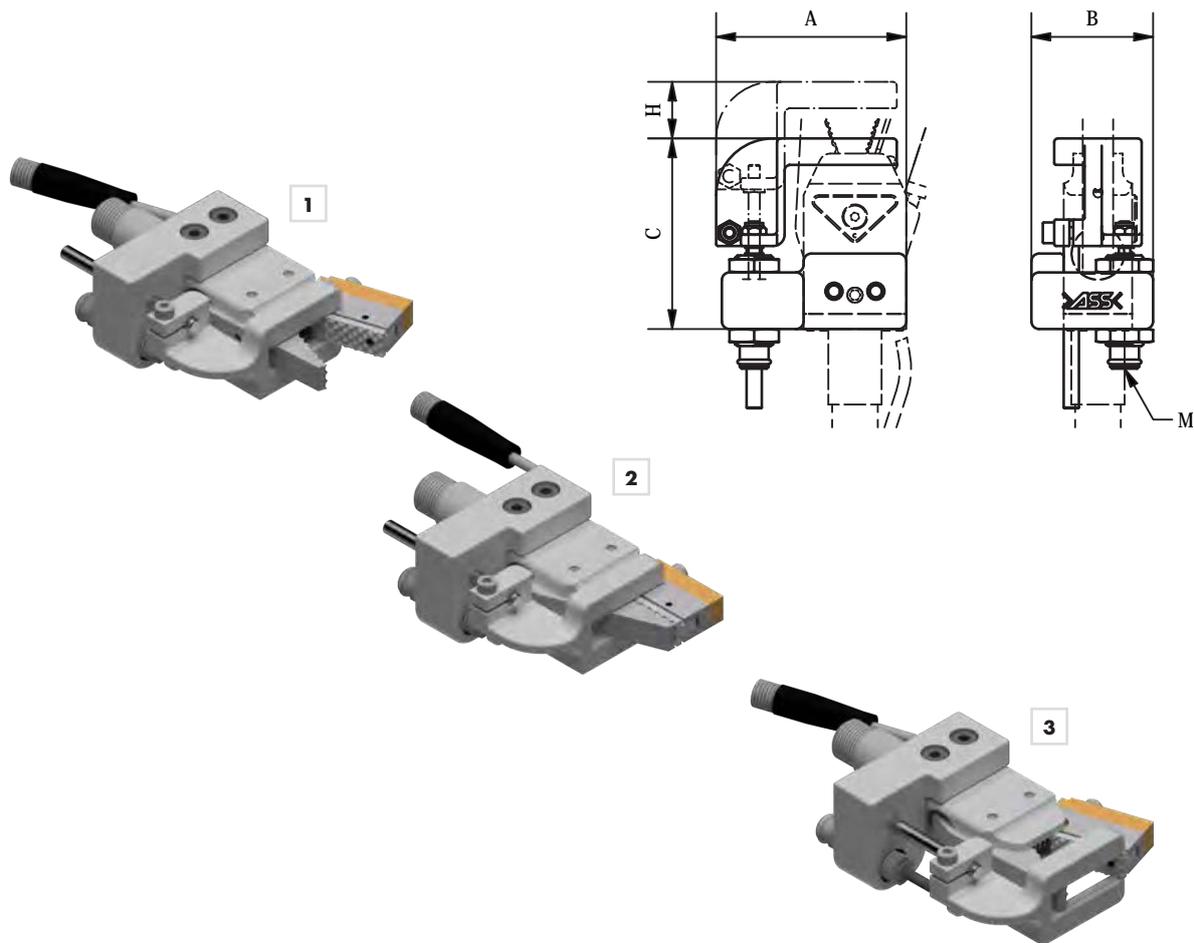
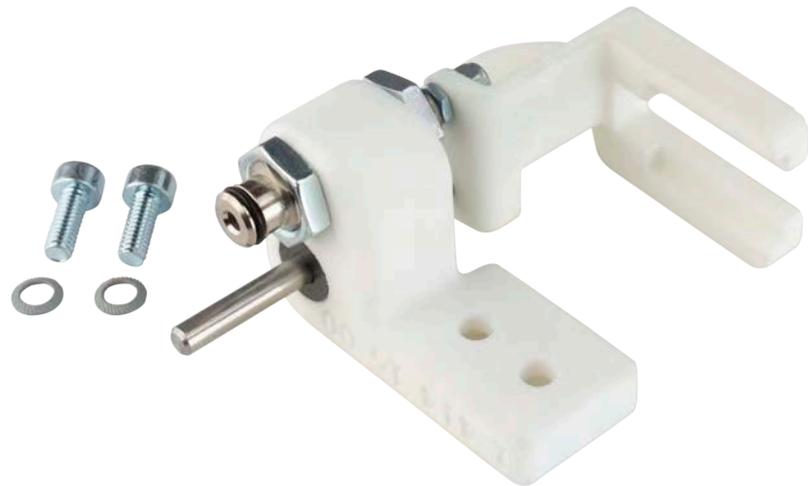


**Remarks:**

**Application: Supports shifting of soft materials from the gripper**

- easy to add
- stroke 15 mm
- single acting
- lightweight
- controlled separately
- available for various GRZ on demand
- not suitable for jaw types EP, A, AH, DB, RB and SL
- application example shows AAE with GRZ 14

- 1 GRZ open / AAE initial
- 2 GRZ closed / AAE initial
- 3 GRZ open / AAE moved



	Part No.	Description	A [mm]	B [mm]	C [mm]	H [mm]	suitable for	Material	Weight [g]
<b>New</b>	1-412-70-00	AAE GRZ 10-12 C WK	44.5	46	49.4	15	GRZ 10-12 C WK	Polyamide	32
	1-414-15-00	AAE GRZ 14	50	32	50	15	GRZ 14	Polyamide	47
<b>New</b>	1-417-15-00	AAE GRZ 20	62	37.3	65.6	15	GRZ 20	Polyamide	62

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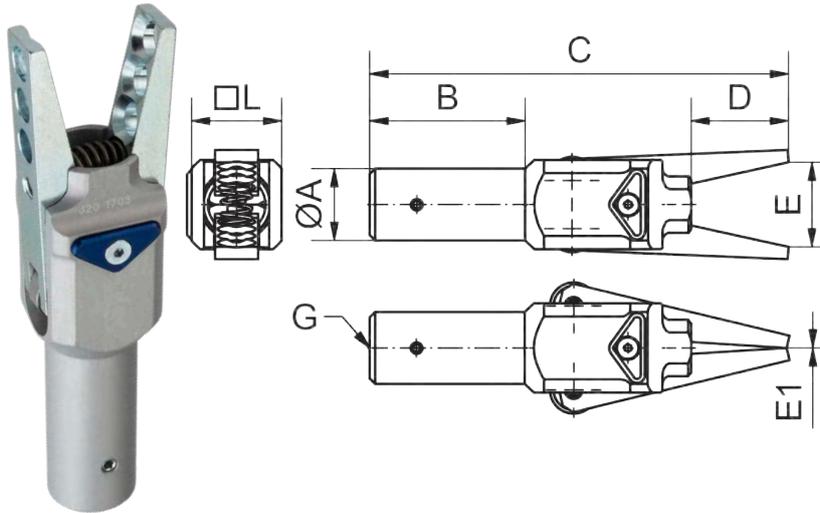
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## GRZ 20-16 / Gripper Size 20-16



**Remarks:**

**Application: single-acting gripper, see table for properties of the jaw geometries**

- piston diameter 16 mm
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- \* dimensions divergent for GRZ 20-16 DB: C=120; D=25
- GRZ 20-16 A: C=90; D= depending on used adapter

**Accessories e.g.:**

- Adapter AD 20-16

Description	A [mm]	B [mm]	C* [mm]	D* [mm]	G ["]	L [mm]	Closing Force max. [N]*
GRZ 20-16...	20	43	116	27	G1/8	25	65



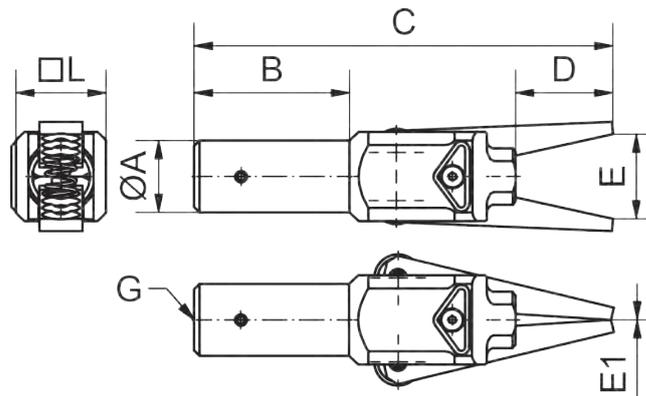
## GRZ 20-16 / Gripper Size 20-16 (Continuation)

Part No.	Description	Jaw Type	Application / Remarks
1-415-03-00	GRZ 20-16	perforated	<ul style="list-style-type: none"> <li>standard version</li> </ul>
1-415-06-00	GRZ 20-16 R	chequered	<ul style="list-style-type: none"> <li>for gripping small diameters or plates</li> </ul>
1-415-60-00	GRZ 20-16 G	smooth	<ul style="list-style-type: none"> <li>for avoiding marking</li> </ul>
1-415-40-00	GRZ 20-16 S	saw jaws	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> </ul>
1-415-30-00	GRZ 20-16 PU	PU pads	<ul style="list-style-type: none"> <li>very smooth gripping</li> </ul>
1-415-61-00	GRZ 20-16 EP	smooth, with EP coating Shore 90	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>covers all applications of smooth jaws</li> </ul>
1-415-70-00	GRZ 20-16 K	chequered / chamfered	<ul style="list-style-type: none"> <li>sprue centers in chamfered jaw</li> </ul>
1-415-12-00	GRZ 20-16 PK	prism / v-groove	<ul style="list-style-type: none"> <li>for cone-shaped sprues</li> </ul>
1-415-50-00	GRZ 20-16 DB	swiveling	<ul style="list-style-type: none"> <li>for gripping conical sprues</li> <li>automatically fitting to the conicity due to swiveling jaws</li> </ul>
1-415-09-00	GRZ 20-16 A	for customized jaws, each jaw with 2 holes M5	<ul style="list-style-type: none"> <li>for adapting customized jaws</li> <li>hole pitch 16 mm, angle open 4.8°, angle closed -27.3°</li> <li>closing force and opening width depends on customized jaws</li> </ul>
1-415-15-00	GRZ 20-16 C	with sensor PNP / perforated	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 3m, cable</li> </ul>
1-415-16-00	GRZ 20-16 C NPN	with sensor NPN / perforated	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 3m, cable</li> </ul>
1-415-18-00	GRZ 20-16 CS	with sensor PNP / perforated	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-415-24-00	GRZ 20-16 CS NPN	with sensor NPN / perforated	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-415-07-00	GRZ 20-16 RC	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>weight reduced version</li> <li>optimized query</li> <li>direct query, inductive, PNP, NO, 3-pole, 3m, cable</li> </ul>
1-415-21-00	GRZ 20-16 RC NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>weight reduced version</li> <li>optimized query</li> <li>direct query, inductive, NPN, NO, 3-pole, 3m, cable</li> </ul>
1-415-08-00	GRZ 20-16 RCS	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>weight reduced version</li> <li>optimized query</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-415-27-00	GRZ 20-16 RCS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>weight reduced version</li> <li>optimized query</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-415-41-00	GRZ 20-16 SC	with sensor PNP / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, PNP, NO, 3-pole, 3m, cable</li> </ul>
1-415-43-00	GRZ 20-16 SC NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, NPN, NO, 3-pole, 3m, cable</li> </ul>
1-415-42-00	GRZ 20-16 SCS	with sensor PNP / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>
1-415-44-00	GRZ 20-16 SCS NPN	with sensor NPN / saw jaw	<ul style="list-style-type: none"> <li>for demolding sticking sprues</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> </ul>

Continuation on the following page

# 400 | Grippers

## GRZ 20-16 / Gripper Size 20-16 (Continuation)



**Remarks:**

- » closing force measured at point of jaws at 6 bar
- \* dimensions divergent for  
GRZ 20-16 DB: C=120; D=25  
GRZ 20-16 A: C=90; D= depending on used adapter

Description	A [mm]	B [mm]	C* [mm]	D* [mm]	G ["]	L [mm]	Closing Force max. [N]*
GRZ 20-16...	20	43	116	27	G1/8	25	65

Part No.	Description	Jaws made of...	E [mm]	E1 [mm]	Weight [g]
1-415-03-00	GRZ 20-16	zinc-plated Steel	23.5	0	136
1-415-06-00	GRZ 20-16 R	hardcoated Aluminium	22.5	0	99
1-415-60-00	GRZ 20-16 G	zinc-plated Steel	23.5	0	149
1-415-40-00	GRZ 20-16 S	zinc-plated Steel	23	0	143
1-415-30-00	GRZ 20-16 PU	zinc-plated Steel, with PU Pads	20	0	143
1-415-61-00	GRZ 20-16 EP	zinc-plated Steel, with EP coating Shore 90, colour blue	23.5	0	151
1-415-70-00	GRZ 20-16 K	hardcoated Aluminium (chequered jaw) / zinc-plated Steel (contour jaw)	23.5	0	122
1-415-12-00	GRZ 20-16 PK	zinc-plated Steel	23.5	0	151
1-415-50-00	GRZ 20-16 DB	Steel, stainless	23	3,5	176
1-415-09-00	GRZ 20-16 A	zinc-plated Steel	27	-	122
1-415-15-00	GRZ 20-16 C	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	160
1-415-16-00	GRZ 20-16 C NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	160
1-415-18-00	GRZ 20-16 CS	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	178
1-415-24-00	GRZ 20-16 CS NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (regular jaw)	22.5	3	178
1-415-07-00	GRZ 20-16 RC	hardcoated Aluminium	22.5	3	142
1-415-21-00	GRZ 20-16 RC NPN	hardcoated Aluminium	22.5	3	142
1-415-08-00	GRZ 20-16 RCS	hardcoated Aluminium	22.5	3	159
1-415-27-00	GRZ 20-16 RCS NPN	hardcoated Aluminium	22.5	3	159
1-415-41-00	GRZ 20-16 SC	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	164
1-415-43-00	GRZ 20-16 SC NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	164
1-415-42-00	GRZ 20-16 SCS	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	182
1-415-44-00	GRZ 20-16 SCS NPN	hardcoated Aluminium (sensor jaw) / zinc-plated Steel (saw jaw)	23	3	182

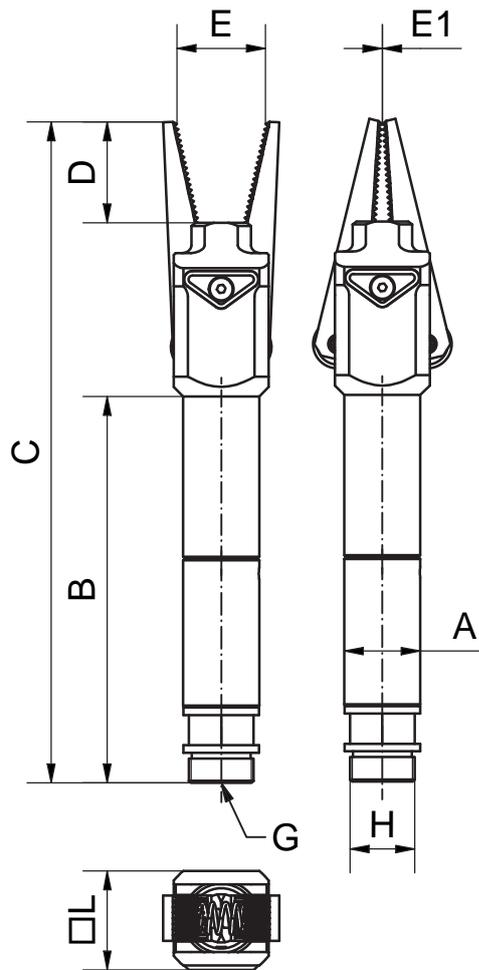
**GRZ 20-16 K / Gripper Size 20-16, boosted**



**Remarks:**

**Application: single-acting gripper with enforced piston for even more holding force.**

- holding force: 117 N
- piston diameter 16 mm
- enforced holding force, +80% compared to GRZ 20-16
- design similar GRZ 20-16
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



Part No.	Description	Ø A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	G ["]	H* [mm]	Weight [g]
1-416-06-00	GRZ K 20-16 R	20	103	176	27	22,5	0	G1/8	M17x1	128

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Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

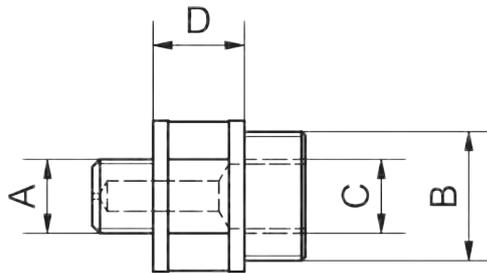
## GRZ AD 20-16 / Gripper Extension Adapter



**Remarks:**

**Application:** allows coaxial connection of extension tube VLR 20 to grippers GRZ 20-16

- optimized version
- air connection is inside the VLR so that the hose can be routed inside
- easy to mount to any standard gripper GRZ 20-16
- air connection G1/8" female thread
- 1/8" thread on the gripper side must be sealed with liquid sealant



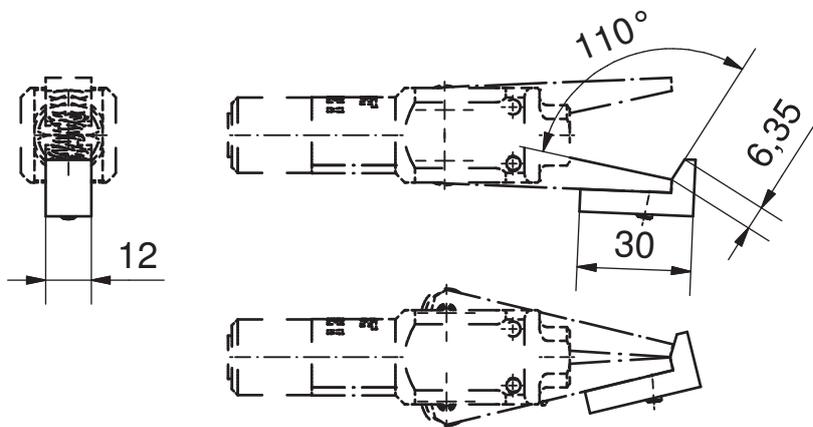
Part No.	Description	A ["]	B [mm]	C ["]	D [mm]	Weight [g]
1-415-03-04-1	GRZ AD 20-16	G1/8	M 17 X 1	G1/8	6	22

## GRZ-20-16 HW / Jaw Hook for GRZ 20-16



**Remarks:**

- Jaw Hook for grippers GRZ 20-16 standard version
- can be mounted at any time
- for form locking gripping



Part No.	Description
1-415-14-00	GRZ 20-16 HW

## GRZ 20-20 R / Gripper with hard coated Aluminium Jaws

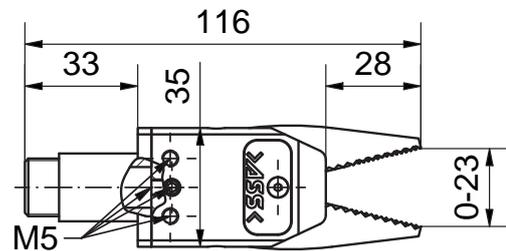
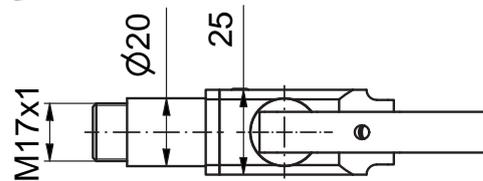
### Remarks:

**Application: universal gripper with highest closing force in its class (clamping Ø 20mm)**

- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- optionally equipped with a sensor bracket and initiator
- indirect query via the gripper jaw position possible (magnet is embedded in gripper jaw)
- body made of anodized aluminum
- jaws made of hardcoated aluminum
- flexible in jaw selection (easy to change jaws)
- compatible with all gripper jaws GRZ 20
- single-acting
- air connection M5
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

### Accessories e.g.:

- Sensor Bracket SH GRZ 20
- Sprue Shifter AAE



Part No.	Description	Closing force max. [N]	Condition of Jaws	Weight [g]
1-417-00-00	GRZ 20-20 R	100	chequered	132

## GRZ 20-20 R,CS,I / Gripper with Sensor, inductive

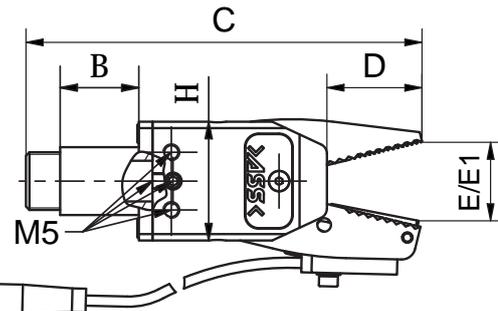
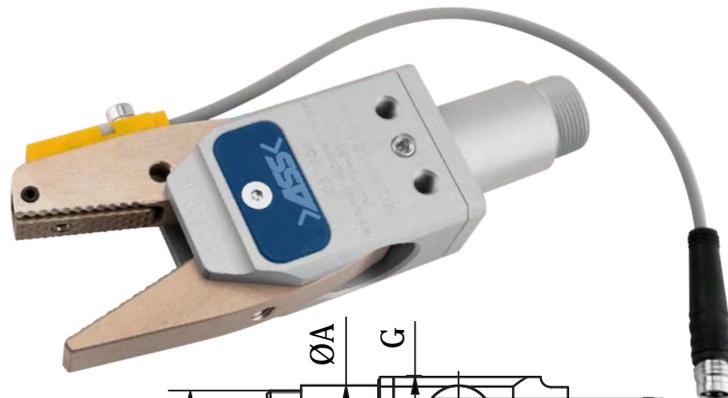
### Remarks:

**Application: universal gripper with sensor and with highest closing force in its class (clamping Ø 20mm)**

- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
- NPN version available as separate Gripper Jaws
- body made of anodized aluminum
- jaws made of hardcoated aluminum
- flexible in jaw selection (easy to change jaws)
- single-acting
- air connection M5
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

### Accessories e.g.:

- Connector KG/KW
- Sprue Shifter AAE



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	H [mm]	Closing force max. [N]	Weight [g]
1-417-30-00	GRZ 20 R,CS,I	20	23	115	27	23	2	M17x1	25	35	100	146

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**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
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Connectors

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Vacuum Cups

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Manifold

**290**  
Adapters for  
Vacuum Cups

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Gripper Arms

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Gripper  
Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## GRZ 20-20 AS / Gripper with adapted Scissors



**Remarks:**

**Application:** Gripper with adapted scissors for cutting tasks.

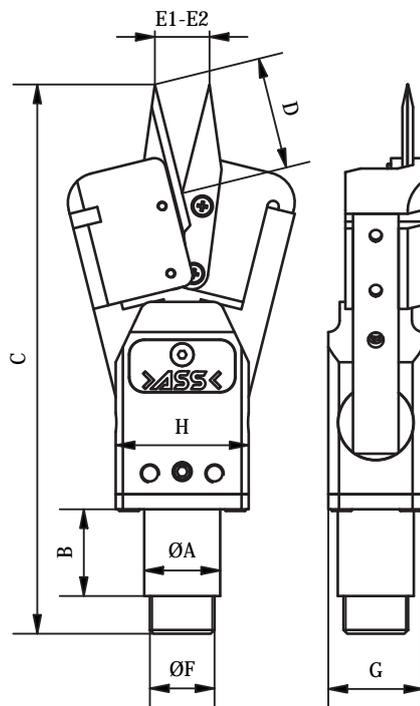
- closing force: 60 N
- sharp blades made of hardened steel
- 2 pistons with diameter 20mm
- gripper jaws close centric, synchronized jaw movement, no floating position
- great flexibility regarding mounting options
- body made of anodized aluminum
- single-acting gripper
- optionally equipped with a sensor bracket and initiator
- indirect query via the gripper jaw position possible (magnet is embedded in gripper jaw)
- air connection M5
  - » closing force measured at point of jaws at 6 bar
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Scope of delivery:**

- 1 x screw
- 2x spare blades

**Accessories e.g.:**

- Spare Blades (1-417-40-03)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	E1 [mm]	F [mm]	G [mm]	Weight [g]
1-417-40-00	GRZ 20-20 AS	20	23	146	30	0	15	M17x1	25	190

**GRZ 20 / Body**

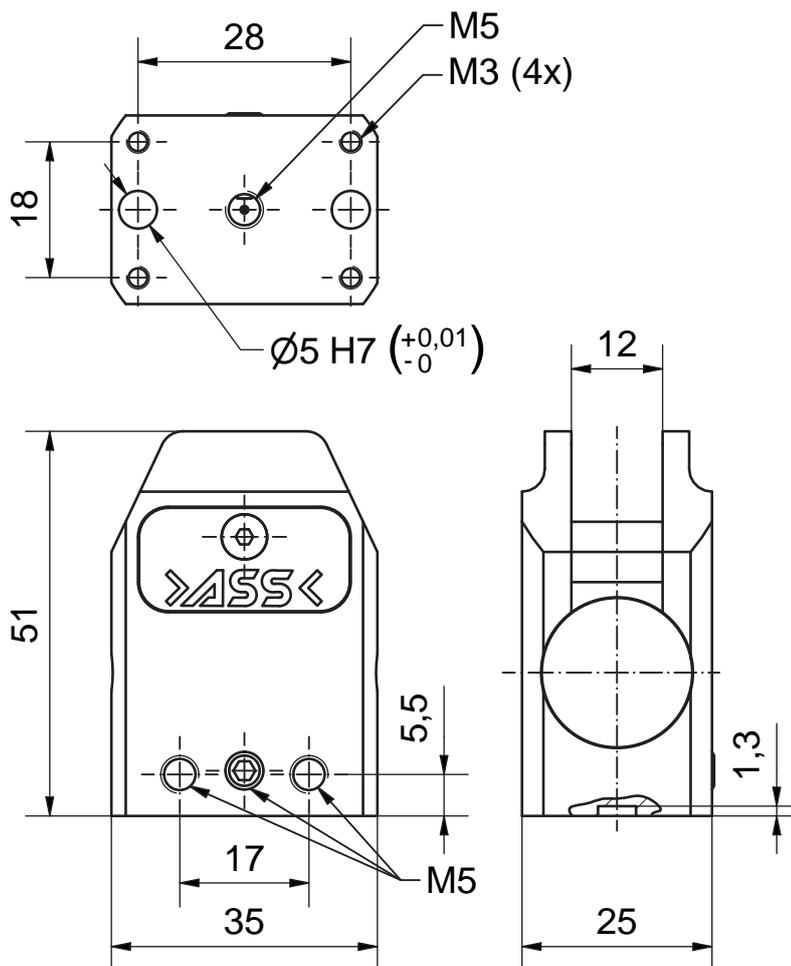
**Remarks:**

**Application: for customizing gripper GRZ 20**

- made of anodized Aluminium
- 2 pistons with diameter 20mm
- all components easy to assemble
- single-acting body

**Accessories e.g.:**

- Adapter GRZ AD 14
- Adapter GRZ AD 20
- Sensor Bracket SH GRZ 20
- all Gripper Jaws Size 20



Part No.	Description	Material	Weight [g]
1-417-80-00	GRZ 20 Body	Aluminium	68

**000**  
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**050**  
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Channel Nuts

**100/115**  
Clamps

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Connectors

**190**  
Profile  
Accessories

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Gripper  
Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

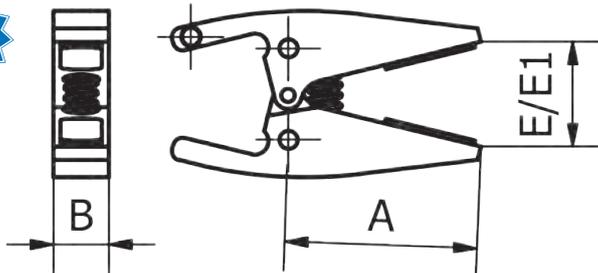
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## GRZ 20 Gripper Jaws / Gripper Jaws Size 20



**Remarks:**

**Application:** Gripper Jaws for creating individual GRZ 20-20, see table for properties of the jaw geometries

- gripper jaws without integrated query optionally can be equipped with a sensor bracket and initiator
- jaw material: hardcoated Aluminium

GRZ 20 BP R



GRZ 20 BP PU



GRZ 20 BP EP



GRZ 20 BP S



GRZ 20 BP SL



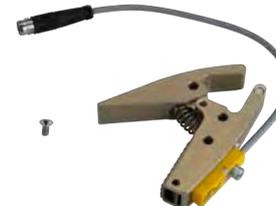
GRZ 20 BP Z



GRZ 20 BP A



GRZ 20 BP R,CS,I  
GRZ 20 BP R,CS,I NPN



GRZ 20 BP PS,CS,I  
GRZ 20 BP PS,CS,I NPN



GRZ 20 BP Z,CS,I  
GRZ 20 BP Z,CS,I NPN



GRZ 20 BP S,CS,I  
GRZ 20 BP S,CS,I NPN



GRZ 20 BP EP,CS,I  
GRZ 20 BP EP,CS,I NPN



GRZ 20 BP EP,CS,I,EP



Part No.	Description	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-417-81-00	GRZ 20 Gripper Jaws R	42	12	23	0	39
1-417-90-00	GRZ 20 Gripper Jaws PU	42	12	23	0	39
1-417-98-00	GRZ 20 Gripper Jaws EP	42	12	23	0	40
1-417-86-00	GRZ 20 Gripper Jaws S	42	12	22	0	38
1-417-87-00	GRZ 20 Gripper Jaws SL	70	12	41	3	61
1-417-85-00	GRZ 20 Gripper Jaws Z	42	12	21	0	36
1-417-84-00	GRZ 20 Gripper Jaws A	41	12	-	-	40
1-417-91-00	GRZ 20 Gripper Jaws R,CS,I	41	12	20	2	53
1-417-95-00	GRZ 20 Gripper Jaws R,CS,I NPN	41	12	20	2	53

## GRZ 20 Gripper Jaws / Gripper Jaws Size 20 (Continuation)

Part No.	Description	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-417-92-00	GRZ 20 Gripper Jaws PS,CS,I	42	12	26	1	53
1-417-99-00	GRZ 20 Gripper Jaws PS,CS,I NPN	42	12	26	1	53
1-417-93-00	GRZ 20 Gripper Jaws Z,CS,I	41	12	20	2	52
1-417-96-00	GRZ 20 Gripper Jaws Z,CS,I NPN	41	12	20	2	52
1-417-94-00	GRZ 20 Gripper Jaws S,CS,I	41	12	20	2	52
1-417-97-00	GRZ 20 Gripper Jaws S,CS,I NPN	41	12	20	2	52
1-417-79-00	GRZ 20 Gripper Jaws EP,CS,I	41	12	20	1	53
1-417-78-00	GRZ 20 Gripper Jaws EP,CS,I NPN	41	12	20	1	53
<b>New</b> 1-417-76-00	GRZ 20 Gripper Jaws EP,CS,I,EP	41	12	20	1	53

Part No.	Description	Jaw Type	Application / Remarks
1-417-81-00	GRZ 20 Gripper Jaws R	chequered	• standard version
1-417-90-00	GRZ 20 Gripper Jaws PU	Polyurethane pads	• very smooth gripping
1-417-98-00	GRZ 20 Gripper Jaws EP	smooth, with EP coating Shore 90, colour blue	• very smooth gripping • covers all applications of smooth jaws • for more about EP coating, see category 990
1-417-86-00	GRZ 20 Gripper Jaws S	saw jaws	• for demolding stinking sprues
1-417-87-00	GRZ 20 Gripper Jaws SL	saw jaws, long jaws	• for demolding stinking sprues • extra long jaws
1-417-85-00	GRZ 20 Gripper Jaws Z	teethed, chamfered	• for halfround sprues or stiffening ribs
1-417-84-00	GRZ 20 Gripper Jaws A	for customized jaws, each jaw with 2 holes M4	• for adapting customized jaws • hole pitch 15 mm • angle opened 27.6°, angle closed -4.5° • closing force and opening width depends on customized jaws
1-417-91-00	GRZ 20 Gripper Jaws R,CS,I	with sensor PNP / chequered	• direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-95-00	GRZ 20 Gripper Jaws R,CS,I NPN	with sensor NPN / chequered	• direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-92-00	GRZ 20 Gripper Jaws PS,CS,I	with sensor PNP / contour jaw	• contour jaw for semi-circular and large sprues • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-99-00	GRZ 20 Gripper Jaws PS,CS,I NPN	with sensor NPN / contour jaw	• contour jaw for semi-circular and large sprues • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-93-00	GRZ 20 Gripper Jaws Z,CS,I	with sensor PNP / teethed, chamfered	• for semicircular sprues or bridges • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-96-00	GRZ 20 Gripper Jaws Z,CS,I NPN	with sensor NPN / teethed, chamfered	• for semicircular sprues or bridges • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-94-00	GRZ 20 Gripper Jaws S,CS,I	with sensor PNP / saw jaw	• for demolding stinking sprues • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-97-00	GRZ 20 Gripper Jaws S,CS,I NPN	with sensor NPN / saw jaw	• for demolding stinking sprues • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
1-417-79-00	GRZ 20 Gripper Jaws EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	• very smooth gripping • for more information about EP coating, see category 990 • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8
1-417-78-00	GRZ 20 Gripper Jaws EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	• very smooth gripping • for more information about EP coating, see category 990 • direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8
<b>New</b> 1-417-76-00	GRZ 20 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	• very smooth gripping, EP coating on both sides, optimizes the adhesion • for more about EP coating, see category 990 • direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8

The EP-coating is an elastomer, so all dimensions are nominal.

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Connectors

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Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Gripper  
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Gripper Fingers

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Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## AD 20 GRZ 20 / AD 14 GRZ 20 U / Adapter

AD 20 GRZ 20



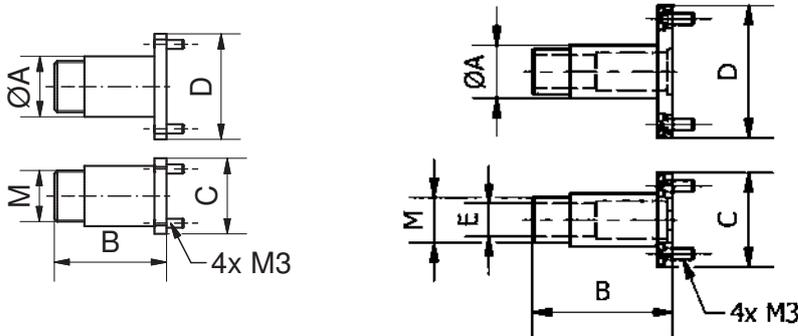
AD 14 GRZ 20 U



**Remarks:**

**Application: adapts the GRZ 20 to GRZ 20-14 or GRZ 20-20**

- AD 14 GRZ 20
  - with integrated air duct
  - compatible to all versions of VLR 14
  - Scope of Delivery: seal ring and screws included
- AD 20 GRZ 20
  - without air duct
  - compatible to all versions of VLR 20
  - Scope of Delivery: screws included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E Air Connection	M	Material	Weight [g]
1-417-07-00	AD 14 GRZ 20 U	14	37	25	35	M5	M12x1	Aluminium	22
1-417-02-00	AD 20 GRZ 20	20	37	25	35	G1/8	M17x1	Aluminium	25

## SH GRZ 20 / Sensor Bracket



Application example:  
GRZ 20-20 R upgraded with sensor bracket and sensor



**Remarks:**

- every GRZ 20 Gripper Jaws contains magnets
- this Sensor Bracket is for mounting sensor MFS T2 3,7 for monitoring 2 basic positions

**Accessories e.g.:**

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)

Part No.	Description	Material	Weight [g]
1-417-04-00	SH GRZ 20	Polyamide	7

**AD GRZ 20 S / Adapter, sidwise connection**



**Remarks:**

**Application: for grippers of the GRZ 20 series sidwise**

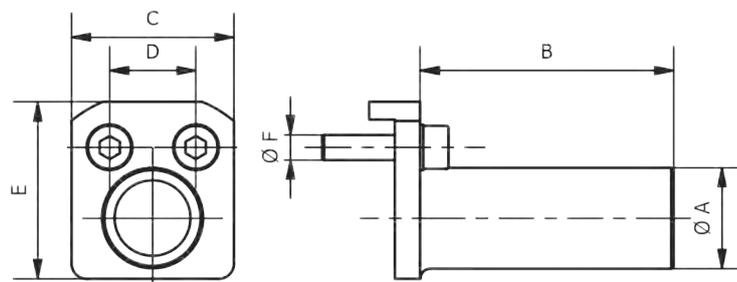
- allows various applications

**Scope of delivery:**

- incl. mounting material



**Application example**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-417-09-00	AD 20 GRZ 20 S	20	50	32	17	35	M5	Aluminium	41

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Channel Nuts

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Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
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Manifold

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Adapters for  
Vacuum Cups

**300**  
Gripper Arms

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Gripper  
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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

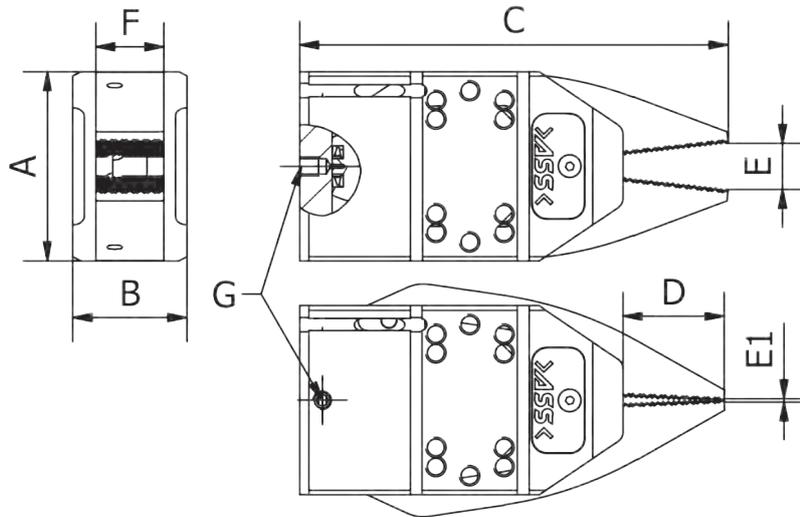
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## GRZ 25 / Grippers Size 25



**Remarks:**

**Application: strong gripper with the same high closing force as GRZ 32 in a more compact design**

- single-acting gripper
- C-groove is integrated in the gripper body
- 2 pistons, Ø 25 mm
- easy to change jaws
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Adapter AP PGR 50
- Adapter AP HEU 16

GRZ 25 R



GRZ 25 R,CS,I



Part No.	Description	Jaw Type	Application / Remarks	Jaws made of...
1-421-00-00	GRZ 25 R	chequered	<ul style="list-style-type: none"> <li>• standard version</li> <li>• optional query, C-groove is integrated in the gripper body</li> </ul>	anodized Aluminium
1-421-30-00	GRZ 25 R,CS,I	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>• direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> <li>• NPN version available as separate Gripper Jaws</li> </ul>	anodized Aluminium

Part No.	Description	A	B	C	D	E	E1	F	G	Closing force max. [N]	Weight [g]
		[mm]									
1-421-00-00	GRZ 25 R	50	30	112	27	12	0	18	M5	350	290
1-421-30-00	GRZ 25 R,CS,I	50	30	112	27	11	1	18	M5	350	306

**GRZ 25 Body**

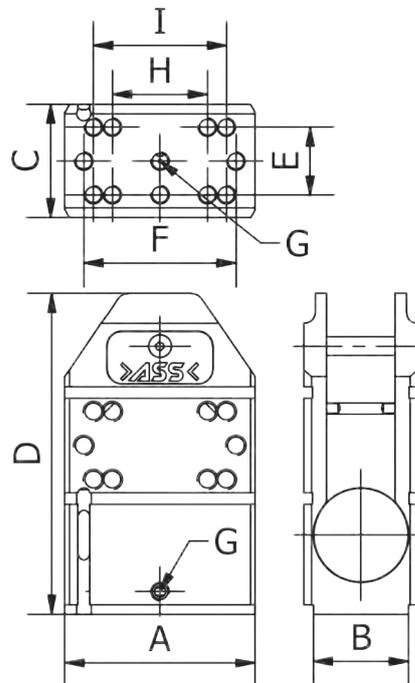
**Remarks:**

**Application: for customizing gripper GRZ 25**

- single-acting
- made of anodized Aluminium
- 2 pistons, Ø 25
- all components easy to assemble
- single-acting gripper body
- C-groove is integrated in the gripper body

**Accessories e.g.:**

- all GRZ 25 Gripper Jaws
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Adapter AP PGR 50
- Adapter AP HEU 16



Part No.	Description	A	B	C	D	E	F	G	H	I	Weight [g]
		[mm]									
1-421-80-00	GRZ 25 Body	50	25	30	85	18	40	M5	25	25	177

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

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Clamps

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Connectors

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Electrics and  
Sensors

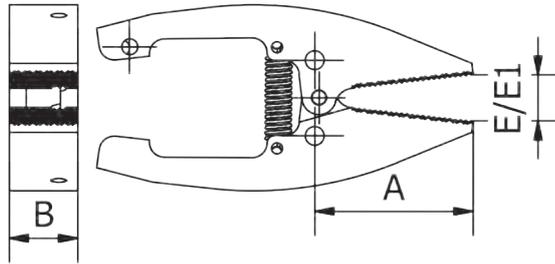
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## GRZ 25 Gripper Jaws / Gripper Jaws Size 25



**Remarks:**

**Application: Gripper Jaws for creating individual GRZ 25, see table for properties of the jaw geometries**

- jaws made of anodized Aluminium
- integrated permanent magnet
- indirect query of jaws possible

GRZ 25 BP R



GRZ 25 BP R,EP



GRZ 25 BP RL



GRZ 25 BP R,CS,I  
GRZ 25 BP R,CS,I NPN



GRZ 25 BP EP,CS,I  
GRZ 25 BP EP,CS,I NPN



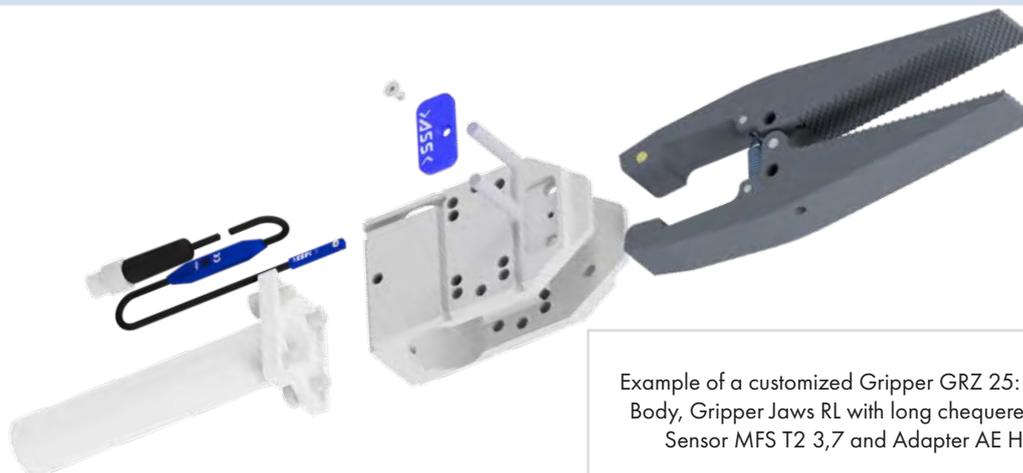
GRZ 25 BP EP,CS,I,EP



## GRZ 25 Gripper Jaws / Gripper Jaws Size 25 (Continuation)

Part No.	Description	Application / Remarks
1-421-81-00	GRZ 25 Gripper Jaws R	<ul style="list-style-type: none"> <li>standard version</li> <li>optional query, C-groove is integrated in the gripper body</li> </ul>
1-421-84-00	GRZ 25 Gripper Jaws R,EP	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>for more information about EP coating, see category 990</li> <li>optional query, C-groove is integrated in the gripper body</li> </ul>
1-421-90-00	GRZ 25 Gripper Jaws RL	<ul style="list-style-type: none"> <li>standard version with extra long jaws</li> <li>optional query, C-groove is integrated in the gripper body</li> </ul>
1-421-91-00	GRZ 25 Gripper Jaws R,CS,I	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-421-94-00	GRZ 25 Gripper Jaws R,CS,I NPN	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-421-93-00	GRZ 25 Gripper Jaws EP,CS,I	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>for more information about EP coating, see category 990</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>
1-421-95-00	GRZ 25 Gripper Jaws EP,CS,I NPN	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>for more information about EP coating, see category 990</li> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8</li> </ul>
<b>New</b> 1-421-97-00	GRZ 25 Gripper Jaws EP,CS,I,EP	<ul style="list-style-type: none"> <li>very smooth gripping, EP coating on both sides, optimizes the adhesion</li> <li>for more about EP coating, see category 990</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>

Part No.	Description	Jaw Type	A [mm]	B [mm]	E [mm]	E1 [mm]	Weight [g]
1-421-81-00	GRZ 25 Gripper Jaws R	chequered	42	18	12	0	114
1-421-84-00	GRZ 25 Gripper Jaws R,EP	chequered / with EP coating Shore 90, colour blue	42	18	12	0	119
1-421-90-00	GRZ 25 Gripper Jaws RL	chequered, long jaws	89	18	28	0	174
1-421-91-00	GRZ 25 Gripper Jaws R,CS,I	with sensor PNP / chequered	42	18	11	1	130
1-421-94-00	GRZ 25 Gripper Jaws R,CS,I NPN	with sensor NPN / chequered	42	18	11	1	130
1-421-93-00	GRZ 25 Gripper Jaws EP,CS,I	with sensor PNP / with EP coating Shore 90, colour blue	41	18	11	1	131
1-421-95-00	GRZ 25 Gripper Jaws EP,CS,I NPN	with sensor NPN / with EP coating Shore 90, colour blue	41	18	11	1	131
<b>New</b> 1-421-97-00	GRZ 25 Gripper Jaws EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	41	18	11	1	131



Example of a customized Gripper GRZ 25: GRZ 25 Body, Gripper Jaws RL with long chequered jaws, Sensor MFS T2 3,7 and Adapter AE HEU.

# 400 | Grippers

## GRZ 32 / Grippers Size 32



**Remarks:**

**Application:** strong, double-acting gripper, see table for properties of the jaw geometries

- piston Ø 32 mm
- cylinder can be monitored, only at GRZ 32 PUA
- best usage with profiles X and JU
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories for example:**

- Sensor ICS 8 (Part No. 1-808-36-00)

GRZ 32



GRZ 32 C



GRZ 32 CS



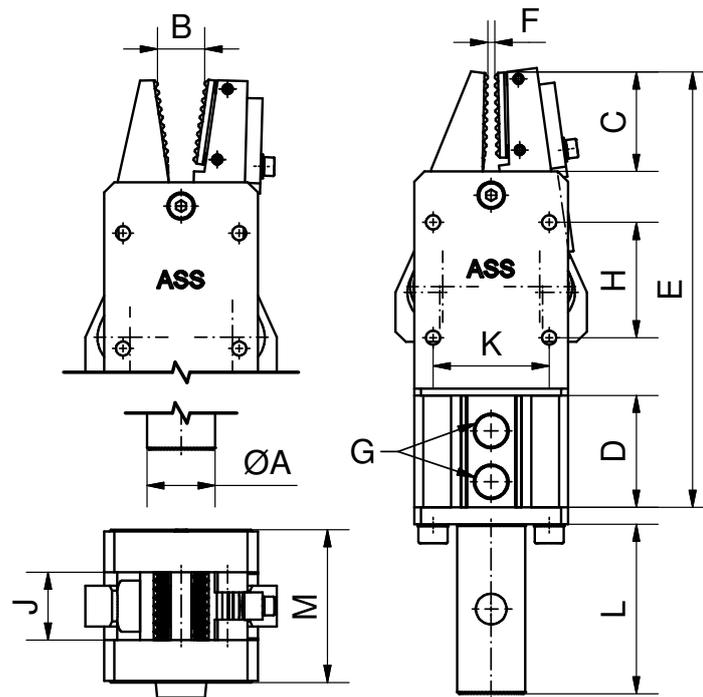
GRZ 32 PUA



GRZ 32 EP,CS,I,EP



## GRZ 32 / Grippers Size 32 (Continuation)



Description	A [mm]	C [mm]	D [mm]	G ["]	H [mm]	J [mm]	K [mm]	L [mm]	M [mm]	Closing force max. [N]
GRZ 32...	20	30	33	1/8	34	20	34	50	44	350

Part No.	Description	Jaw Type	Application / Remarks
1-420-03-00	GRZ 32	chequered	<ul style="list-style-type: none"> <li>e.g. for gripping tasks where a high closing force is required</li> <li>optional query, C-groove is integrated</li> </ul>
1-420-06-00	GRZ 32 C	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 3m, cable</li> <li>jaw with large-scale query</li> </ul>
1-420-15-00	GRZ 32 C NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 3m, cable</li> <li>jaw with large-scale query</li> </ul>
1-420-09-00	GRZ 32 CS	with sensor PNP / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> <li>jaw with large-scale query</li> </ul>
1-420-08-00	GRZ 32 CS NPN	with sensor NPN / chequered	<ul style="list-style-type: none"> <li>direct query, inductive, NPN, NO, 3-pole, 0.16m, plug M8 + 2m extension cable</li> <li>jaw with large-scale query</li> </ul>
1-420-10-00	GRZ 32 PUA	Polyurethane pads	<ul style="list-style-type: none"> <li>very smooth gripping</li> <li>optional query, C-groove is integrated</li> </ul>
<b>New</b> 1-420-40-00	GRZ 32 EP,CS,I,EP	with sensor PNP with EP coating Shore 90, colour blue / with EP coating Shore 90, colour blue	<ul style="list-style-type: none"> <li>very smooth gripping, EP coating on both sides, optimizes the adhesion</li> <li>for more about EP coating, see category 990</li> <li>direct query, inductive, PNP, NO, 3-pole, 0.16m, plug M8</li> </ul>

Part No.	Description	Jaws made of...	E [mm]	B [mm]	F [mm]	Weight [g]
1-420-03-00	GRZ 32	zinc-plated Steel	127	12	1	628
1-420-06-00	GRZ 32 C	zinc-plated Steel	129	11	1	686
1-420-15-00	GRZ 32 C NPN	zinc-plated Steel	129	11	1	686
1-420-09-00	GRZ 32 CS	zinc-plated Steel	127	11	1	705
1-420-08-00	GRZ 32 CS NPN	zinc-plated Steel	127	11	1	705
1-420-10-00	GRZ 32 PUA	zinc-plated Steel with PU Pads	137	9.3	0	670
<b>New</b> 1-420-40-00	GRZ 32 EP,CS,I,EP	zinc-plated Steel with EP coating	127	13	1	705

The EP-coating is an elastomer, so all dimensions are nominal.

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Nipper Bodies

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# 400 | Grippers

## AD GRZ 32 S / Adapter for mounting GRZ 32 sidewise



**Remarks:**

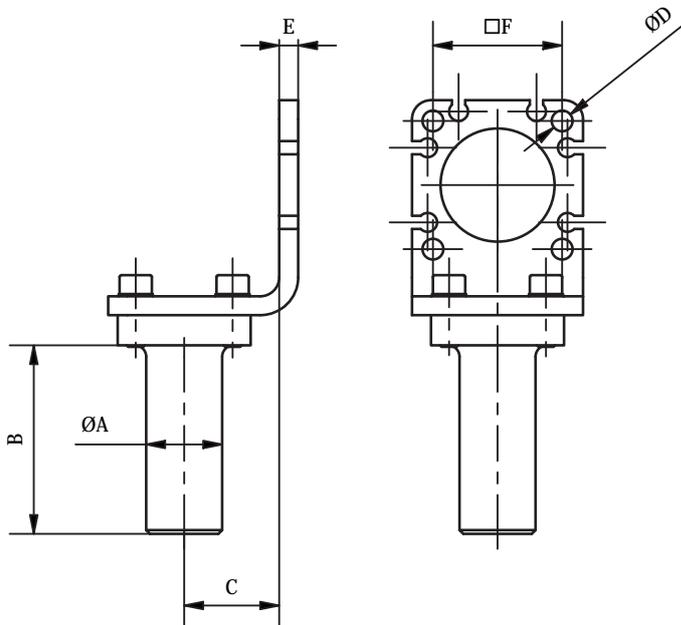
**Application: for mounting grippers GRZ 32 sidewise**

- offers various possible uses
- The drawing shows the adapter with the pin that is already attached to the GRZ 32

**Scope of delivery:**

- including screws
- exclusive cones

**Application example**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-420-20-00	AD GRZ 32 S	20	50	25	5,5	5	34	Aluminium	90

## PGR-P / Parallel Gripper, pneumatic



### Remarks:

**Application:** e.g. for precise gripping or inserting applications

- load-bearing and low-play T-slot guide for safe and precise handling with high load ratings
  - drive concept for maximum gripping force
  - housing made of high-strength aluminum alloy for minimum weight and high stiffness
  - double acting: can be used as external or internal gripper
  - small construction volume for minimal contours
  - centering possibilities on the gripping jaws
  - versatile adaptations for flexible assembling
  - power supply on two gripper sides possible; also hoseless direct connection possible
  - integrated permanent magnet for sensing end position (see accessories)
  - precise sensing of jaw position by adapting induction field sensors (see accessories)
- » maximum air pressure is 6 bar, use dry and filtered air only

### Drawing:

*PGR-P Opening:*

A1 main connection

A2 direct connection M3

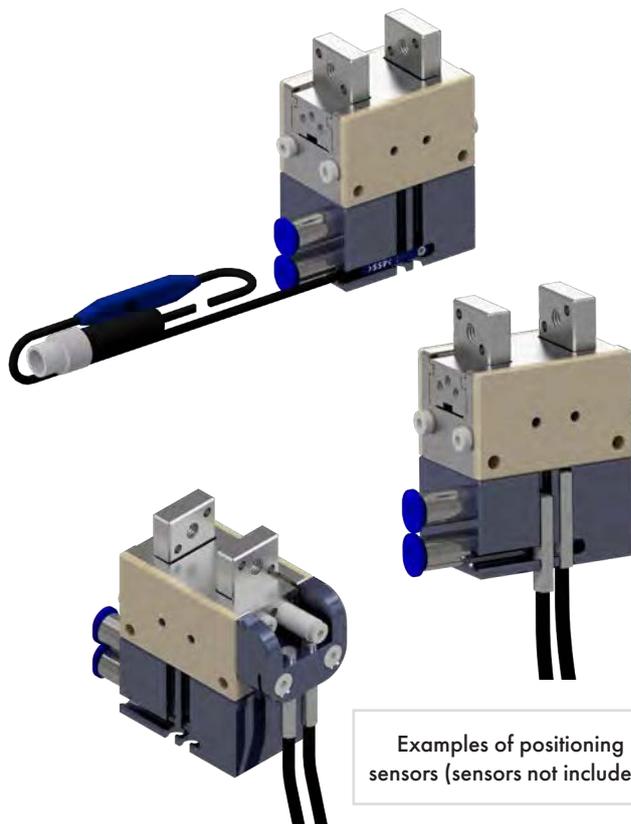
*PGR-P Closing:*

B1 main connection

B2 direct connection M3

### Scope of Delivery:

- 1 x PGR-P
- 2x centering sleeve
- 2x air connections
- 2x plug
- 2x o-rings
- 1 x sensor bracket with mounting material (Sensor IRK 4 not included)



Examples of positioning sensors (sensors not included)

### Accessories e.g.:

- GB-PGR - Unmachined Jaws (blanks) for Parallel Gripper
- KUG - Glue and Polyurethane Pad: PU on the gripping surface increases the friction (category 990)
- AP PGR - adaptation of the parallel gripper to the respective extension tube
- MFS T2 - magnetic field sensor with 2 switching points „teachable“ for the end position sensing of the piston rod, easy to mount via the integrated C-slots (Part No. 1-808-30-00)
- ICS 8 - 3-pole magnetic field sensor for end position sensing of the piston rod, easy to install via the integrated C-slots, basic and working position requires one sensor each (Part No. 1-808-36-00)
- IRK 4 - induction field sensors for the end position detection of the gripper jaws, basic and working position requires one sensor each, sensor bracket in the scope of delivery (Part No. 1-808-02-00)
- AS-P PGR-P - Sensor Bracket Precise mounting kit: complete set for querying the exact jaw position using induction field sensors

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**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

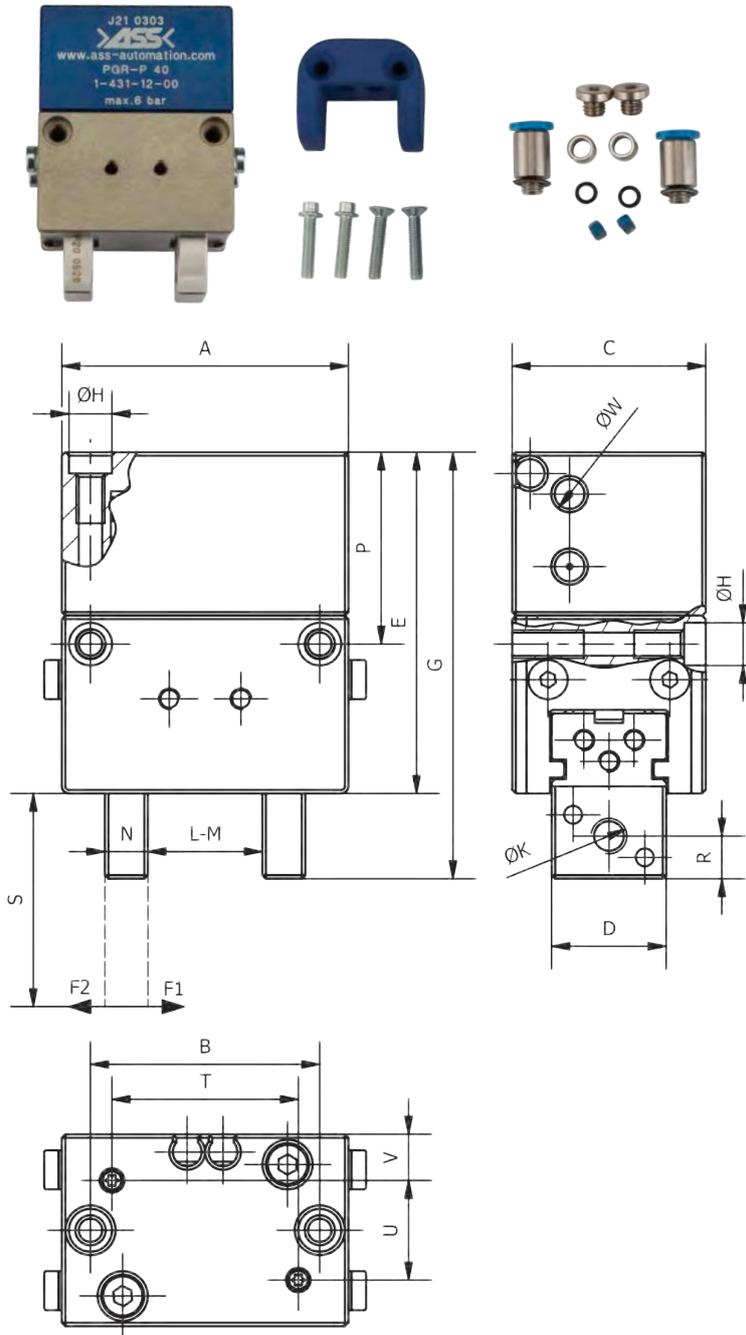
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## PGR-P / Parallel Gripper, pneumatic (Continuation)



Part No.	Description	Closing force F1 max. [N]	Opening force F2 max. [N]	Air connection	Stroke per jaw [mm]	Hose connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	
1-431-06-00	PGR-P 25	35	40	M3	3	3/0.5	26	20	19	10	35	43.2	<b>New</b>
1-431-09-00	PGR-P 32	70	80	M5	4	4/3	32	25	23	12	38.8	49	
1-431-12-00	PGR-P 40	140	155	M5	6	4/3	40	32	27	16	48	60	
1-431-15-00	PGR-P 50	180	210	M5	8	6/4	50	40	31	18	57.5	71.5	
1-431-18-00	PGR-P 64	310	340	M5	10	6/4	64	52	36	20	67	82.9	

Part No.	Description	H [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	R [mm]	S [mm]	T [mm]	U [mm]	V [mm]	W [mm]	Weight [g]	
1-431-06-00	PGR-P 25	M3/Ø5	M4	17	11	4	19.7	4	32	14.5	14.5	3.5	M3	60	<b>New</b>
1-431-09-00	PGR-P 32	M4	M5	22	14	5	22.5	5	40	20	8.5	3	M5	100	
1-431-12-00	PGR-P 40	M4	M5	28	16	6	27	6	50	26	14	6.5	M5	184	
1-431-15-00	PGR-P 50	M5	M6	34	18	8	31	7	64	33	16	7.5	M5	310	
1-431-18-00	PGR-P 64	M5	M8	44	24	10	32.5	8	80	47	16	10	M5	530	

## AS-P PGR-P / Sensor Bracket Precise for PGR-P

### Remarks:

- precise sensing of jaw position by adaptive induction field sensors

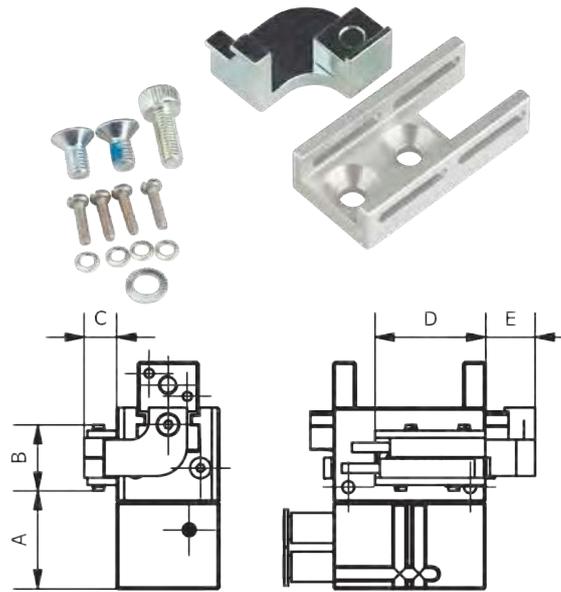
### Scope of Delivery:

- 1 x sensor bracket
- 1 x cam switch
- screws

### Accessories:

- Sensor IE AL K (Part No. 1-808-38-00)

### Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-431-09-20	AS-P PGR-P 32	18.8	17.5	8.5	25	11	13
1-431-12-20	AS-P PGR-P 40	26	17.5	8.5	29	13	18
1-431-15-20	AS-P PGR-P 50	33.5	17.5	8.5	34	19	28
1-431-18-20	AS-P PGR-P 64	40.8	17.5	8.5	31	21	33

## GB PGR / Unmachined Jaws for Parallel Gripper

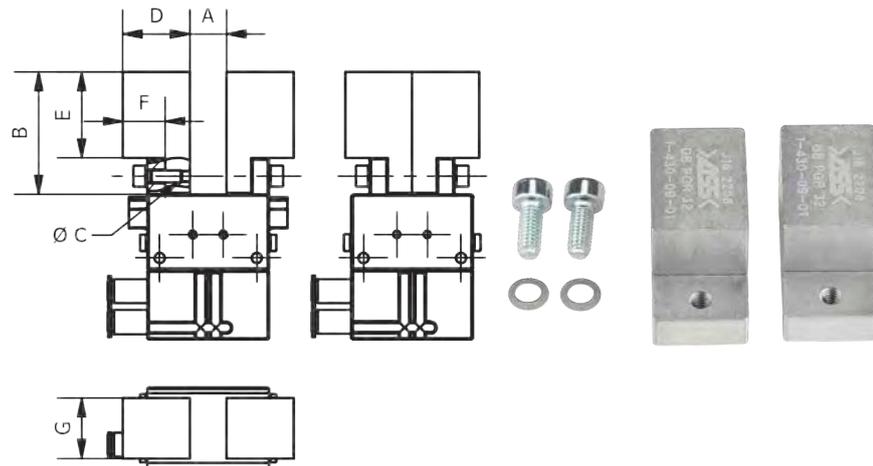
### Remarks:

**Application: blank jaws for customizing PGR-P jaws**

- fits for PGR-P and PGR-plus
- made of Aluminium, smooth surface
- » sold in pairs

### Accessories e.g.:

- PU Pad + Glue KUG



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Material	Weight [g]
1-430-03-01	GB PGR 20	4	20,5	M3	13	12,4	8,5	11	Aluminium	15
1-430-06-01	GB PGR 25	6	25,5	M3	15	17,4	9,5	12	Aluminium	24
1-430-09-01	GB PGR 32	8	32,5	M4	19	22,4	12	16	Aluminium	49
1-430-12-01	GB PGR 40	12	40,5	M4	22	28,4	14	20	Aluminium	85
1-430-15-01	GB PGR 50	16	50,5	M5	27	36,4	18	22	Aluminium	145
1-430-18-01	GB PGR 64	20	64,5	M6	34	48,4	22	24	Aluminium	261

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Micro System

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PA-Forming  
Others

# 400 | Grippers

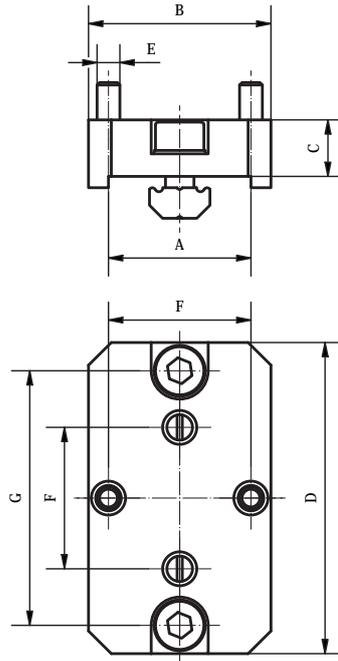
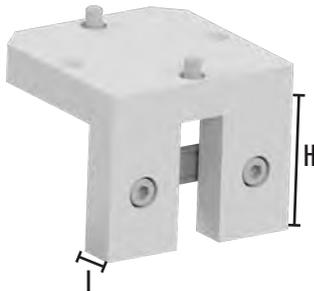
## AP-P PGR / Adapter for PGR-P and PGR for mounting to profiles



AP-P PGR 20-50



AP-P PGR 64



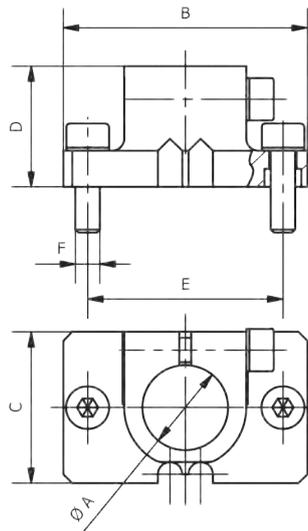
**Remarks:**

**Application:** direct adaptation of the PGR-P or PGR to a profile

- PGR-P and PGR can be mounted lengthwise and crosswise to the profile, always symmetrically to the profile
- the adapter plate enables a direct connection to the respective profile
- can be used with or without bushings
- suitable for PGR-P and PGR-plus
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	for profile	Material	Weight [g]
1-435-20-00	AP-P PGR 20	25	30	12	40	M3	15	31	-	-	X	Al	43
1-435-21-00	AP-P PGR 25	25	30	12	48	M3	20	38	-	-	X	Al	53
1-435-22-00	AP-P PGR 32	25	32	12	55	M4	25	45	-	-	X	Al	64
1-435-23-00	AP-P PGR 40	25	40	12	60	M4	32	50	-	-	X	Al	82
1-435-24-00	AP-P PGR 50	25	50	14	70	M5	40	60	-	-	X	Al	147
1-435-25-00	AP-P PGR 64	-	64	12	64	M5	52	40	40	12	JU	Al	213

## AP PGR / Mounting Bracket for PGR-P and PGR



**Remarks:**

**Application:** adapts Parallel Gripper on VLR extension tubes

- can be used with or without bushings
- suitable for PGR-P and PGR-plus

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-435-03-00	AP PGR 20	10	20	18	15	15	M2,5	Aluminium	10
1-435-06-00	AP PGR 25	10	26	18	15	20	M3	Aluminium	11
1-435-09-00	AP PGR 32	14	32	22	17	25	M4	Aluminium	18
1-435-12-00	AP PGR 40	14	40	25	17	32	M4	Aluminium	28
1-435-15-00	AP PGR 50	20	50	30	20	40	M5	Aluminium	53
1-435-18-00	AP PGR 64	20	64	35	20	52	M5	Aluminium	94

## PGR / Parallel Gripper

### Remarks:

- for precise gripping or inserting applications
- PGR-plus: monitoring of two end-positions with MFS T2, not for PGR-plus 20
- double-acting
- Sensor IRK 4

### Scope of Delivery:

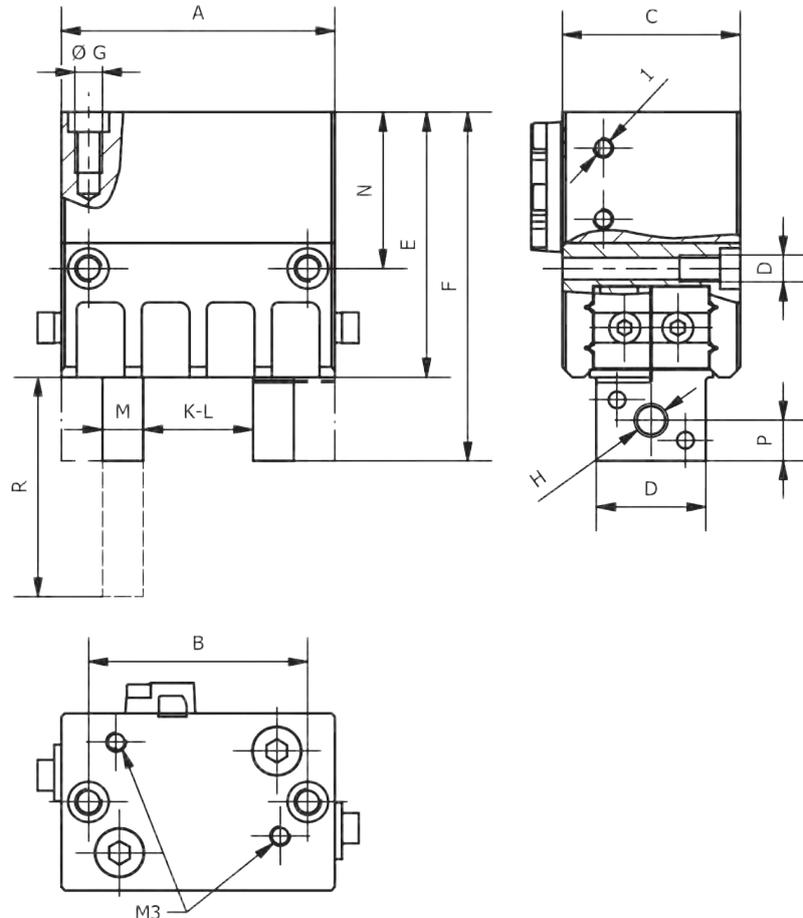
- PGR / parallel gripper without jaws
- incl. mounting material
- air connector (see table)

### Drawing:

- 1 air port
- R max. jaw length

### Accessories:

- Blank Jaws AP-PGR
- PU Pad + Glue KUG
- Adapter AP PGR
- Sensor IRK 4  
for PGR-plus 32/40/50/64
- Sensor IRK 4.4  
for PGR-plus 20/25



Part No.	Description	Closing force max. [N]	Opening force max. [N]	Air connection	Stroke [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
1-430-03-00-1	PGR-plus 20	34	30	M3	2x2	20	15	16	9	25	33
1-430-06-00-1	PGR-plus 25	38	32	M3	2x3	26	20	18	10	26	34
1-430-09-00-1	PGR-plus 32	80	70	M5	2x4	32	25	22	12	33	43
1-430-12-00-1	PGR-plus 40	135	110	M5	2x6	40	32	26	16	39	51
1-430-15-00-1	PGR-plus 50	215	195	M5	2x8	50	40	30	18	46	60
1-430-18-00-1	PGR-plus 64	300	280	M5	2x10	64	52	35	20	54	70

Part No.	Description	G [mm]	H [mm]	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	R [mm]	Tube Connector	Weight [g]
1-430-03-00-1	PGR-plus 20	M2,5	M4	13	9	3,5	14,4	4	25	3/0.5	40
1-430-06-00-1	PGR-plus 25	M3	M4	17	11	4	16,2	4	32	3/0.5	61
1-430-09-00-1	PGR-plus 32	M4	M5	22	14	5	19,7	5	40	4/3	109
1-430-12-00-1	PGR-plus 40	M4	M5	28	16	6	23	6	50	4/3	189
1-430-15-00-1	PGR-plus 50	M5	M6	34	18	8	27,2	7	64	6/4	314
1-430-18-00-1	PGR-plus 64	M5	M8	44	24	10	30	8	80	6/4	544

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**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
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**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

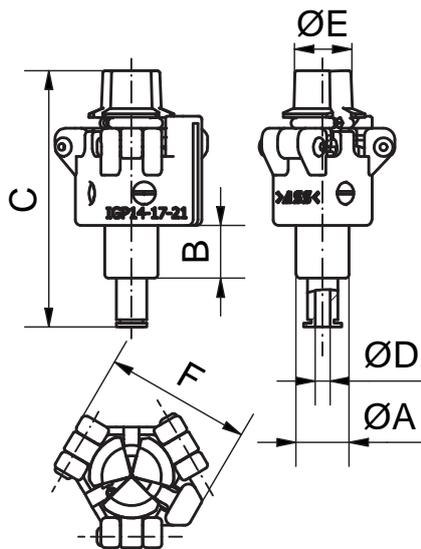
**990**  
PA-Forming  
Others

# 400 | Grippers

## IGP 14 / ID Gripper

IGP 14 EP

IGP 14



**Remarks:**

**Application: e.g. for gripping in the interior of sensitive components, clamping diameter 14 mm**

- compact design
- single-acting
- gentle gripping
- extreme light weight
- made of Polyamide
- optional monitoring of basic and/or working position
- operating Temperature -40 °C up to +80 °C
- air connection diameter 4/3
- » maximum air pressure is 6 bar, use dry and filtered air only

**ID Gripper IGP 14 EP suitable for very sensible parts and covers all applications of the regular ID Gripper IGP 14**

- » EP coated jaws:
  - EP: Elastomere Polyurethane
  - very gentle gripping
  - coating consists of a high strength, slip and abrasion resistant Elastomere Polyurethane
  - Shore A Hardness (+/- 5): 60
  - Colour Black
- » for more information about EP coating see category 990

**Accessories e.g.:**

- use only with filter FSL 4 (Part No. 1-852-26-00)
- sensor MFS T2 (Part No. 1-808-30-00)

Part No.	Description	EP Coating Shore 60 A	A [mm]	B [mm]	C [mm]	D [mm]	Ø E [mm] Grip Area	F [mm]	Suggested payload max. [g]	Weight [g]
1-472-00-00	IGP 14-8-12	-	14	14	68	4	8-12	37	100	20
1-472-01-00	IGP 14-11-15	-	14	14	68	4	11-15	37	100	19
1-472-02-00	IGP 14-14-18	-	14	14	68	4	14-18	37	100	21
1-472-03-00	IGP 14-17-21	-	14	14	68	4	17-21	37	100	22
1-472-04-00	IGP 14-20-24	-	14	14	68	4	20-24	37	100	22
1-472-05-00	IGP 14-23-27	-	14	14	68	4	23-27	37	100	23
1-473-00-00	IGP 14-10-14 EP	x	14	14	68	4	10-14	37	100	20
1-473-01-00	IGP 14-13-17 EP	x	14	14	68	4	13-17	37	100	20
1-473-02-00	IGP 14-16-20 EP	x	14	14	68	4	16-20	37	100	20
1-473-03-00	IGP 14-19-23 EP	x	14	14	68	4	19-23	37	100	22
1-473-04-00	IGP 14-22-26 EP	x	14	14	68	4	22-26	37	100	23
1-473-05-00	IGP 14-25-29 EP	x	14	14	68	4	25-29	37	100	23

## IGP 20 / ID Gripper

**Application: e.g. for gripping in the interior of sensitive components, clamping diameter 20 mm**

- single-acting
- gentle gripping
- extreme light weight
- made of Polyamide
- optional monitoring of basic and/or working position
- operating Temperature -40 °C up to +80 °C
- air connection diameter 4/3
- » maximum air pressure is 6 bar, use dry and filtered air only

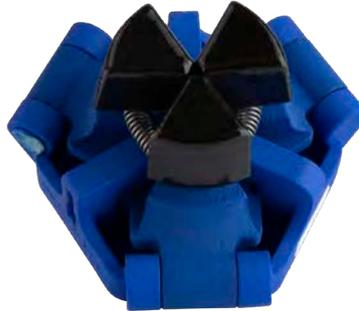
**ID Gripper IGP 20 EP suitable for very sensible parts and covers all applications of the regular ID Gripper IGP 20**

- » EP coated jaws:
  - EP: Elastomere Polyurethane
  - very gentle gripping
  - coating consists of a high strength, slip and abrasion resistant Elastomere Polyurethane
  - Shore A Hardness (+/- 5): 60
  - Colour Black
- » for more information about EP coating see category 990

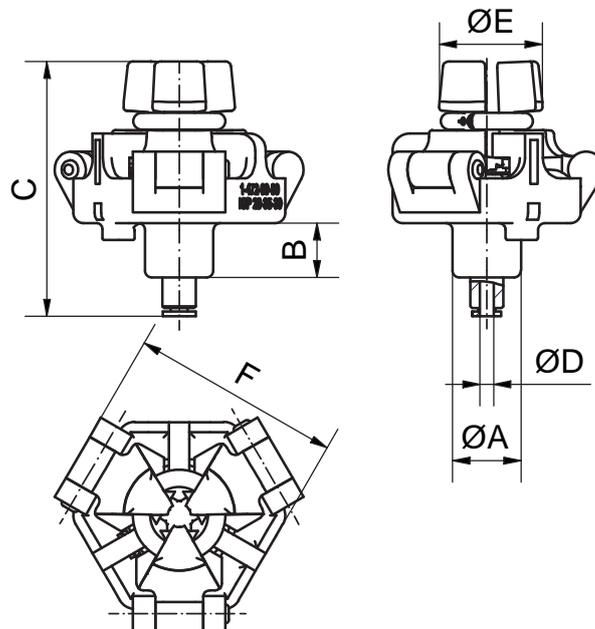
**Accessories e.g.:**

- use only with filter FSL 4 (Part No. 1-852-26-00)
- sensor MFS T2 (Part No. 1-808-30-00)

IGP 20 EP



IGP 20



Part No.	Description	EP Coating Shore 60 A	A [mm]	B [mm]	C [mm]	D [mm]	Ø E [mm] Grip Area	F [mm]	Suggested payload max. [g]	Weight [g]
1-472-06-00	IGP 20-26-30	-	20	16	72	4	26-30	58,5	100	58
1-472-07-00	IGP 20-29-33	-	20	16	72	4	29-33	58,5	100	58
1-472-08-00	IGP 20-32-36	-	20	16	72	4	32-36	58,5	100	60
1-472-09-00	IGP 20-35-39	-	20	16	72	4	35-39	58,5	100	61
1-472-10-00	IGP 20-38-42	-	20	16	72	4	38-42	58,5	100	62
1-472-11-00	IGP 20-41-45	-	20	16	72	4	41-45	58,5	100	61
1-472-12-00	IGP 20-44-48	x	20	16	72	4	44-48	58,5	100	65
1-473-06-00	IGP 20-28-32 EP	x	20	16	72	4	28-32	58,5	100	59
1-473-07-00	IGP 20-31-35 EP	x	20	16	72	4	31-35	58,5	100	60
1-473-08-00	IGP 20-34-38 EP	x	20	16	72	4	34-38	58,5	100	61
1-473-09-00	IGP 20-37-41 EP	x	20	16	72	4	37-41	58,5	100	62
1-473-10-00	IGP 20-40-44 EP	x	20	16	72	4	40-44	58,5	100	63
1-473-11-00	IGP 20-43-47 EP	x	20	16	72	4	43-47	58,5	100	63
1-473-12-00	IGP 20-46-50 EP	x	20	16	72	4	46-50	58,5	100	65

The EP-coating is an elastomer, so all dimensions are nominal.

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**190**  
Profile  
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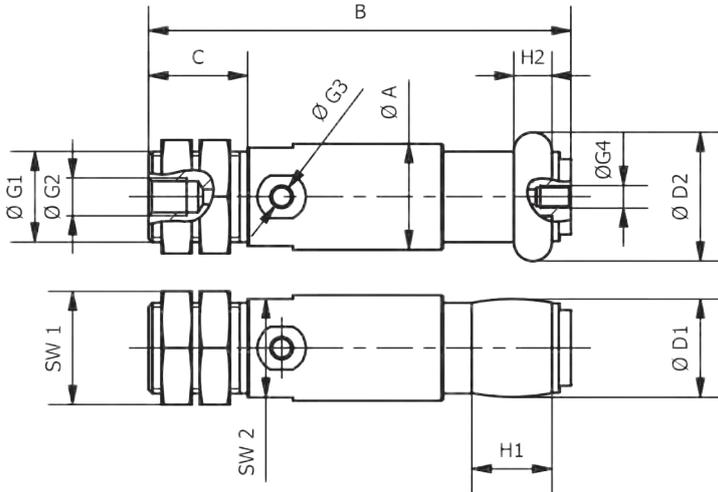
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## IGB / ID Gripper, Bellow



**Remarks:**

**Application: for gripping from the inside**

- adapted to the Robot-Hand-Kit by Adapter AD IGB
- compact size
- single-acting
- gripping diameters from 8 mm to 85 mm
- secure gripping
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

G2 part-present-control by vacuum possible  
G3 air connection

**Accessories:**

- Adapter AD IGB
- Exchange Bellows
- Sensor Bracket SH IGB
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- 3-pole sensor on demand

Part No.	Description	A [mm]	B [mm] +/-	C [mm]	D1 [mm] +/-	D2 [mm] +/-	G1 [mm]	G2 [mm] [°]	G3 [mm] [°]	G4 [mm] [°]
1-474-00-00	IGB 8 8-11	14	52.7	13	8	11	M10x1	M5	M3	M2
1-474-00-01	IGB 10 10,5-14	14	54.2	13	10.5	14	M10x1	M5	M3	M2
1-474-00-02	IGB 12 13-17	14	55.5	13	13	17	M12x1	M5	M3	M3
1-474-00-03	IGB 14 15-19,5	14	55.8	13	15	19.5	M12x1	M5	M3	M3
1-474-00-04	IGB 18 19,5-25	18	65	14	19.5	25	M12x1	M5	M5	M3
1-474-00-05	IGB 22 24-31,5	21.5	75.5	15	24	31.5	M14x1	M5	M5	M3
1-474-00-06	IGB 27 28-37	25	88	18	28	37	M16x1	M5	M5	M5
1-474-00-07	IGB 33 34-45	30	109	25	34	45	M22x1.5	G 1/8	M5	G 1/8
1-474-00-08	IGB 41 42-54	40	126.5	25	42	54	M22x1.5	G 1/8	M5	G 1/8
1-474-00-09	IGB 51 54-68	50	159	32	54	68	M26x1.5	G 1/8	G 1/8	G 1/8
1-474-00-10	IGB 63 66-85	60	189	32	66	85	M26x1.5	G 1/8	G 1/8	G 1/8

Part No.	Description	H1 [mm] +/-0.5	H2 [mm] +/-0.5	Handling Weight max. [g]	SW1 [mm]	SW2 [mm]	perm. Magnet	Material Bellow	Material Gripper	Weight [g]
1-474-00-00	IGB 8 8-11	7	3	80	13	13		EPDM	Aluminium	15
1-474-00-01	IGB 10 10,5-14	8.5	4	100	13	13		EPDM	Aluminium	16
1-474-00-02	IGB 12 13-17	10.5	5	120	15	13		EPDM	Aluminium	17
1-474-00-03	IGB 14 15-19,5	13	6	150	15	13		EPDM	Aluminium	17
1-474-00-04	IGB 18 19,5-25	16.5	9	210	15	16		EPDM	Aluminium	28
1-474-00-05	IGB 22 24-31,5	21	11	320	17	19		EPDM	Aluminium	43
1-474-00-06	IGB 27 28-37	26	14	450	19	22	x	EPDM	Aluminium	79
1-474-00-07	IGB 33 34-45	32.5	18	700	27	28	x	EPDM	Aluminium	118
1-474-00-08	IGB 41 42-54	39.5	24	1200	27	36	x	EPDM	Aluminium	280
1-474-00-09	IGB 51 54-68	48	30	2500	32	45	x	EPDM	Aluminium	490
1-474-00-10	IGB 63 66-85	61	36	5100	32	54	x	EPDM	Aluminium	800

## IGB H / ID Gripper, Bellow, Lifting

### Remarks:

**Application:** For gripping from the inside. When gripping, the component is lifted. Depending on the application, this can replace a Z-axis for pick and place.

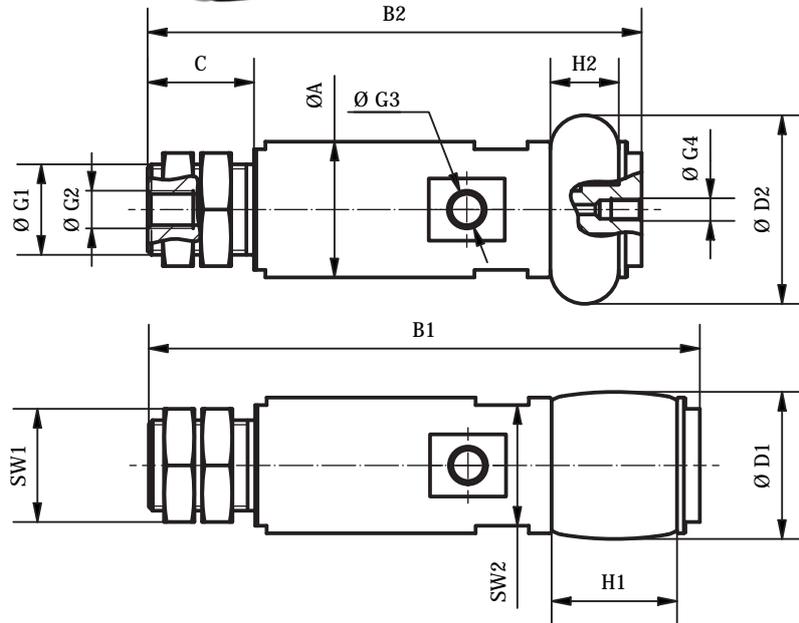
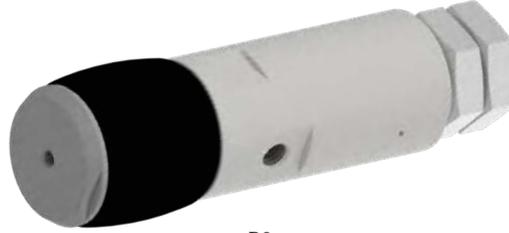
- adapted to the Robot-Hand-Kit by Adapter AD IGB
- compact size
- single-acting
- gripping diameters from 8 mm to 85 mm
- secure gripping
- » maximum air pressure is 6 bar, use dry and filtered air only

### Drawing:

G2 part-present-control by vacuum possible  
G3 air connection

### Accessories:

- Adapter AD IGB
- Exchange Bellows
- Sensor Bracket SH IGB
- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- 3-pole sensor on demand



Part No.	Description	A [mm]	B1 [mm] +/-	B2 [mm] +/-	C [mm]	D1 [mm] +/-	D2 [mm] +/-	G1 [mm]	G2 [mm] ["]	G3 [mm] ["]	G4 [mm] ["]
1-474-01-00	IGB H 8 8-11	14	57.5	54	13	8	11	M10x1	M5	M3	M2
1-474-01-01	IGB H 10 10,5-14	14	58.8	54.5	13	10.5	14	M10x1	M5	M3	M2
1-474-01-02	IGB H 12 13-17	14	60.5	55	13	13	17	M10x1	M5	M3	M3
1-474-01-03	IGB H 14 15-19,5	14	64	57	13	15	19.5	M10x1	M5	M3	M3
1-474-01-04	IGB H 18 19,5-25	18	72.5	65	14	19.5	25	M12x1	M5	M5	M3
1-474-01-05	IGB H 22 24-31,5	21.5	82	70	15	24	31.5	M14x1	M5	M5	M3
1-474-01-06	IGB H 27 28-37	25	98	86	18	28	37	M16x1	M5	M5	M5
1-474-01-07	IGB H 33 34-45	30	116	101.5	25	34	45	M22x1.5	G1/8	M5	G1/8
1-474-01-08	IGB H 41 42-54	40	131	115.5	25	42	54	M22x1.5	G1/8	M5	G1/8
1-474-01-09	IGB H 51 54-68	50	160	142	32	54	68	M26x1.5	G1/8	G1/8	G1/8
1-474-01-10	IGB H 63 66-85	60	185	160	32	66	85	M26x1.5	G1/8	G1/8	G1/8

Part No.	Description	H1 [mm] +/-0.5	H2 [mm] +/-0.5	SW1 [mm]	SW2 [mm]	perm. Magnet	Material Bellow	Material Gripper	Weight [g]
1-474-01-00	IGB H 8 8-11	7	3.5	13	13		EPDM	Aluminium	16
1-474-01-01	IGB H 10 10,5-14	8.5	4.5	13	13		EPDM	Aluminium	17
1-474-01-02	IGB H 12 13-17	10.5	5	13	13		EPDM	Aluminium	18
1-474-01-03	IGB H 14 15-19,5	13	6	13	13		EPDM	Aluminium	20
1-474-01-04	IGB H 18 19,5-25	16.5	9	15	16		EPDM	Aluminium	35
1-474-01-05	IGB H 22 24-31,5	21	9	17	20		EPDM	Aluminium	50
1-474-01-06	IGB H 27 28-37	26	14	19	22	x	EPDM	Aluminium	100
1-474-01-07	IGB H 33 34-45	32.5	18	27	27	x	EPDM	Aluminium	130
1-474-01-08	IGB H 41 42-54	39.5	24	27	36	x	EPDM	Aluminium	300
1-474-01-09	IGB H 51 54-68	48	30	32	45	x	EPDM	Aluminium	500
1-474-01-10	IGB H 63 66-85	61	36	32	54	x	EPDM	Aluminium	785

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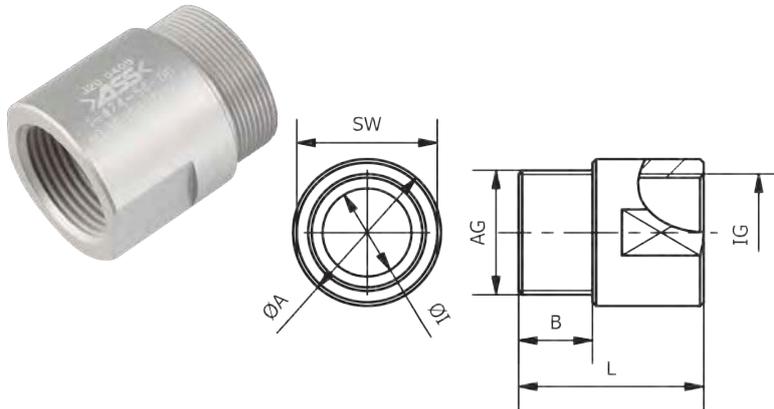
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 400 | Grippers

## AD IGB / Adapter for IGB

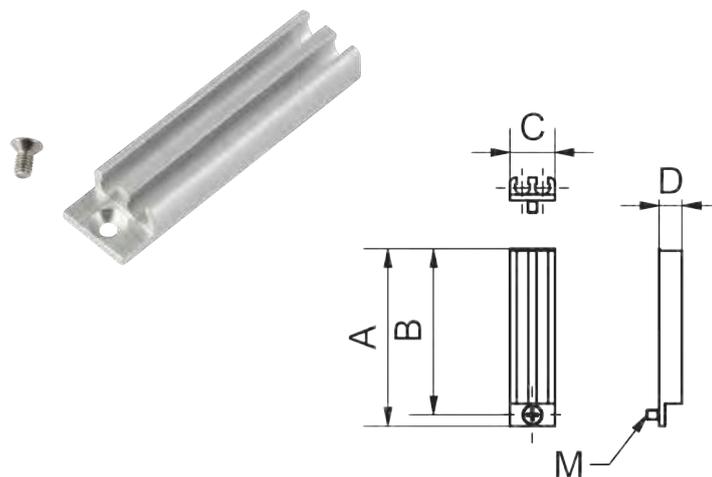


**Remarks:**

- adapts ID Gripper IGB to the robot-hand-kit
- clamping diameter suitable for Robot Hand Kit (EOAT)
- » see application examples

Part No.	Description	ØA [mm]	B [mm]	ØI [mm]	AG [mm]	IG [mm]	L [mm]	SW [mm]	suitable for	Material	Weight [g]
1-474-50-00	AD 14 IGB M10x1	14	10	8	M12x1	M10x1	35	13	IGB 8... IGB 10...	Al	7
1-474-51-00	AD 14 IGB M12x1	14	10	8	M12x1	M12x1	35	13	IGB 12... IGB 14... IGB 18...	Al	5
1-474-52-00	AD 20 IGB M14x1	20	10	13	M17x1	M14x1	25	17	IGB 22...	Al	9
1-474-53-00	AD 20 IGB M16x1	20	10	12	M17x1	M16x1	25	19	IGB 27...	Al	8
1-474-54-00	AD 30 IGB M22x1,5	30	10	20,5	M27x1	M22x1,5	35	27	IGB 33... IGB 41...	Al	29
1-474-55-00	AD 30 IGB M26x1,5	30	10	20	M27x1	M26x1,5	40	27	IGB 51... IGB 63...	Al	24

## SH IGB / Sensor Bracket for IGB



**Remarks:**

- this Sensor Bracket is for mounting sensor MFS T2 3,7 for monitoring 2 positions
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	M [mm]	Weight [g]
1-474-16-00	SH IGB 27 28-37	34.5	31.5	12	6	2.5	4
1-474-17-00	SH IGB 33 34-45	41	38	12	6	2.5	5
1-474-18-00	SH IGB 41 42-54	47	44	12	6	2.5	5
1-474-19-00	SH IGB 51 54-68	55.5	52.5	12	6	2.5	6
1-474-20-00	SH IGB 63 66-85	61	58	12	6	2.5	7

**Exchange Bellows for ID Gripper IGB**

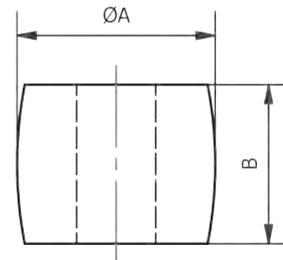
**Remarks:**

- Replacement bellows and material variants for ID Gripper IGB
- Temperature ranges:
  - EPDM -30 to +120 ° C
  - Silicone -40 to +150 ° C

EPDM



Silicone



Part No.	Description	ØA [mm]	B [mm]	suitable for	Material
1-474-70-00	Balg 8 EPDM	8	7	IGB 8 8-11	EPDM
1-474-70-01	Balg 10 EPDM	10.5	8.8	IGB 10 10,5-14	EPDM
1-474-70-02	Balg 12 EPDM	13	10.5	IGB 12 13-17	EPDM
1-474-70-03	Balg 14 EPDM	15	13	IGB 14 15-19,5	EPDM
1-474-70-04	Balg 18 EPDM	19.5	16.5	IGB 18 19,5-25	EPDM
1-474-70-05	Balg 22 EPDM	24	21	IGB 22 24-31,5	EPDM
1-474-70-06	Balg 27 EPDM	28	26	IGB 27 28-37	EPDM
1-474-70-07	Balg 33 EPDM	34	32.5	IGB 33 34-45	EPDM
1-474-70-08	Balg 41 EPDM	42	39.5	IGB 41 42-54	EPDM
1-474-70-09	Balg 51 EPDM	54	48	IGB 51 54-68	EPDM
1-474-70-10	Balg 63 EPDM	66	61	IGB 63 66-85	EPDM
1-474-71-00	Balg 8 Silikon	8	7	IGB 8 8-11	Silicone
1-474-71-01	Balg 10 Silikon	10.5	8.8	IGB 10 10,5-14	Silicone
1-474-71-02	Balg 12 Silikon	13	10.5	IGB 12 13-17	Silicone
1-474-71-03	Balg 14 Silikon	15	13	IGB 14 15-19,5	Silicone
1-474-71-04	Balg 18 Silikon	19.5	16.5	IGB 18 19,5-25	Silicone
1-474-71-05	Balg 22 Silikon	24	21	IGB 22 24-31,5	Silicone
1-474-71-06	Balg 27 Silikon	28	26	IGB 27 28-37	Silicone
1-474-71-07	Balg 33 Silikon	34	32.5	IGB 33 34-45	Silicone
1-474-71-08	Balg 41 Silikon	42	39.5	IGB 41 42-54	Silicone
1-474-71-09	Balg 51 Silikon	54	48	IGB 51 54-68	Silicone
1-474-71-10	Balg 63 Silikon	66	61	IGB 63 66-85	Silicone

**000**  
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Others

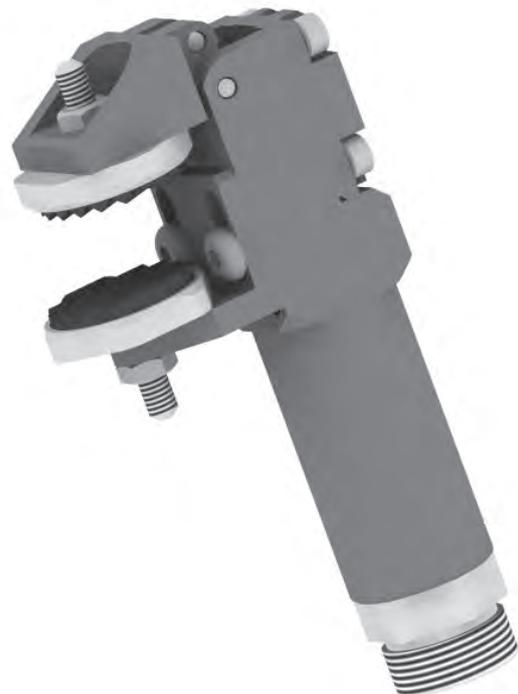
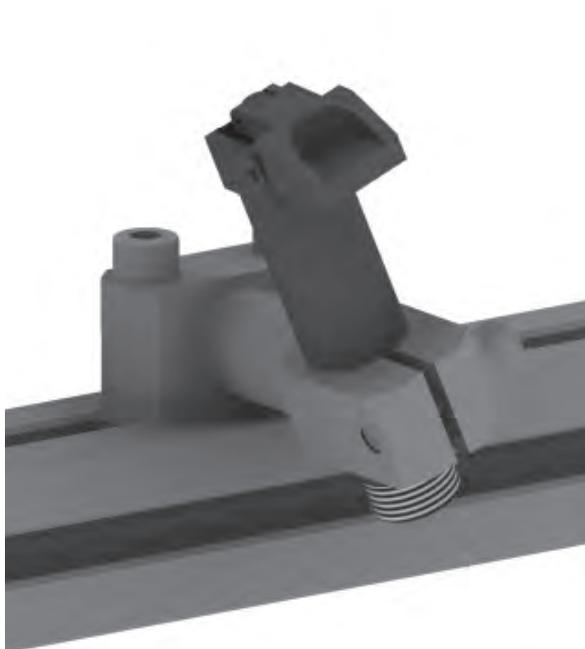
# 450 | Gripper Fingers

## Application Example of Sizes and Variants of Gripper Fingers

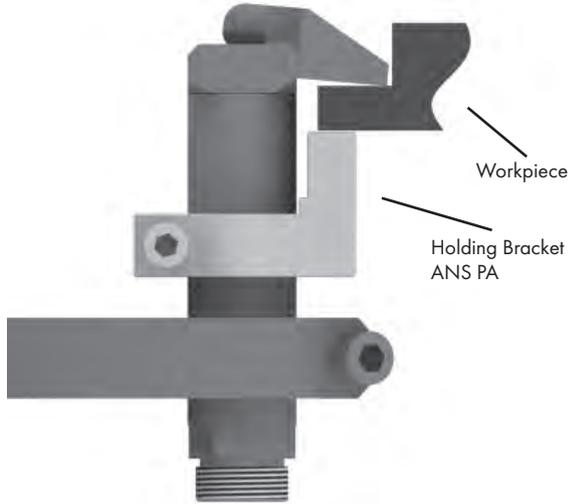


App. example GRF 14-95 VA

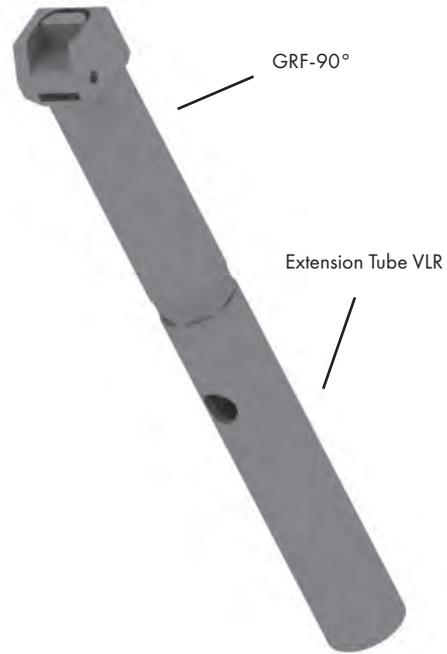
Application example GFD 90



**Application example GRF 95°**



**Application example GRF 90°**



**Application example ZTS**



**Application example ANS AL EP CS**



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
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Nipper Blades

**700**  
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**800**  
Electrics and  
Sensors

**850**  
Pneumatics

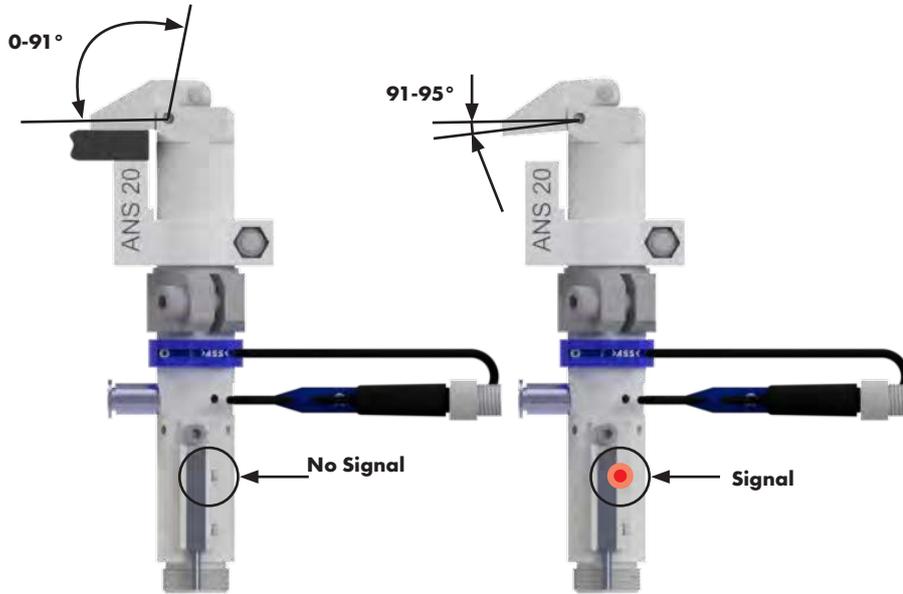
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

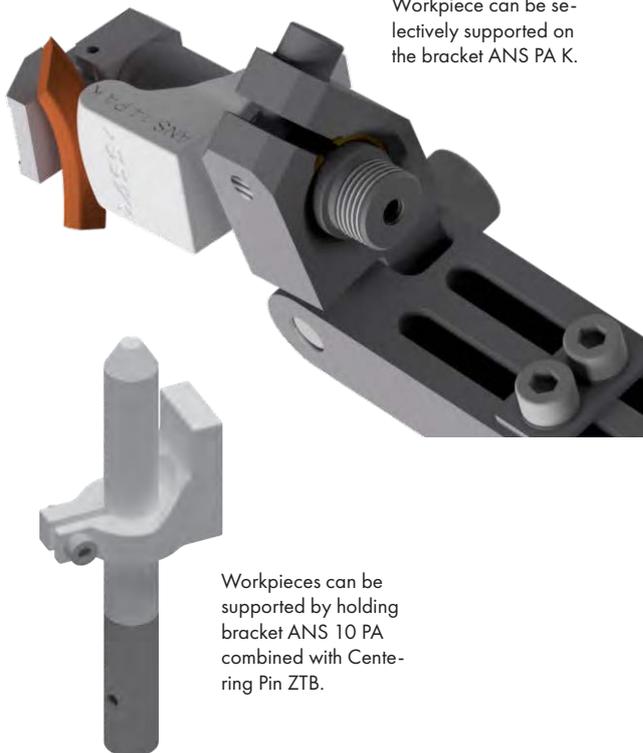
# 450 | Gripper Fingers

## Application example GRF P2 with Precision Monitoring

Example shows the application of the gripper fingers with precision monitoring GRF P (shown GRF 95° P).



## Application examples Holding Brackets ANS



## GRF 95° / Gripper Finger

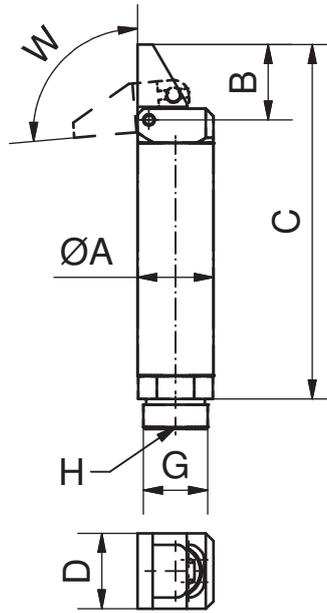
**Remarks:**

**Application: e.g. recommended if parts stick**

- 95° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H [°]	W [°]	Closing force max. [N]	Weight [g]
1-451-03-00	GRF 14-95 VA	14	15	64	14	M12x1	M5	95	12.5	23
1-450-06-00-1	GRF 20-95 VA	20	20	100	20	M17x1	G1/8	95	45	64
1-450-23-00-1	GRF 30-95 VA	30	29	137	30	M27x1	G1/8	95	140	204

## GRF 95° EP / Gripper Finger with EP covering

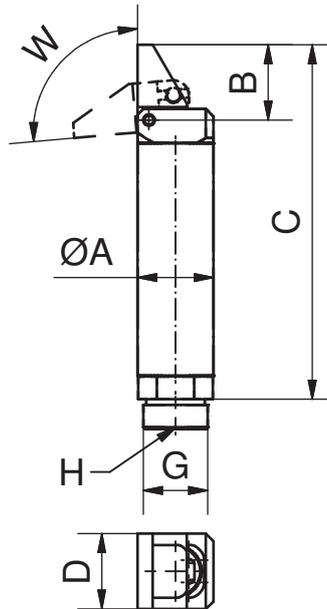
**Remarks:**

**Application: e.g. recommended if parts stick and a gentle grip is needed**

- 95° gripping angle
- for detailed information about the EP Coating please take a look at category 990
- more details see GRF 95° above
- table: H = air port
- end positions can be monitored optionally extendable with extension tube VLR
- single acting/spring return
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- see GRF 95° above



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H [°]	W [°]	Closing force max. [N]	Weight [g]
1-451-04-00	GRF 14-95 VA EP	14	15	64	14	M12x1	M5	95	12,5	23
1-450-07-00-1	GRF 20-95 VA EP	20	20	100	20	M17x1	G1/8	95	45	65
1-450-22-00-1	GRF 30-95 VA EP	30	29	137	30	M27x1	G1/8	95	140	206

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
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**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

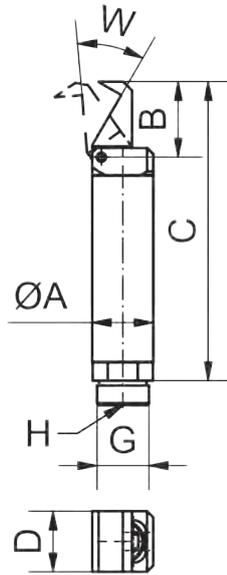
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 450 | Gripper Fingers

## GRF 35° / Gripper Finger



**Remarks:**

**Application: e.g. recommended if parts stick**

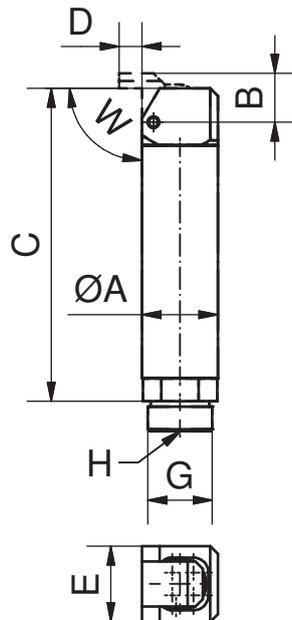
- 35° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H ["]	Closing force max. [N]	Weight [g]
1-451-06-00	GRF 14-35 VA	14	15	64	14	M 12x1	35	M5	45	23
1-450-03-00-1	GRF 20-35 VA	20	25	105	20	M17x1	35	G1/8	120	65
1-450-20-00-1	GRF 30-35 VA	30	35	143	30	M27x1	35	G1/8	240	201

## GRF 90° / Gripper Finger



**Remarks:**

**Application: e.g. recommended if parts stick**

- 90° gripping angle
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	W min. [°]	H ["]	Closing force max. [N]	Weight [g]
1-451-09-00	GRF 14-90 VA	14	9	58	6	14	M 12x1	90	M5	40	21
1-450-15-00-1	GRF 20-90 VA	20	13	89	6	20	M17x1	90	G1/8	100	62
1-450-29-00-1	GRF 30-90 VA	30	20	123.5	11	30	M27x1	90	G1/8	230	202

## GRF 95° / Gripper Finger with Precision Monitoring

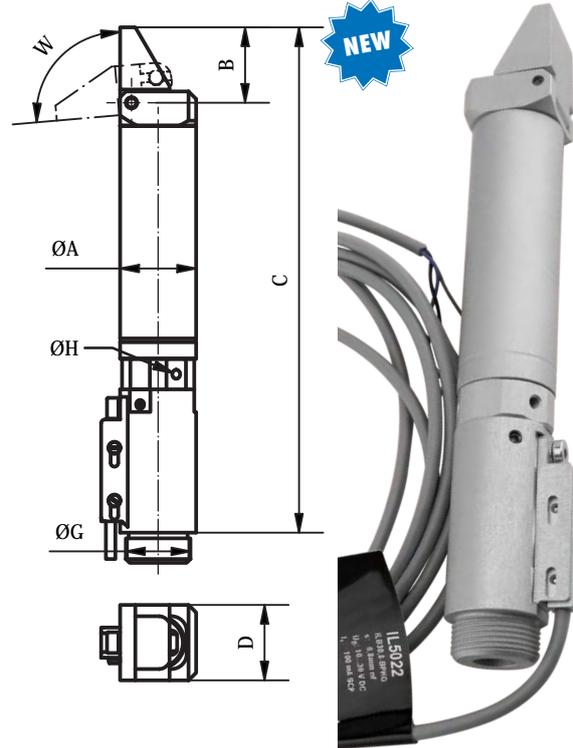
### Remarks:

**Application:** e.g. recommended if parts stick and part-present monitoring to be possible at once

- 95° gripping angle
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sideways can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

### Accessories e.g.:

- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H ["]	W [°]	Closing force max. [N]	Weight [g]
1-450-44-00	GRF 20-95 VA P2	20	20	134	20	M17x1	M3	95	45	102

## GRF 95° EP / Gripper Finger w. EP covering and Precision Monitoring

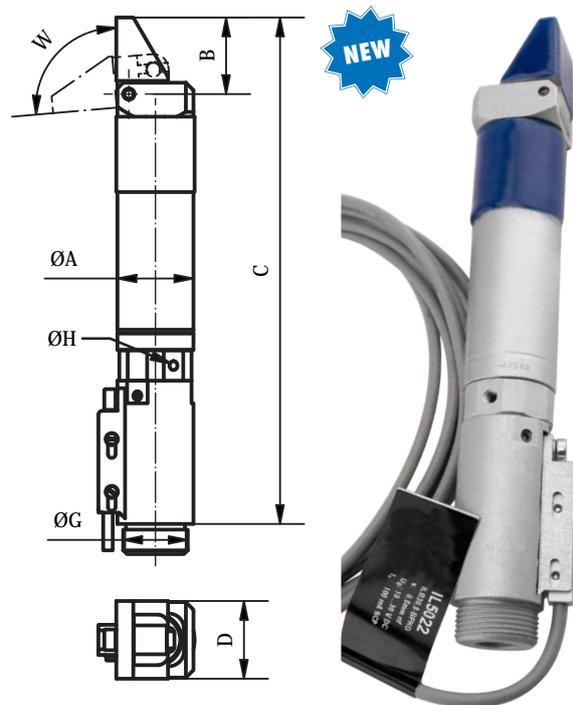
### Remarks:

**Application:** e.g. recommended if parts stick, part-present monitoring to be possible at once and a gentle grip is needed

- 95° gripping angle
- for detailed information about the EP Coating please take a look at category 990
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sideways can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

### Accessories e.g.:

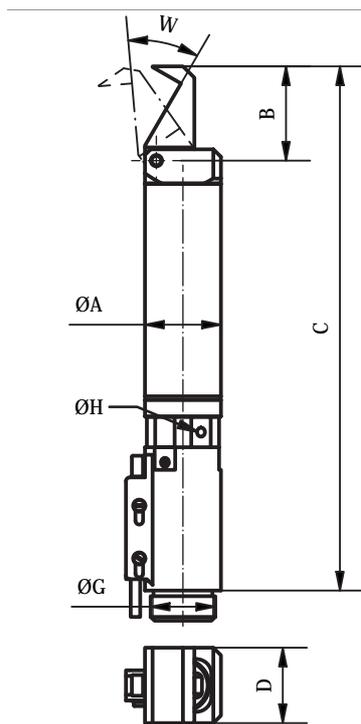
- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	H ["]	W [°]	Closing force max. [N]	Weight [g]
1-450-45-00	GRF 20-95 VA P2 EP	20	20	134	20	M17x1	M3	95	45	103

# 450 | Gripper Fingers

## GRF 35° P / Gripper Finger with Precision Monitoring



**Remarks:**

**Application: e.g. recommended if parts stick and part-present monitoring to be possible at once**

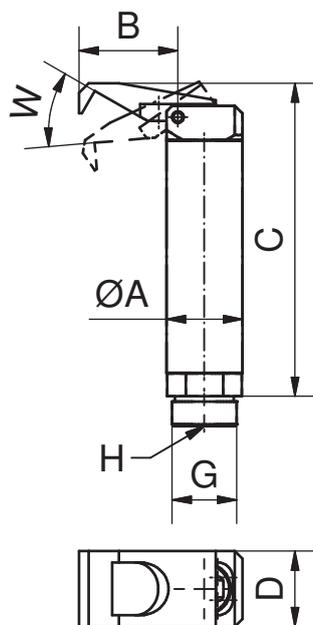
- 35° gripping angle
- inductive query allows part-present control
- sensor (3-pin, with 2m cable, PNP closing contact) included
- air connection sidewise can be positioned in 3x120° steps
- switching point set at 91°, can be adjusted if necessary
- additional monitoring of end positions optionally
- single acting/spring return
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

**Accessories e.g.:**

- Holding Bracket ANS
- Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Part No. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H [°]	Closing force max. [N]	Weight [g]
1-450-43-00	GRF 20-35 VA P2	20	25	139	20	M17x1	35	M3	120	103

## GRW 35° / Gripper Finger



**Remarks:**

**Application: e.g. recommended if parts stick**

- horizontal finger-design
- end positions can be monitored optionally
- extendable with extension tube VLR
- single acting
- table: H = air port
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Holding Bracket ANS
- Sensor Mounting Bracket GRF SH AL
- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Sensor Mounting Bracket GRF SH MFS
- Sensor ICS 8 (Art.-Nr. 1-808-36-00)
- Extension Tube VLR

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	G [mm]	W [°]	H [°]	Closing force max. [N]	Weight [g]
1-450-12-00-1	GRW 20-35 VA	20	26	89	20	M17x1	35	G1/8	50	64
1-450-26-00-1	GRW 30-35 VA	30	34	123	30	M27x1	35	G1/8	160	199

## GFD 90 / Double Action, Cam Locking Gripper Finger

**Remarks:**

**Version GFD:**

**Integrated self-locking: gripper finger snaps into the closed position (90 °)**

- double-acting gripper finger
- gripper finger opens when unlocking is subjected to air pressure
- end positions can be monitored
- adjustable holding bracket included
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Version GFD FS:**

**In case of complete pressure loss, a minimum closing force is mechanically ensured. The GFD FS automatically closes into self-propelled position by spring.**

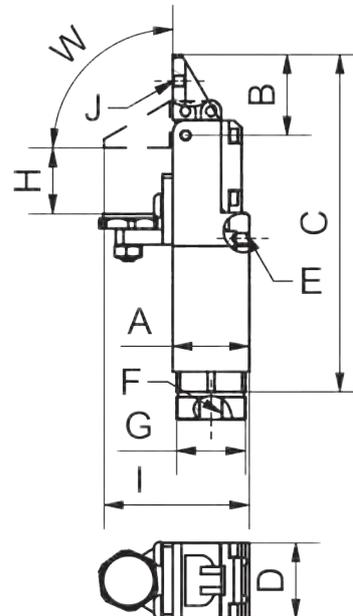
- FS = closing by spring
- gripper finger opens when unlocking is subjected to air pressure
- end positions can be monitored
- adjustable holding bracket included
- » closing force measured at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

- E Gripper finger opening
- F Gripper finger closing

**Accessories e.g.:**

- Sensor MFS T2 3,7 (Part No. 1808-30-00)
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [°]	G [mm]	H [mm]	I [mm]	J [mm]	W [°]	Closing force max. [N]	Weight [g]
1-450-10-00	GFD 20-90	20	23	105	20	M5	G1/8	M17x1	0-34	40	M4	90	110	112
1-450-24-00	GFD 30-90	30	32	134	30	M5	G1/8	M27x1	0-46	57	M5	90	160	286
1-450-31-00	GFD 20-90 FS	20	23	105	20	M5	G1/8	M17x1	0-34	40	M4	90	130	122
1-450-32-00	GFD 30-90 FS	30	32	134	30	M5	G1/8	M27x1	0-46	57	M5	90	185	299

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
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Connectors

**190**  
Profile  
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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

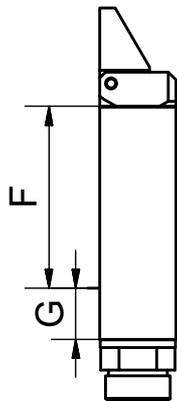
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

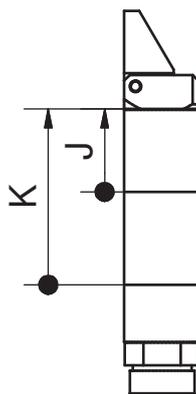
# 450 | Gripper Fingers

## GRF SH AL and GRF SH ICS / Positioning of Sensor Clamp

GRF SH AL



GRF SH ICS



**Remarks:**

- for positioning of the sensor mounting brackets see table

**GRF SH AL (Sensor MFS T2)**

- F no mounting position
- G mounting position

» Basically, it is important to position the sensor holder as far as possible at the lower end of the range G.

**GRF SH ICS (Sensor ICS)**

- K basic position
- J operating position

Part No. (GRF)	Description	F [mm]	G [mm]	J [mm]	K [mm]
1-451-03-00	GRF 14-95 VA	37	7	28	38
1-451-06-00	GRF 14-35 VA	37	7	33	38
1-451-09-00	GRF 14-90 VA	37	7	28	38
1-450-03-00-1	GRF 20-35 VA	39	23	33	38
1-450-06-00-1	GRF 20-95 VA	39	23	34	47
1-450-12-00-1	GRW 20-35 VA	39	23	33	38
1-450-15-00-1	GRF 20-90 VA	48	14	34	47
1-450-20-00-1	GRF 30-35 VA	60	32	51	59
1-450-23-00-1	GRF 30-95 VA	75	17	52	74
1-450-26-00-1	GRW 30-35 VA	60	32	51	79
1-450-29-00-1	GRF 30-90 VA	75	17	52	74

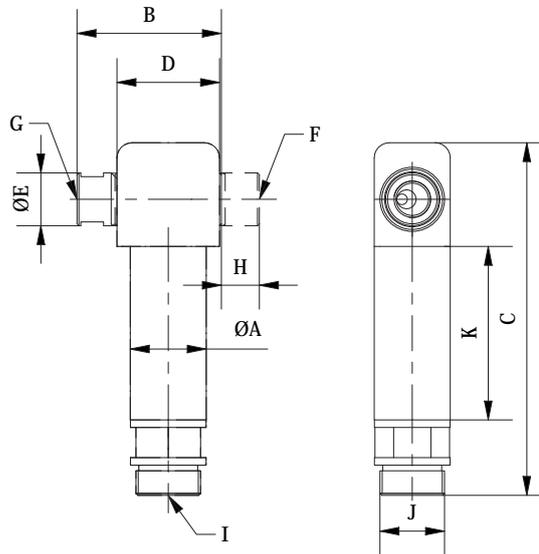
**Remarks:**

**Application: e.g. for gripping or fixing sidewise**

- Pressure Force: 80 N
- single acting
- in combination with pressure plates DPL for frictional gripping
- space-saving stroke for vacuum cups (see application example)
- threads can be reduced by reducing nipple RNK
- space-saving, compact design
- flexible usage
- small, compact design
- for various applications
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

**Accessories e.g.:**

- Pressure Plates DST
- Vacuum Cups VS
- Reducing Nipple RNK



Application examples with vacuum cup VS2 (left side) and pressure plate DST (right side).



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G ["]	Stroke H [mm]	I [mm]	J [mm]	K [mm]	Weight [g]
1-455-20-00	QGR 20	20	38	93,5	27	14	G1/8	G1/8	10	G1/8	M17x1	46	102

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

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Special  
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Manifold

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**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 450 | Gripper Fingers

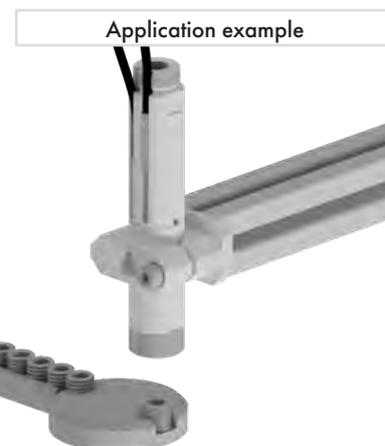
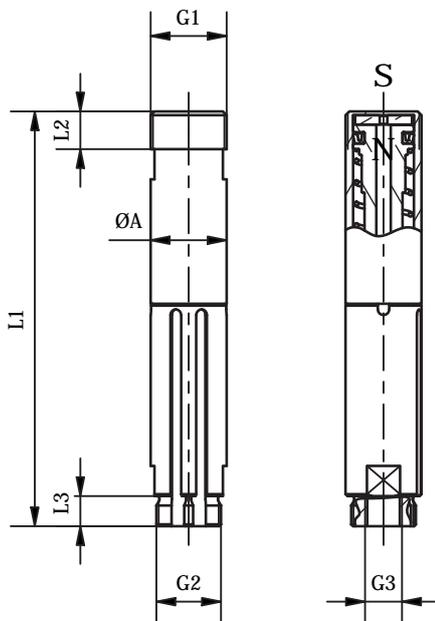
## PMG / Pneumatic Magnetic Gripper



**Remarks:**

**Application: e.g. for handling small ferromagnetic workpieces**

- single-acting magnetic gripper
- end position can be monitored
- contour pieces for centering can simply be screwed on
- magnetic gripper is depressurized in the holding position
- if compressed air is applied, the held workpiece is braced
  - » maximum air pressure is 6 bar, use dry and filtered air only
  - » The information given on the adhesive force was determined by pulling the magnet vertically off a 20 mm thick, flat ground steel plate St37 at room temperature. A deviation of up to -10% compared to the specified value is possible in exceptional cases. In general, however, this value is exceeded.



Part No.	Description	A [mm]	L1 [mm]	L2 [mm]	L3 [mm]	G1 [mm]	G2 [mm]	G3 [mm]	Holding Force [N]	Weight [g]
1-480-20-00	PMG 20	20	110	10	8	M20x1,5	M17x1	G 1/8	10	70

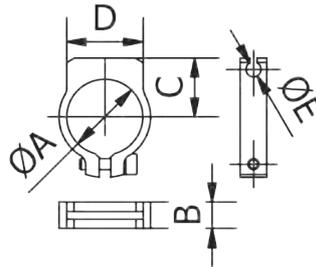
## GRF SH AL / Sensor Mounting Bracket

### Remarks:

- for mounting a magnetic field sensor MFS T2 on the gripper finger (2 switching points teachable)
- simple, robust clamping on the GRF
- compact design
- positioning in dimension G, see previous page

### Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1808-30-00)



Part No.	Description	fits for sensor	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-451-56-00	GRF SH 14 AL	MFS T2 3,7	14	7	12	18	4	Aluminium	4
1-450-57-00	GRF SH 20 AL	MFS T2 3,7	20	7	15,5	20	4	Aluminium	5
1-450-58-00	GRF SH 30 AL	MFS T2 3,7	30	7	20	20	4	Aluminium	7

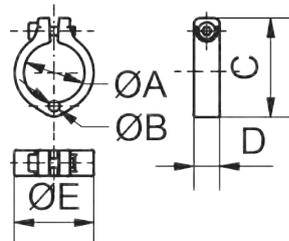
## GRF SH MFS + ICS / Sensor Mounting Bracket

### Remarks:

- for mounting a magnetic field sensor ICS on the gripper finger
- for querying one end position of the gripper finger
- by tightening the screw sensor mounting bracket and sensor itself are clamped on the finger
- positioning freely adjustable

### Accessories e.g.:

- Sensor ICS 8 (Part No. 1-808-36-00)



Part No.	Description	for sensor	for gripper fingers	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-451-54-00	GRF-SH14-ICS	ICS 8	GRF...14	14	4,1	29	8,5	20	Polyamide	3
1-450-59-00	GRF-SH20-ICS	ICS 8	GRF20/GRW20	20	4,1	35	8,5	26	Polyamide	3
1-450-60-00	GRF-SH30-ICS	ICS 8	GRF30/GRW30	30	4,1	45	8,5	36	Polyamide	4

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

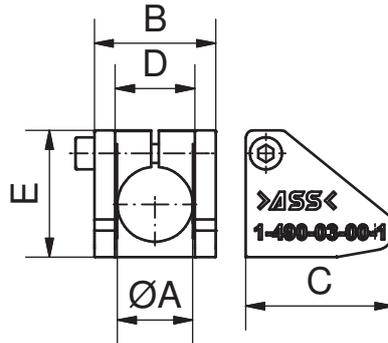
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 450 | Gripper Fingers

## ZTS PA / Gripper Finger Guide (for GRF ...)



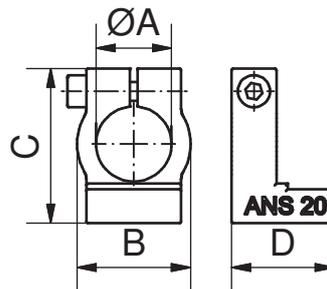
**Remarks:**

**Application:** the guide is placed over the gripper finger for protecting the part during retrieval

- suitable in combination with Gripper Finger GRF 95°
- not suitable for GRF...EP

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-03-00-1	ZTS 20 PA	20	32	39	21	34	Polyamide	20
1-490-06-00-1	ZTS 30 PA	30	45	65	32	45	Polyamide	60

## ANS PA / Gripper Holding Bracket



**Remarks:**

**Application:** workpieces can be supported by holding bracket

**ANS 10 PA**

- for usage with Centering Pin ZTB
- centered article can be placed on the bracket

**ANS 14/20/30 PA**

- for usage with Gripper Fingers GRF
- GRF in working position pushes workpiece against the bracket and fixes it

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-490-02-00	ANS 10 PA	10	20	31	25.5	Polyamid	5
1-490-20-00-1	ANS 14 PA	14	20	33	18	Polyamide	5
1-490-09-00-1	ANS 20 PA	20	30	41	27	Polyamide	17
1-490-12-00-1	ANS 30 PA	30	40	45	27	Polyamide	20

## ANS AL EP CS / Holding Bracket with EP coating and monitoring

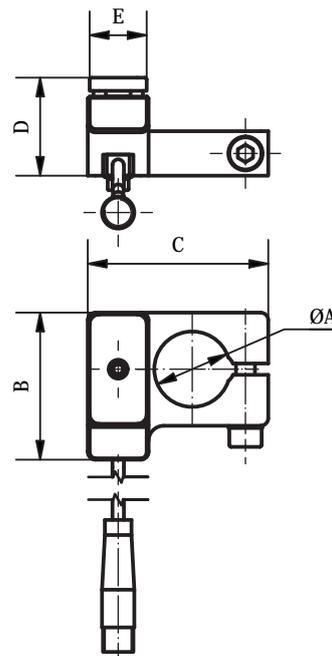
**Remarks:**

**Application: Holding Bracket piece with integrated query for checking the presence of parts**

- made of anodized aluminum
- the part that comes into contact with the article is EP-coated
- precision query using inductive initiator, with 3-pin plug.



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-80-00	ANS 20 AL EP CS	20	39	47,5	26	15	Aluminium	65

The EP-coating is an elastomer, so all dimensions are nominal.

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

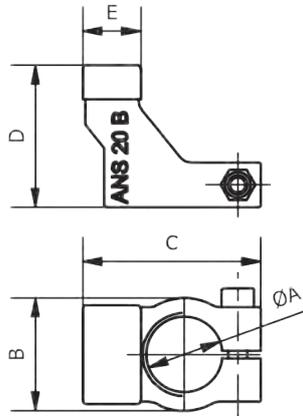
# 450 | Gripper Fingers

## ANS 20 PA EP / Gripper Holding Bracket, with EP coating

ANS ... PA EP S



ANS ... PA EP B



**Application: workpieces can be gently supported on the holding bracket**

- maximizes the coated contact surfaces in combination with GRF 95 ° EP and GRF 95 ° EP P
- closed finger presses the article against the holding bracket
- allows gentle gripping of the workpiece
- with EP coating shore hardness 90, blue
- » for detailed information about the EP Coating please take a look at category 990
- » see application example

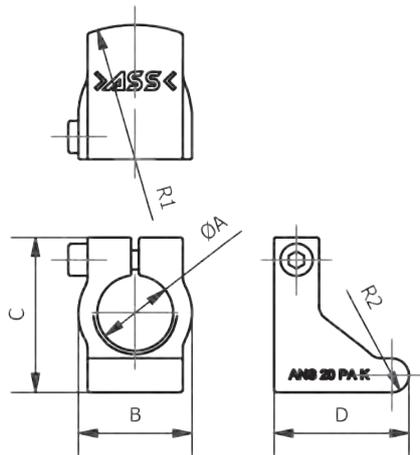
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-490-50-00	ANS 14 PA EP S	14	20	34	26	9	Polyamid/ EP	7
1-490-51-00	ANS 20 PA EP S	20	30	42	38	10	Polyamid/ EP	21
1-490-52-00	ANS 20 PA EP B	20	30	47	38	15	Polyamid/ EP	23
1-490-53-00	ANS 30 PA EP B	30	44	65	38	23	Polyamid/ EP	39

## ANS PA K / Gripper Holding Bracket, convex

ANS ... PA K



ANS ... PA K EP



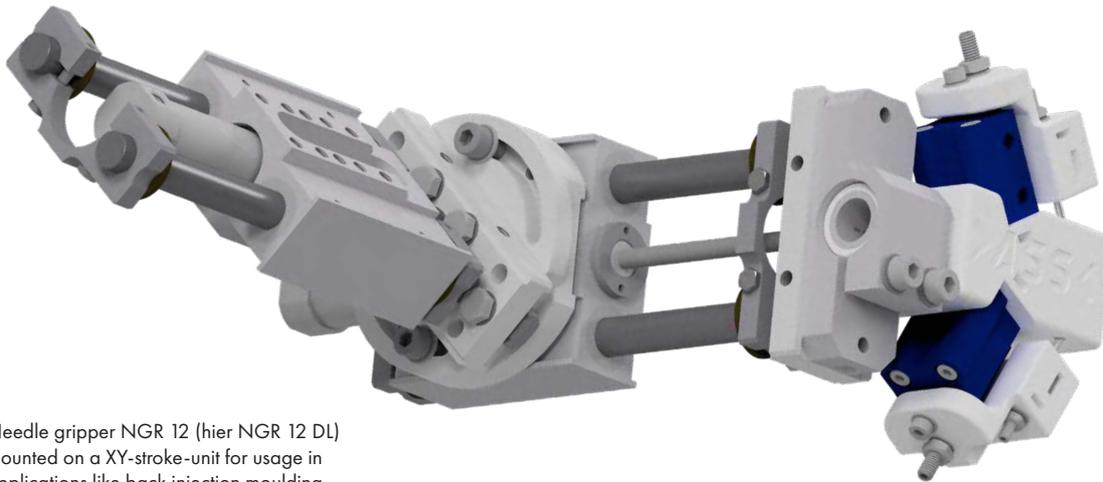
**Remarks:**

**Anwendung: curved workpieces can be selectively supported on the holding bracket**

- allows gentle gripping of the workpiece
- closed finger presses the article against the holding bracket
- » for detailed information about the EP Coating please take a look at category 990
- » see application example

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	R1 [mm]	R2 [mm]	Material	Weight [g]
1-490-70-00	ANS 14 PA K	14	20	33	24,5	20	4	Polyamide	7
1-490-71-00	ANS 20 PA K	20	30	41	35,5	35,5	4,5	Polyamide	17
1-490-75-00	ANS 14 PA K EP	14	20	33	24,5	20	4	Polyamide / EP	7
1-490-76-00	ANS 20 PA K EP	20	30	41	35,5	35,5	4,5	Polyamide / EP	17

**Anwendungsbeispiel NGR 12 D / NGR 12 DL**



Needle gripper NGR 12 (hier NGR 12 DL) mounted on a XY-stroke-unit for usage in applications like back injection moulding.

**Anwendungsbeispiel NGR 12-8 D**



The image on the left shows a magazine rod / centering pin, as it dives through the NGR 12-8 D for gripping positional accuracy.

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
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Vacuum Cups

**300**  
Gripper Arms

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

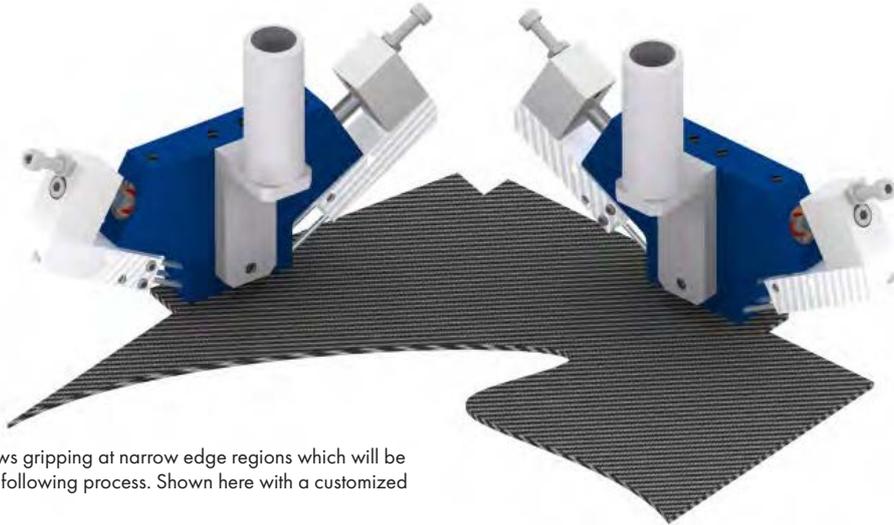
# 460 | Needle Grippers

## Anwendungsbeispiel NGR 12-10 D



Example of a NGR 12-10 D mounted with two clamps for a strong hold.

## Anwendungsbeispiel NGR 12-6 DS A



Slim design allows gripping at narrow edge regions which will be laminated in the following process. Shown here with a customized connection.

1



2

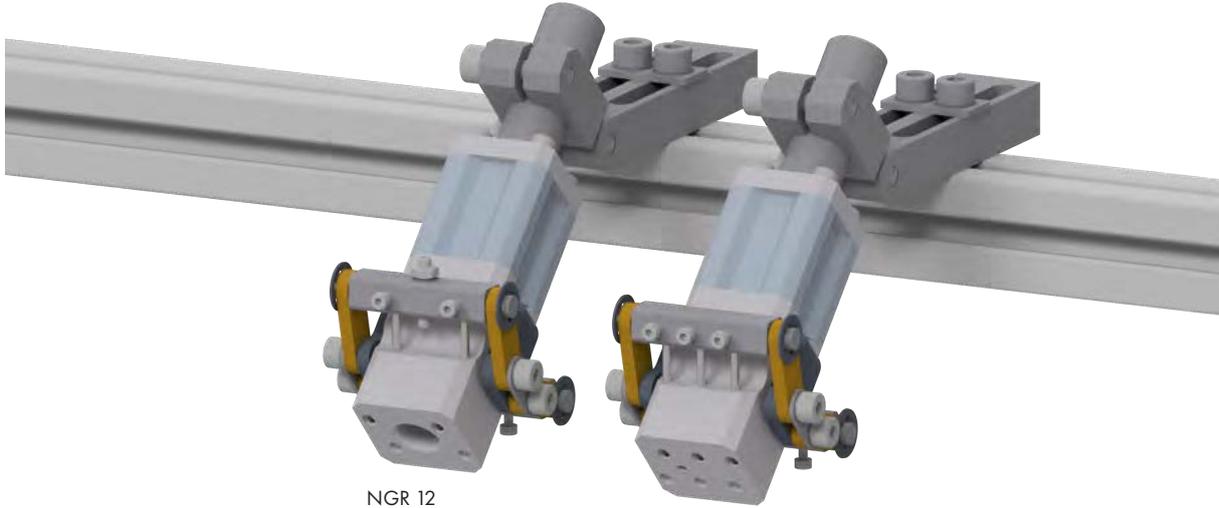


3



- 1: needle gripper package
- 2: needle gripper package with mounted connections for the Robot-Hand-Kit
- 3: combination of needle grippers with spring compensated grippers

**Application examples NGR 12 and NGR 12-6**



NGR 12

NGR 12-6



For centring tasks centring pin can dive in NGR 12.



adjusting screw

Penetration depth of needles can be continuously adjusted by adjusting screw.

**Application examples NGR 16-18 EZ**



Needle depth can be adjusted in steps of 0,025 mm easily.

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

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Vacuum Cups

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

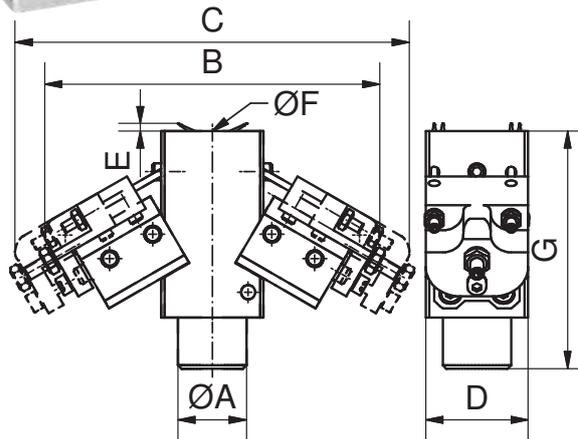
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 460 | Needle Grippers

## NGR 12 D / Needle Gripper with Through Hole



**Remarks:**

**Application:** Standard Needle Gripper with 4 needles at which the magazine bar or centring pin can completely submerge

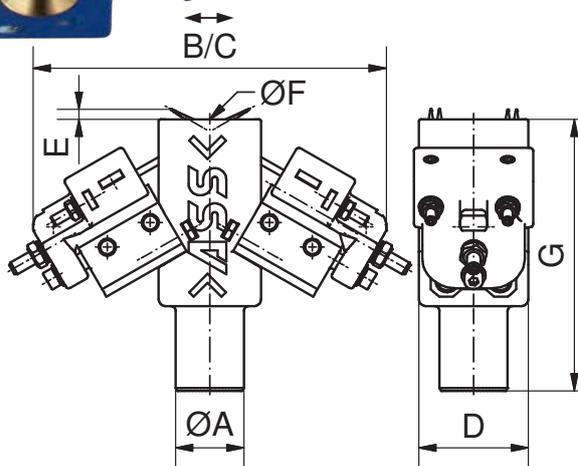
- **New: weight-optimized**
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

E penetration depth, the diameter of the needles is 2 mm  
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	Air connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-09-00	NGR 12 D	M5	20	98	116	30	0-2.5	11.5	70	202

## NGR 12 DL / Needle Gripper with Through Hole, Light Weight Version



**Remarks:**

**Application:** Light Weight Needle Gripper with 4 needles at which the magazine bar or centring pin can completely submerge

- identical function as NGR 12 D
- 37% weight reduction compared to NGR 12 D
- partitions made of Polyamide
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

E penetration depth, the diameter of the needles is 2 mm  
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	Air connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-12-00	NGR 12 DL	M5	20	121	103	32	2.5	11.5	80	169

## NGR 12-8 DK / Needle Gripper, 8 Needles, with Through Hole, compact design

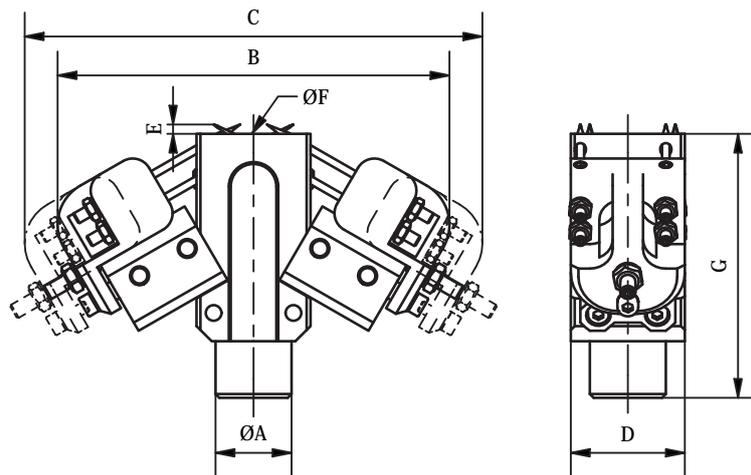
**Remarks:**

**Application:** Needle Gripper with 8 needles for more contact area at which the magazine bar or centering pin can completely submerge

- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

- E penetration depth, the diameter of the needles is 2 mm  
 B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Air connection	Weight [g]
1-460-13-00	NGR 12-8 DK	20	103	120	30	0-2,5	11,5	70	M5	225

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

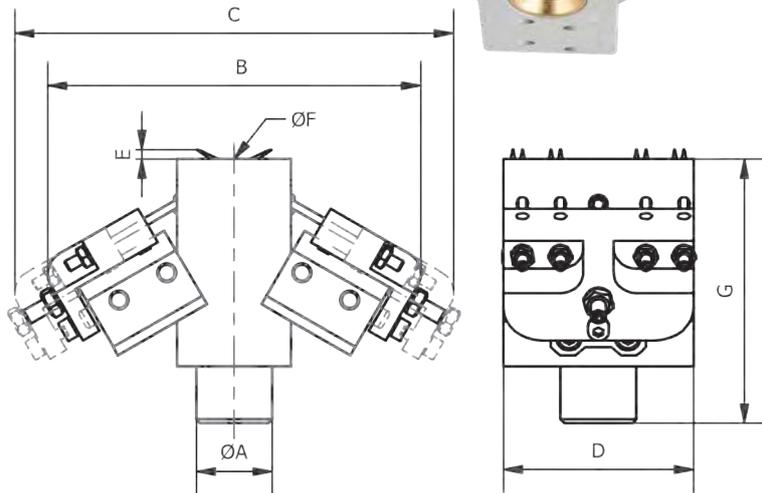
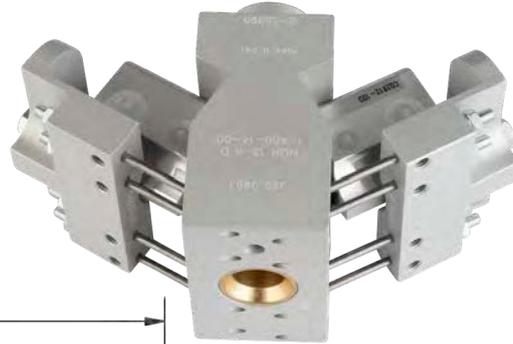
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 460 | Needle Grippers

## NGR 12-8 D / Needle Gripper, 8 Needles, with Through Hole



**Remarks:**

**Application: Needle Gripper with 8 needles for more contact area at which the magazine bar or centring pin can completely submerge**

- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- two double-acting cylinders
- piston diameter 12 mm
- body made of Aluminium
- » maximum air pressure is 6 bar, use dry and filtered air only

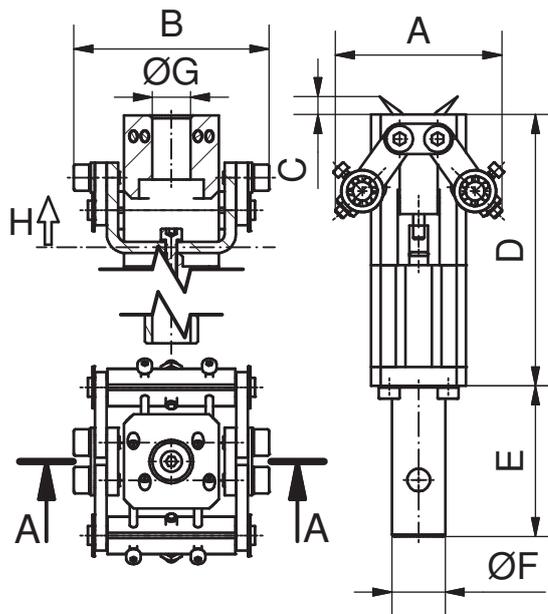
**Drawing:**

E penetration depth, the diameter of the needles is 2 mm

B and C minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Air connection	Weight [g]
1-460-14-00	NGR 12-8 D	20	98	116	50	0-2.5	11.5	70	M5	349

## NGR 12 / Needle Gripper



**Remarks:**

**Application: Needle Gripper with 4 needles at which the magazine bar or centring pin can immerse**

- maximum immersion depth 20 mm
- suitable for handling textiles, fabrics or other limp materials that can be penetrated
- double-acting cylinder
- piston diameter 12 mm
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

A extracted / retracted needles

C penetration depth, the diameter of the needles is 2 mm

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Stroke H [mm]	Air connection	Weight [g]
1-460-06-00	NGR 12	48/58	52	0-4	72	40	14	10	10	M5	186

**NGR 12-6 / Needle Gripper with 6 Needles, adjustable**

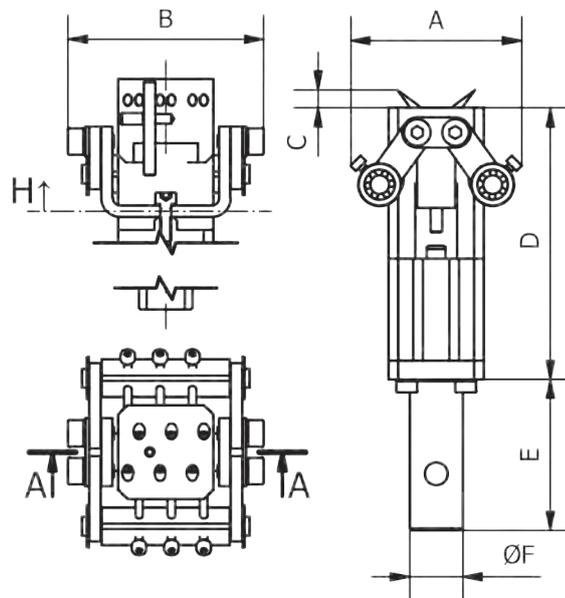
**Remarks:**

**Application: infinitely adjustable Needle Gripper with 6 needles**

- penetration depth infinitely adjustable via adjusting screw
- easy to use
- 6 needles for a secure hold
- double-acting cylinder
- » maximum air pressure is 6 bar, use dry and filtered air only



working position



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Stroke H [mm]	Air connection	Weight [g]
1-460-08-00	NGR 12-6	48/58	52	0-4	72	40	14	10	10	M5	190

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 460 | Needle Grippers

## NGR 16-18 EZ / Needle Gripper, compact, adjustable



**Remarks:**

**Application:** suitable for separating thin and limp materials without forcing through or the needles to grip several layers

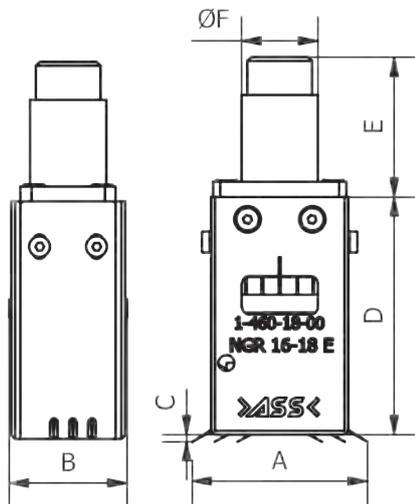
- 18 extra-thin needles with a diameter of 0.7 mm for a secure hold
- needle depth is adjustable from 0-1.8 mm (1.75 mm when using additional cover) in 0.025mm steps by thumb wheel
- successfully completed endurance test with more than 2 million cycles
- fitted for a blow-off tube to release cloth
- easy to change needle package
- single-acting
- » sensor option for needle position
- » maximum air pressure is 6 bar, use dry and filtered air only

**Scope of Delivery:**

- additional cover for thin and limp materials

**Accessories.g.:**

- Sensor MFS T2 3,7 (Art.-Nr. 1-808-30-00)



Part No.	Description	Needles	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Air connection	Weight [g]
1-460-19-00	NGR 16-18 EZ	18	36/46	31	0-2	63	37	20	M5	256

**NGR 12-10 D / Needle Gripper with covered Contact Area**

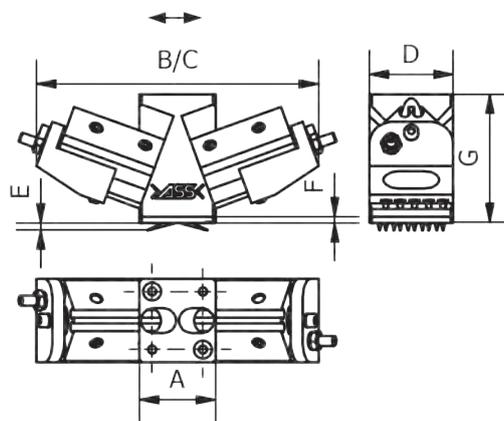
**Remarks:**

**Application: special Needle Gripper with 10 needles designed for handling fibre-reinforced composites (Organo-Sheets) and similar adhesive materials**

- specially designed contact surface for stripping off bonds
- contact surface made of PTFE
- easy exchangeable contact surface
- different connections possible
- double-acting
- stroke positions can be monitored
- stepless adjustment of the penetration depth
- 2x5 needles with 2mm diameter each
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Draw Tube 20x100 NGR 12-10 D
- Sensor ICS 8



Part No.	Description	Connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]
1-460-10-00	NGR 12-10 D	M5	30	130	112	33	2.8	2.5	51	252

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 460 | Needle Grippers

## Draw Tube 20x100 NGR 12-10 D

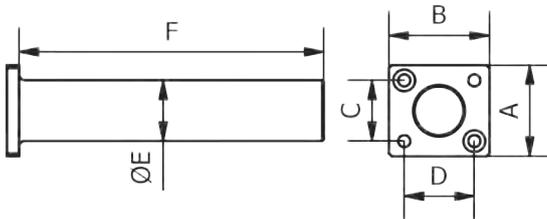


**Remarks:**

- special draw tube for NGR 12-10 D
- integrates NGR 12-10 D to the Robot Hand Kit (EOAT)

**Scope of Delivery:**

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-460-10-10	Draw Tube 20x100 NGR 12-10 D	30	33	20	23	20	100	38

## GG-20-NGR / Spring compensated Gripper Arm for NGR 12-10 D

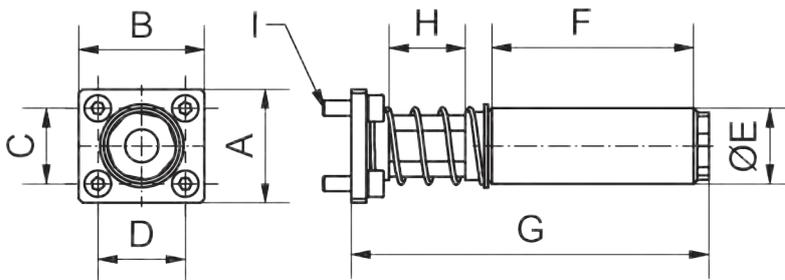


**Remarks:**

- spring compensated gripper arm for NGR 12-10 D
- integrates NGR 12-10 D to the Robot Hand Kit (EOAT)

**Scope of Delivery:**

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Weight [g]
1-460-10-11	GG-20-NGR 12-10 D	30	33	20	23	20	53	94	20	M4	118
1-460-10-12	GG-50-NGR 12-10 D	30	33	20	23	20	53	124	50	M4	125

## NGR 12-6 DS A / Needle Gripper, slim, adjustable, PTFE coated needles

### Remarks:

**Application: special Needle Gripper for border areas or when needle packages are required**

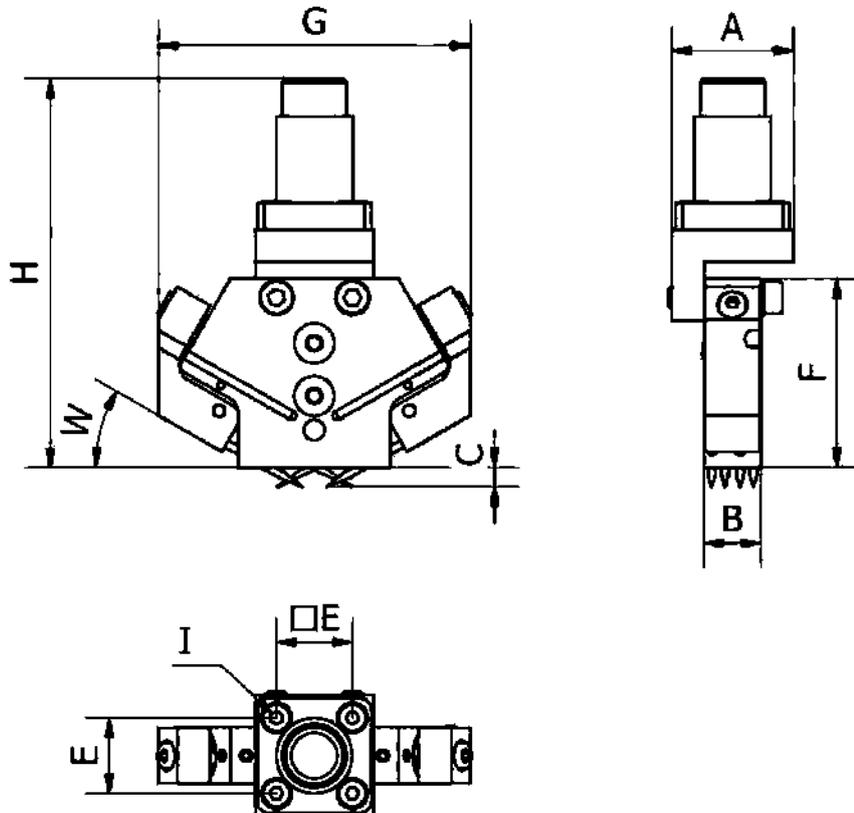
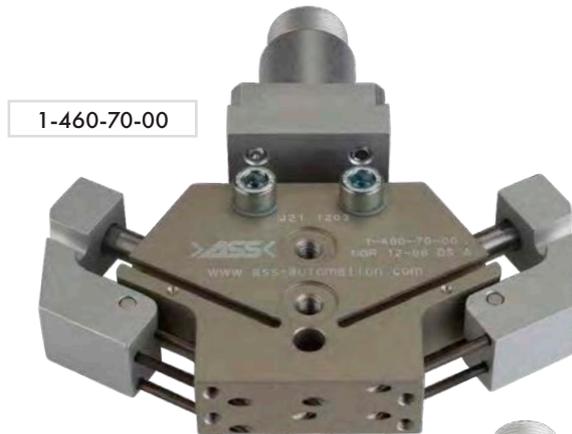
- slim design with only 15 mm
- Version DSA TP with changeable PTFE contact plate
- 2x 3 PTFE coated needles
- cohesive needle fixation
- seamless screwing to needle gripper packages with 6, 12, 18, 24 and more needles possible
- air connections can be summarized with needle gripper packages
- needle packages can be completely exchanged
- penetration depth infinitely adjustable
- fabrics are only penetrated in areas which are subsequently laminated
- basic and working position of the needle packages can be monitored
- double-acting
- air connection 2xM5
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application examples

### Scope of Delivery:

- thread connection
- adapter for linking to the Robot-Hand-Kit

### Accessories e.g.:

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)



Part No.	Description	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	K [mm]	W [°]	Weight [g]
1-460-70-00	NGR 12-6 DS A	31	15	0-5	20	50	82/100	103	M4	40	30	224
9-07-460-157-0	NGR 12-06 DS A TP	31	15	0-5	20	50	82/100	103	M4	40	30	222

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 460 | Needle Grippers

## NGR 20-6-25 D / NGR for SMC (Sheet Molding Compound) Parts



**Remarks:**

**Application: e.g. for gripping fleeces, several limp layers, voluminous or sticky materials**

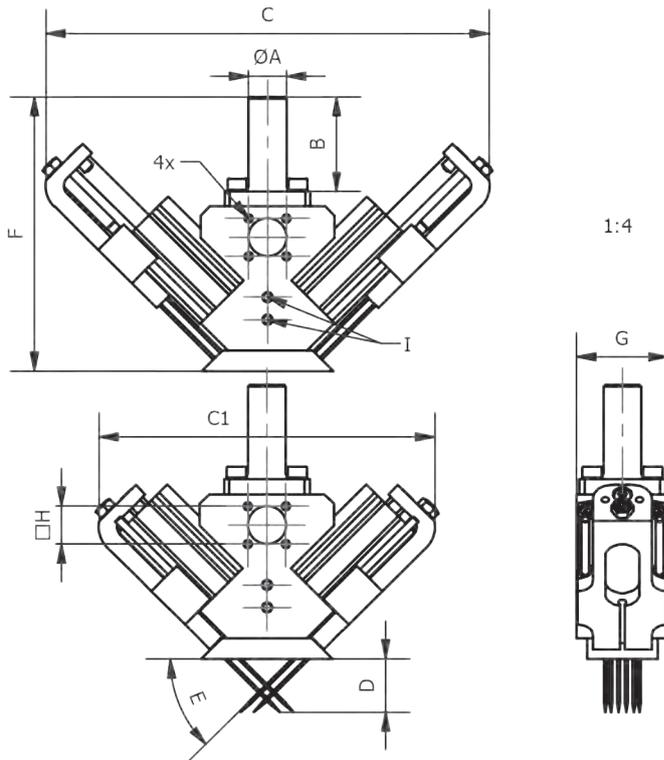
- piston diameter 20 mm
- 6 crossed needles with a diameter of 1.5 mm
- penetration depth up to 25 mm
- double-acting cylinders
- specially designed PTFE contact surface for stripping off bonds
- contact surface made of PTFE: non-sticky and insulating
- strokes can be adjusted continuously
- basic and working position can be monitored
- a cable suitable for the cable must be used
- body made of anodised Aluminium

**Drawing:**

E penetration depth of the needles  
C and C1 minimum dimension (cylinder retracted) and maximum dimension (cylinder extended)

**Accessories e.g.:**

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)



Application example with mounting with DKZ

Part No.	Description	A [mm]	B [mm]	C [mm]	C1 [mm]	D [mm]	E [°]	F [mm]	G [mm]	H [mm]	I	Weight [g]
1-460-25-00	NGR 20-6-25 D	20	50	233	177	0-25	45	145	48	20	M5	1145

## NGR X 16-10 / Needle Gripper for X-Profile

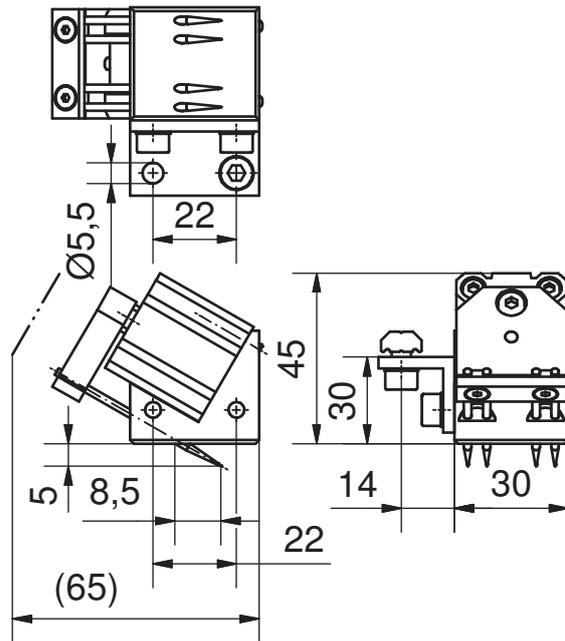
**Remarks:**

**Application: Needle Gripper for mounting directly to the X-Profile**

- double-acting cylinder
- piston diameter 16mm
- stroke 10mm
- for secure gripping of fabrics, two needle grippers should be used, working in the opposite direction
- » maximum air pressure is 6 bar, use dry and filtered air only



Contrarius mounted needle grippers NGR X 16-10 am X Profil for secure gripping of limp materials such as textiles.

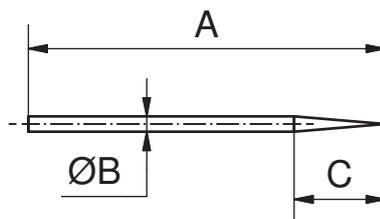


Part No.	Description	Air connection	Weight [g]	Compatible to profile
1-460-03-00	NGR X 16-10	M5	153	X

## Spare Needles for Needle Gripper

**Remarks:**

- spare needles for needle grippers, see table
- sold in units of 10 pieces



Part No.	Description	A [mm]	B [mm]	C [mm]	use for	Weight [g]	Sold in pc.
1-460-06-09	Needle 37	37	2.0	10	NGR 12	1	10
1-460-03-06	Needle 50	50	2.0	10	NGR 12 D / -DL and NGR X 16-10	1	10

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
Vacuum Cups

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

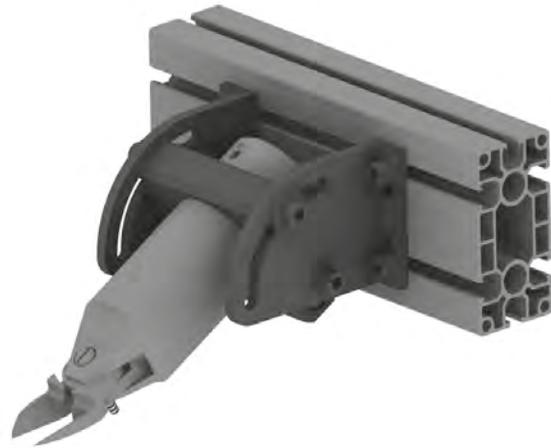
## 600 | Nipper Bodies



### Application example ASN HP



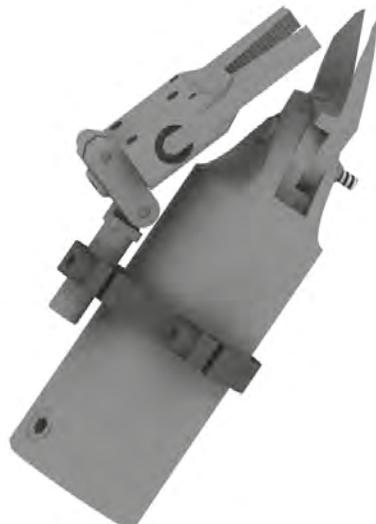
### Application example ASN SB



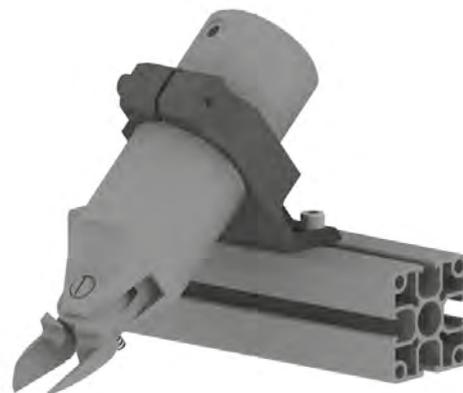
### Application examples ASZ AH



### Application example ASZ KA

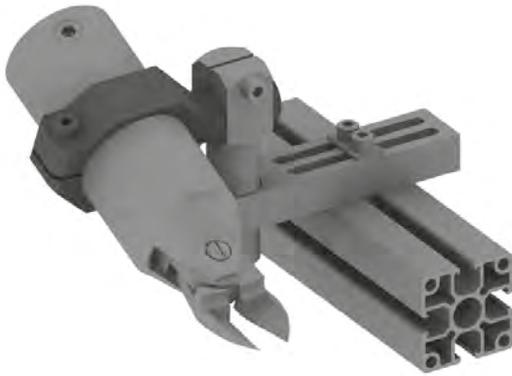


### Application example ASZ HS



# Nipper Bodies | 600

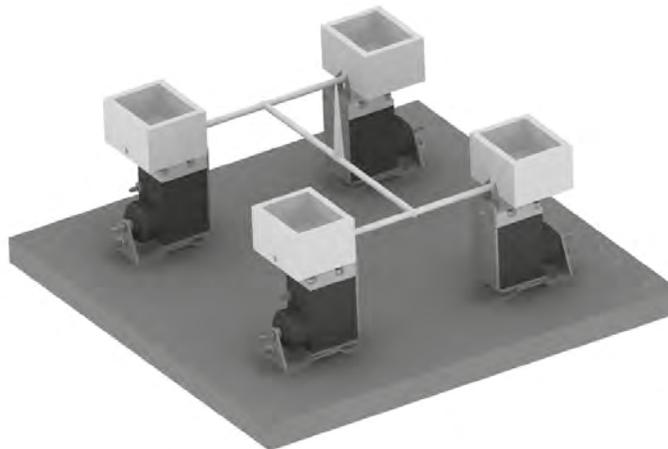
**Application example ASN KS**



**Application example ASN KF**



**Application example ASN-SE**



**Application example ASN Sensor**



For magnetic return blades only.

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
Vacuum Cups

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Manifold

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Adapters for  
Vacuum Cups

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

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Nipper Blades

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Special Elements

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Sensors

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Pneumatics

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Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 600 | Nipper Bodies

### Safety instructions for handling manually operated nippers ASN 10; 20; 30; 50; HR



Caution - Prevent anybody from touching the cutter and blade!

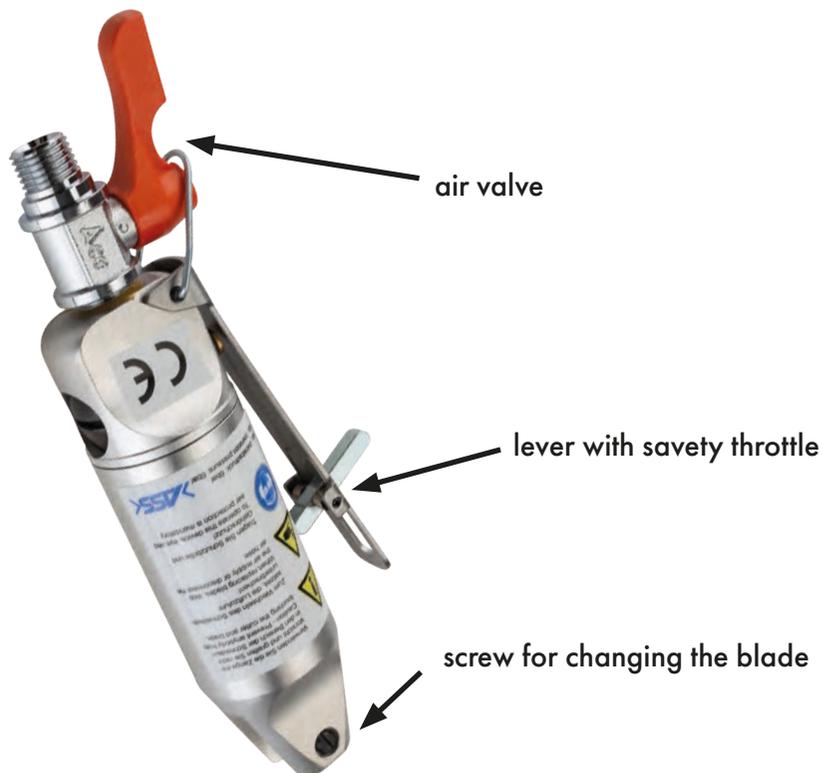


When replacing blades, stop the air supply or disconnect the air hose!



To operate the device, eye and ear protection is mandatory.

Max. operating pressure: 6 bar



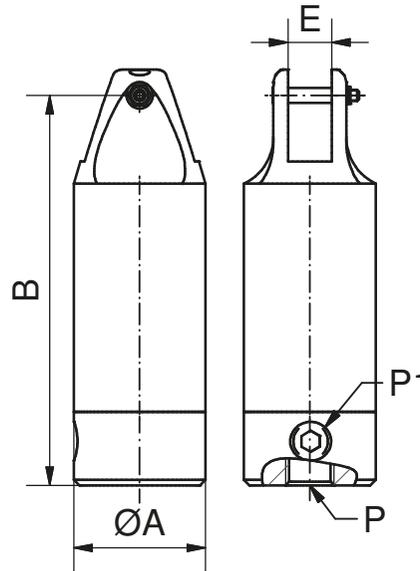
## ASN AR / Automatic-Round-Single Action

### Remarks:

- single action
- ASN ... AR
  - A automatic
  - R round
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

### Scope of Delivery:

- sold without nipper blades
- ASN 50 AR without side air port



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-655-03-00	ASN 3 AR	294	23	103	7	Rc 1/8	Rc 1/8	70
1-655-10-00	ASN 10 AR	588	36	106	12	G1/4	G1/8	157
1-655-65-00	ASN 20 AR	1372	45	119.5	12	G1/4	G1/8	280
1-660-15-00	ASN 30 AR	2744	56	154.5	17	G1/4	G1/8	521
1-660-55-00	ASN 50 AR	4704	75	164	17	G1/4	-	1000

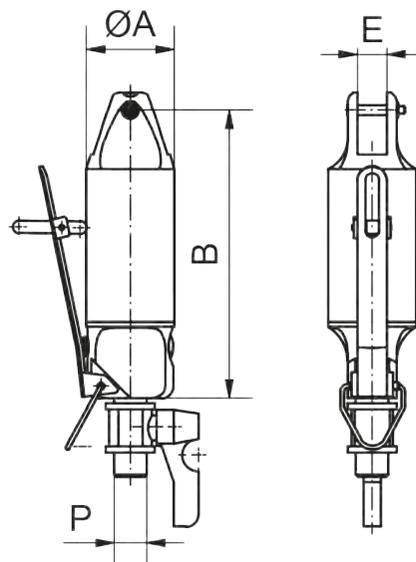
## ASN HR / Manual-Round

### Remarks:

- single action
- ASN ... HR
  - H manual
  - R round
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

### Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	Weight [g]
1-655-05-00	ASN 10 HR	588	36	117	12	G1/4	255
1-655-55-00	ASN 20 HR	1372	45	138.5	12	G1/4	427
1-660-05-00	ASN 30 HR	2744	56	174.5	17	G1/4	682
1-660-45-00	ASN 50 HR	4704	75	186	17	G1/4	1136

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

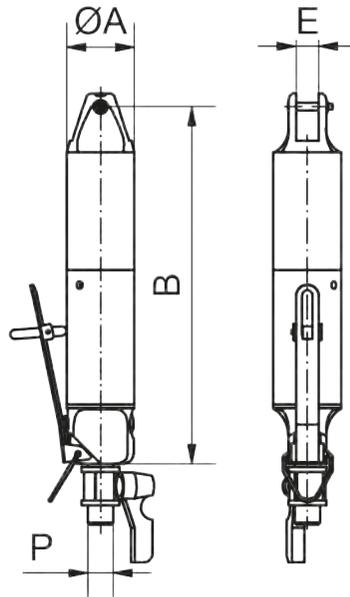
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 600 | Nipper Bodies

### ASN HRK / Manual-Round with Power Booster



**Remarks:**

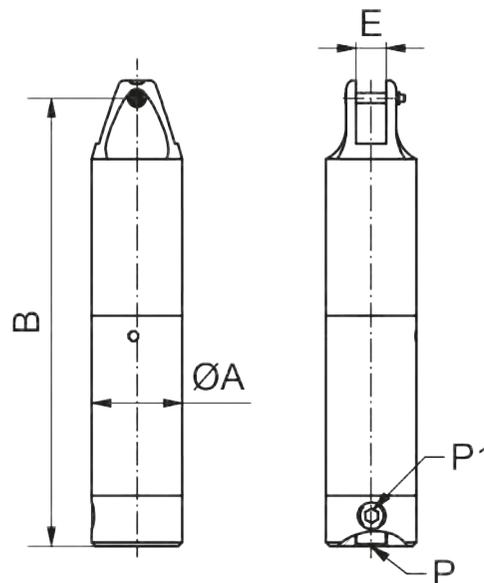
- ASN ... HRK  
H manual  
R round  
K power booster
- single-acting
- nipper Body complete (housing with power booster)
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

**Scope of Delivery:**

- sold without nipper blades

Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	Weight [g]
1-655-07-00	ASN 10 HRK	980	36	188	12	G1/4	364
1-655-60-00	ASN 20 HRK	2254	45	225.5	12	G1/4	641
1-660-10-00	ASN 30 HRK	4410	56	266.5	17	G1/4	1015
1-660-50-00	ASN 50 HRK	7742	75	319	17	G1/4	1909

### ASN ARK / Automatic-Round-Power Booster



**Remarks:**

- ASN ... ARK  
A automatic  
R round  
K power booster
- nipper Body complete (housing with power booster)
- single-acting
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

**Scope of Delivery:**

- sold without nipper blades

Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-655-15-00	ASN 10 ARK	980	36	177	12	G1/4	G1/8	266
1-655-70-00	ASN 20 ARK	2254	45	206.5	12	G1/4	G1/8	490
1-660-20-00	ASN 30 ARK	4410	56	246.5	17	G1/4	G1/8	851
1-660-60-00	ASN 50 ARK	7742	75	297	17	G1/4	-	1810

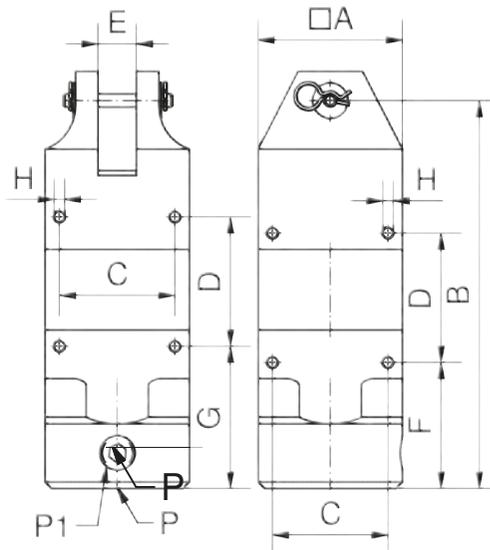
## ASN AQ / Automatic - Square

### Remarks:

- ASN ... AQ
- A automatic
- Q square
- single-acting
- body has threads for mounting (H)
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

### Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	P ["]	P1 ["]	Weight [g]
1-650-15-00	ASN 3 AQ	294	23	103	19	40	7	40	45	M3	G1/8	G1/8	95
1-650-35-00	ASN 5 AQ	392	30	87	24	30	7	34	39	M3	G1/8	G1/8	138
1-650-55-00	ASN 7 AQ	490	36	106	28	30	9	38	43	M4	G1/8	G1/8	211
1-655-30-00	ASN 10 AQ	588	36	106	28	30	12	38	43	M4	G1/4	G1/8	208
1-655-80-00	ASN 20 AQ	1372	45	120	36	40	12	39	44	M4	G1/4	G1/8	370
1-660-30-00	ASN 30 AQ	2744	56	155	46	60	17	40	50	M5	G1/4	G1/8	687

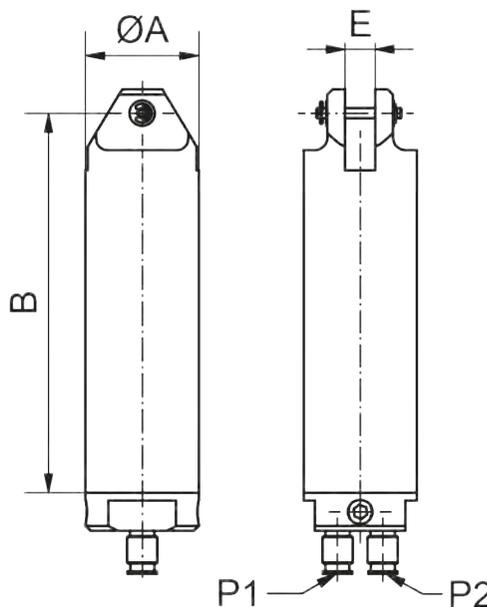
## ASN ARD / Automatic-Round-Double Action

### Remarks:

- ASN ... ARD
- A automatic
- R round
- D double action
- double-acting
- adjustable cutting speed when used with a flow control in exhaust port
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

### Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	E [mm]	P1/P2 [Ømm]	Weight [g]
1-655-25-00	ASN 10 ARD	588	36	146	9	6	289
1-655-75-00	ASN 20 ARD	1372	45	165	12	6	480
1-660-25-00	ASN 30 ARD	2744	56	216	17	6	916

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Adapters for  
Vacuum Cups

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

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Needle Gripper

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**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 600 | Nipper Bodies



### ASN ARKS / Nipper Body Automatic-Round-Power Boost-Durable

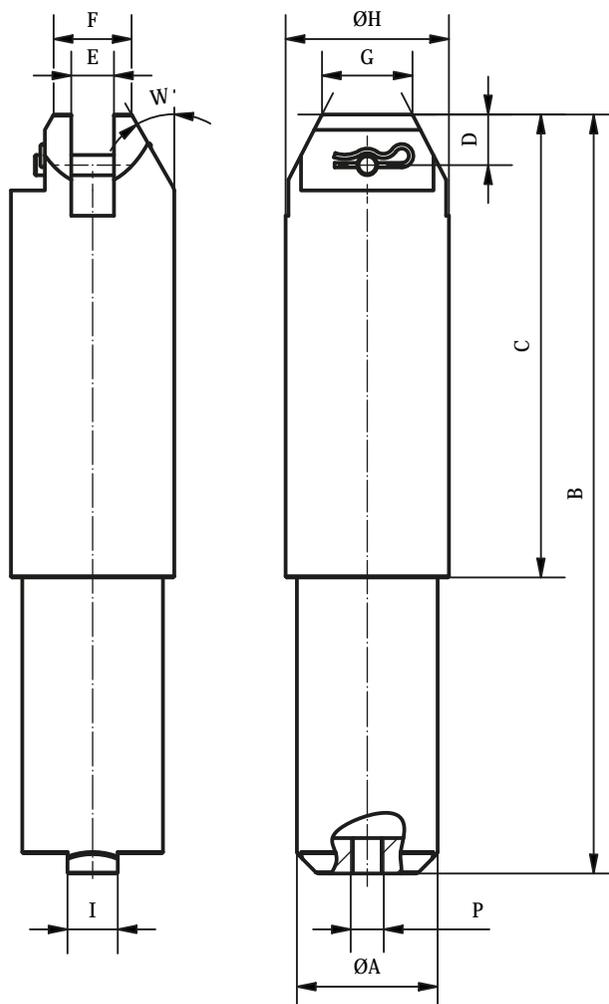


#### Remarks:

- ASN...ARKS
  - A automatic
  - R round
  - K power boost
  - S durable
- efficient design
- maximum power development
- cutting force of up to 6400 N
- operating pressure 0.6 MPa
- housing made of Aluminium
- for plastics and metal industry
- single-acting nipper body
- » Attention! Special nipper blades are required for this nipper body!
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

#### Scope of Delivery:

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	P [°]	W [°]	Weight [g]
1-661-00-00	ASN ARKS	6400	56	300	183	20	17	31	36	65	20	G1/4	30	1141

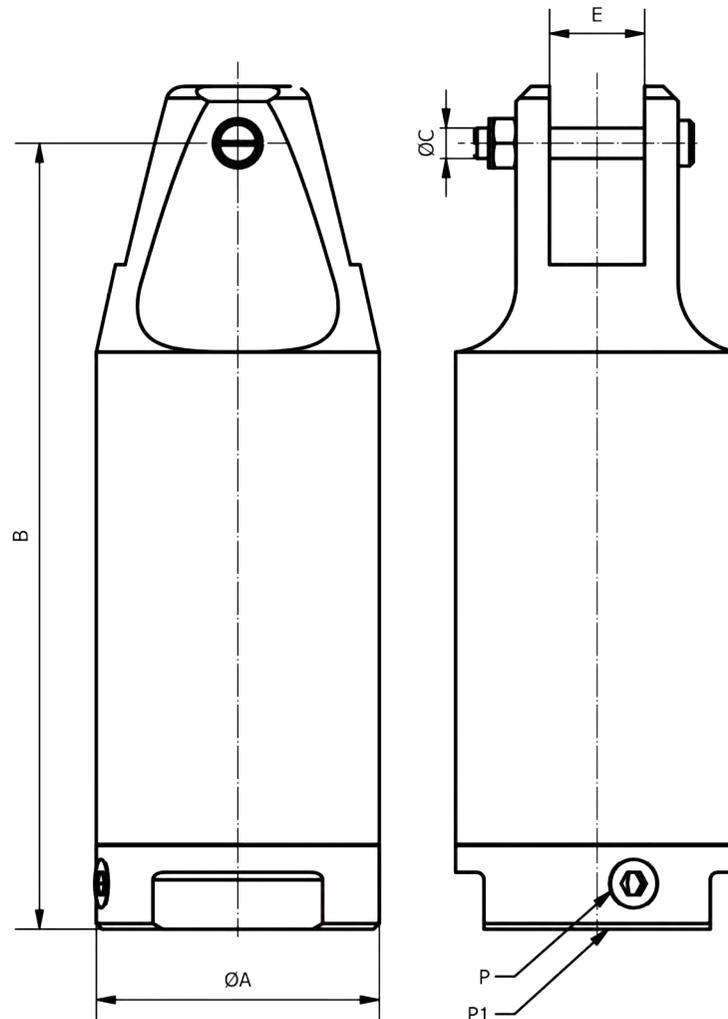
**ASN AR VS / Nipper Body  
Automatic-Round-Strengthened**

**Remarks:**

- ASN...AR VS
  - A automatic
  - R round
  - S strengthened
- cutting force over 4700 N
- bolt diameter 8mm; in comparison ASN 50 AR has 5mm
- housing made of Aluminium
- for plastics and metal industry
- single-acting nipper body
  - » Attention! Special nipper blades are required for this nipper body!
  - » Attention! Observe operating instructions!
  - » The applied cutting force depends on the nipper blade!
  - » Maximum air pressure is 6 bar, use dry and filtered air only!

**Scope of Delivery:**

- sold without nipper blades



Part No.	Description	Closing force max. [N]	A [mm]	B [mm]	C [mm]	E [mm]	P ["]	P1 ["]	Weight [g]
1-660-56-00	ASN 50 AR VS	4.704	75	207	8	25	G1/4	G1/4	1186

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
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Special Elements

**800**  
Electrics and  
Sensors

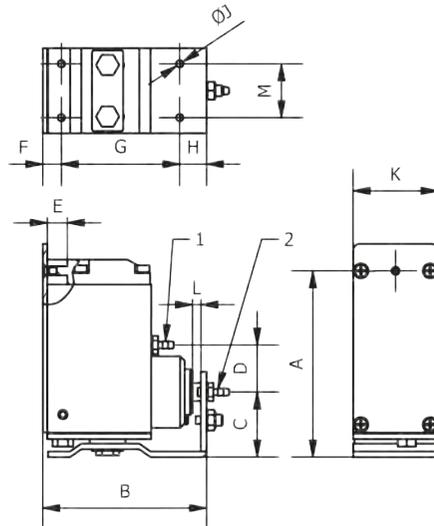
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 600 | Nipper Bodies

## ASN SE / Nipper Bodies 90° with Stroke



**Remarks:**

- ASN...SE  
S stationary  
E single action
- with stroke
- continuous adjustment
- » Attention! Special nipper blades are required for this nipper body!
- » Attention! Observe operating instructions!
- » The applied cutting force depends on the nipper blade!
- » Maximum air pressure is 6 bar, use dry and filtered air only!

**Drawing:**

- 1 air connection nipper
- 2 air connection stroke

**Scope of Delivery:**

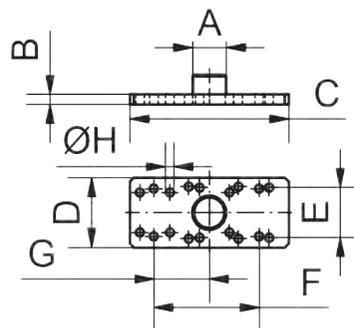
- sold without nipper blades

Part No.	Description	Closing force max. [N]	Pneuma. Hose Connection	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
1-662-05-00	ASN 3 SE	147	4/3	63	62	23	15	7	9.5
1-662-10-00	ASN 5 SE	196	4/3	66	64	25	20	7	7
1-662-25-00	ASN 10 SE	515	4/3	83	73	29	21	9	8
1-662-60-00	ASN 20 SE	930	6/4	96	103	33	22	12	10

Part No.	Description	G [mm]	H [mm]	J [mm]	K [mm]	Stroke L [mm]	M [mm]	Weight [g]
1-662-05-00	ASN 3 SE	43	10	M3	19	0-3	14	226
1-662-10-00	ASN 5 SE	45	12	M4	32	0-3	20	252
1-662-25-00	ASN 10 SE	53	12	M4	38	0-3	24	503
1-662-60-00	ASN 20 SE	80	13	M5	44	0-8	28	879

## ASN HP / Mounting Bracket for ASN SE



**Remarks:**

- use with VLR extension tube
- » see application example

**Accessories:**

- Extension Tube VLR

Part No.	Description	for sprue cutter	Compatible to profile	A [mm]	Connection
1-640-58-00	ASN HP 14	ASN 3 SE	X	M12x1	VLR 14
1-640-61-00	ASN HP 20	ASN 5 SE/ASN 10 SE	X, JU	M17x1	VLR 20
1-640-64-00	ASN HP 30	ASN 20 SE	X, JU	M27x1	VLR 30

Part No.	Description	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-640-58-00	ASN HP 14	4	60	30	14	43	23.5	3.4	21
1-640-61-00	ASN HP 20	5	80	35	20/24	45/53	35/28	4.2	41
1-640-64-00	ASN HP 30	5	100	40	28	80	41.5	5.5	69

## ASZ AH / Sprue Gripper for Nipper Bodies ASZ and ASN

**Remarks:**

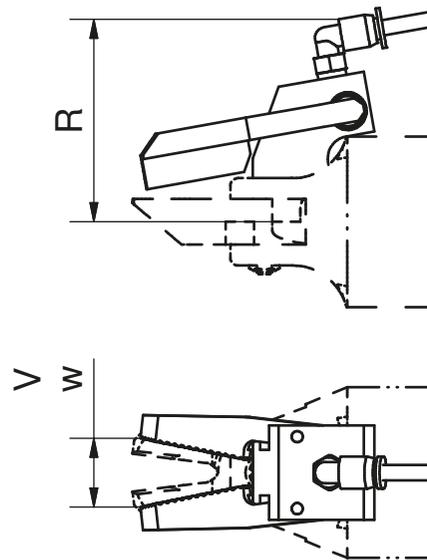
- for assembling with sprue cutters
- spring return/single action
- can be actuated from the same valve as the sprue cutter
- » Maximum air pressure is 6 bar, use dry and filtered air only!
- » see application example

**Scope of Delivery:**

- sold separately from sprue cutter ASZ... and ASN...
- for assembling with ASN HR a Thread Coupling PMM 1/4 is needed

**Accessories:**

- Thread Coupling PMM 1/4 (Part No. 1-858-42-00)



Assembled delivery condition

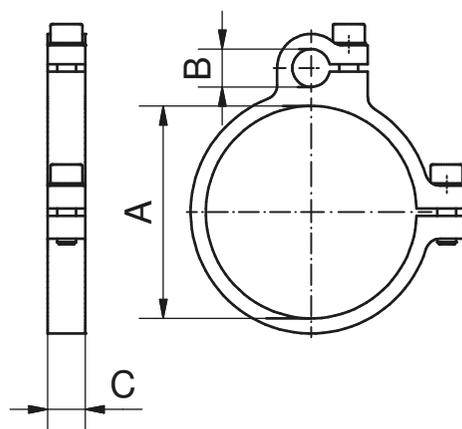


Part No.	Description	R [mm]	V max. [mm]	W min. [mm]	for sprue cutter	Weight [g]
1-640-03-00	ASZ 20 AH	54.6	18	1	ASN 20 AR or HR	128
1-640-06-00	ASZ 30-50 AH	48.3	20	1	ASN30/50 AR or HR	124

## ASZ KA / Combination Clamp for Sprue Gripper + Nipper ASZ / ASN

**Remarks:**

- use in combination with GRZ 10-08 or GRZ 10-12 gripper
- various mounting options for gripper GRZ
- » see application example



Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	Weight [g]
1-640-10-00	ASZ 10 KA	ASN 10	36	10	10	29
1-640-13-00	ASZ 20 KA	ASN 20	45	10	10	33
1-640-16-00	ASZ 30 KA	ASN 30	56	10	10	36
1-640-19-00	ASZ 50 KA	ASN 50	75	10	10	41

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
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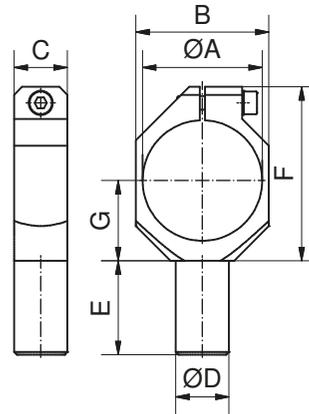
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 600 | Nipper Bodies

### ASZ KS / Mounting Bracket for Nipper Bodies ASN

### ASZ KS BS / Mounting Bracket for Nipper Bodies ASN, Blue Scale



**Remarks:**

- for mounting round nipper bodies
- » see application example

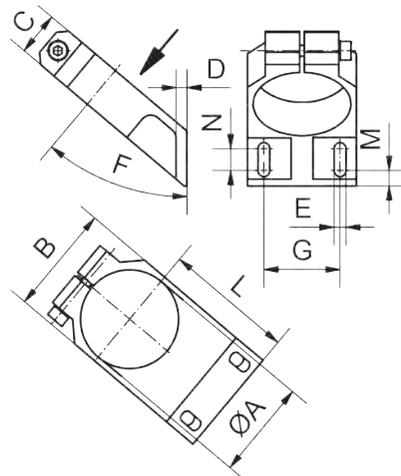
**Type WST BS „Blue Scale“**

*Application: for exact mounting and replicable positioning of angles etc.*

- as above
- blue anodized
- with marking for exact positioning
- more Blue Scale parts are available for WST, WKA, GLA and GLA V

Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [g]	
1-640-30-00	ASZ 3 KS	ASN 3	23	27	8	6	15	33	15	8	
1-640-31-00	ASZ 10 KS	ASN 10	36	40	15	14	25	51	22	30	
1-640-32-00	ASZ 10 KS BS	ASN 10	36	40	15	14	25	51	22	30	<b>New</b>
1-640-34-00	ASZ 20 KS	ASN 20	45	50	20	20	35	65	30	74	
1-640-35-00	ASZ 20 KS BS	ASN 20	45	50	20	20	35	65	30	74	<b>New</b>
1-640-37-00	ASZ 30 KS	ASN 30	56	60	20	20	40	75	35	83	
1-640-39-00	ASZ 30 KS BS	ASN 30	56	60	20	20	40	75	35	83	<b>New</b>
1-640-40-00	ASZ 50 KS	ASN 50	75	85	20	20	55	95	45	153	
1-640-41-00	ASZ 50 KS BS	ASN 50	75	85	20	20	55	95	45	153	<b>New</b>

### ASZ HS / Mounting Bracket for Nipper Body ASN



**Remarks:**

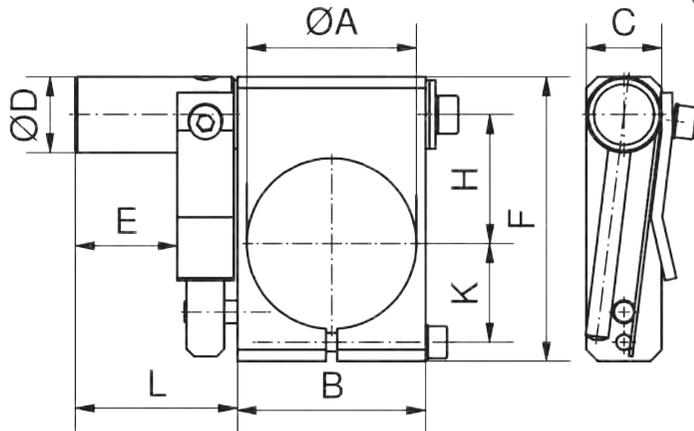
- for mounting a nipper body in an 40° respectively 30° angle
- fine adjustment is possible

Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [°]	G [mm]	M [mm]	N [mm]	L [mm]	Weight [g]
1-640-22-00	ASZ 20 HS	ASN20	45	50	20	5	5.5	40	35	7	10	59	89
1-640-25-00	ASZ 30 HS	ASN30	56	60	25	5	5.5	30	45	6	12	84	161
1-640-28-00	ASZ 50 HS	ASN50	75	85	25	5	6.6	30	70	6	12	99	285

## ASZ KF / Spring Loaded Mounting Bracket for ASN

**Remarks:**

- spring compensated mounting bracket
- allows robot to push part against the nipper (blade)

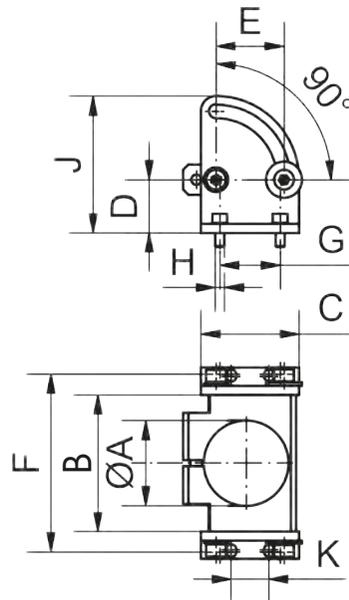


Part No.	Description	for sprue cutter	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	K [mm]	L [mm]	Weight [g]
1-640-43-00	ASZ 20 KF	ASN20	45	50	20	20	27	75	34	26	43	242
1-640-46-00	ASZ 30 KF	ASN30	56	60	20	20	35	86	38	33	50.5	361
1-640-49-00	ASZ 50 KF	ASN50	75	85	20	20	45	106	48	42	61	506

## ASN SB / Swivel Bracket for Nipper Body

**Remarks:**

- directly screwed onto plate or profile
- nippers are clamped and can be steplessly swiveled in the range of 90°
- by turning the nipper 180° in the Swivel Bracket, the nipper blades can be positioned at any angle



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	J [mm]	Weight [g]
1-640-70-00	ASN SB 10	36	56	55	35	35	74	40	M5	25	80	237
1-640-71-00	ASN SB 20	45	73	60	35	40	95	40	M6	25	85	351
1-640-72-00	ASN SB 30	56	90	65	35	45	114	40	M6	25	90	487
1-640-73-00	ASN SB 50	75	100	85	47	65	85/135	40	M6	-	122	902

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

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Profiles  
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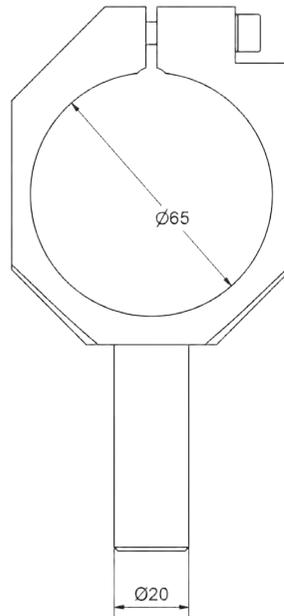
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## 600 | Nipper Bodies

### ASN ARKS KS / Mounting Bracket for Nipper Body ASN ARKS

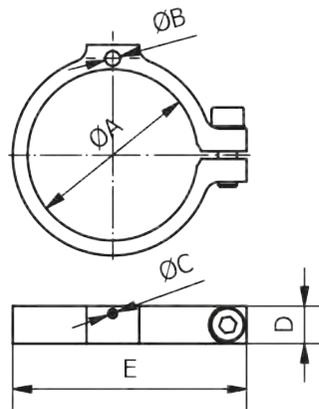


**Remarks:**

- mounting adapter for easy connecting and flexible usage of ASN ARKS

Part No.	Description	Compatible to	Material	Weight [g]
1-640-38-00	ASN ARKS KS	ASN ARKS	Aluminium	157

### ASN SH / Sensor Mounting Bracket for Nipper Bodies



**Remarks:**

- enables the integration of sensors at nippers bodies with magnetic blades for sensing the open and closed position of the nipper blade
- more safety for degating
- sensors can be added easily

**Accessories:**

- Sensor MFS T2 3,7 (Part No. 1808-30-00)

Part No.	Description	compatible to	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-640-75-00	ASN SH 10	ASN 10	36	4	2,5	10	53	20
1-640-76-00	ASN SH 20	ASN 20	45	4	2,5	10	62	24
1-640-77-00	ASN SH 30	ASN 30	56	4	2,5	10	73	25
1-640-78-00	ASN SH 50	ASN 50	75	4	2,5	10	88	33

**ASN G / Stationary Cutting Unit „Guillotine“**

**Remarks:**

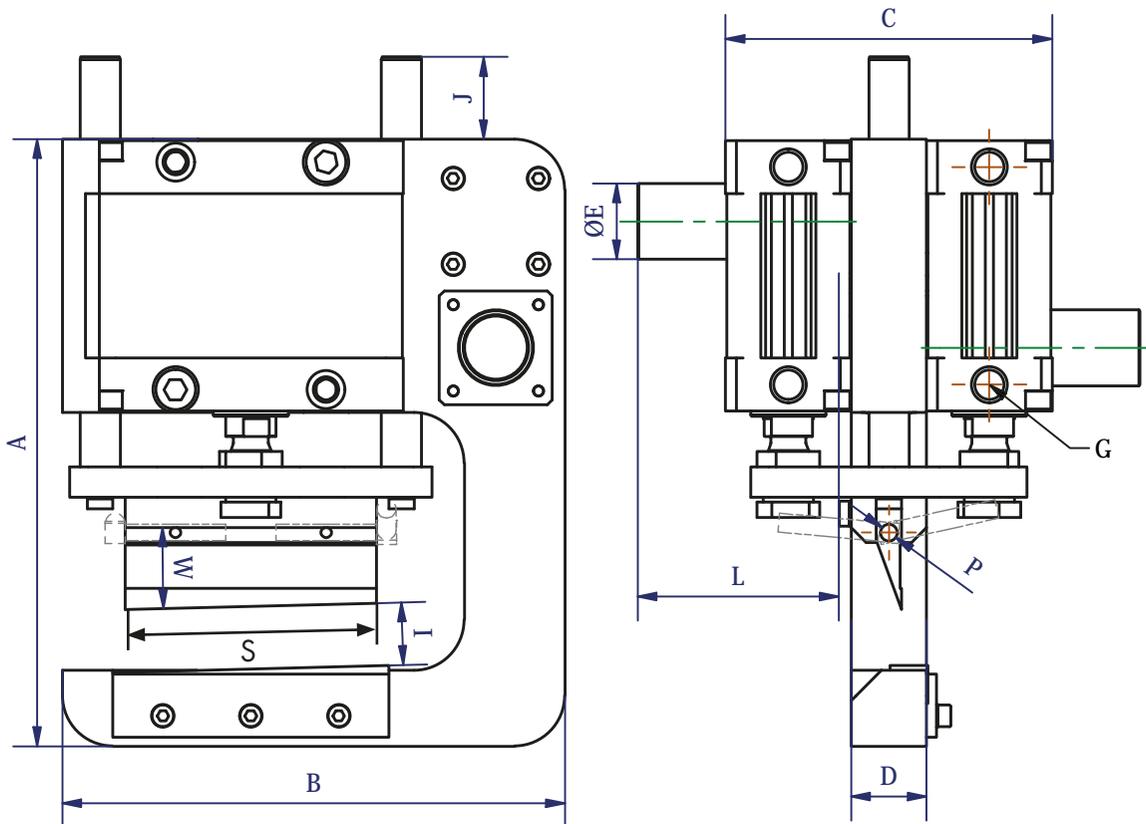
- cutting unit using the „Guillotine“ principle
- max. operating pressure 10 bar / 1,0 MPa
- max. closing force 6,234 N (at 10 bar)
- blade with teflon-coating
- heatable blade
- blade and anvil easy to change
- double-acting
- delivery time on demand

**On demand:**

- with direct and/or indirect sensing

**Accessories:**

- standard heating cartridge as available on the market (Ø 6,5)
- T-Nut Sensor



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [N] 6 bar	G [°]	Stroke [mm]	I [mm]	J [mm]
1-700-01-00	ASN G 63-25	240	210	130	30	30	3741	1/4	25	25	32.5

Part No.	Description	Blade S [mm]	Piston Ø [mm]	L [mm]	P Ø [mm]	W [°]	Weight [g]
1-700-01-00	ASN G 63-25	100	63	80	6,5	1.5	12580

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

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**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

## Cutting ability \* Ø [mm]

Part No.	Description	W Ø [mm]	H Ø [mm]
1-671-03-00	SES 3-15-11-S	2	-
1-671-03-51	SES 3-15-11-H	2	-
1-671-05-00	SES5-15-11S	2	-
1-671-05-51	SES5-15-11-H	2	-
1-671-07-00	SES7-40-10S	3	2
1-671-07-01	SES7-30-11S	3	2
1-671-07-51	SES7-30-11H	3	2
1-671-10-01	SES10-15-16S	4	2,6
1-671-10-03	SES10-15-35S	3,5	2
1-671-10-05	SES10-40-13S	4	2,6
1-671-10-51	SES10-40-13 H	4	2,6
1-671-20-00	SES20-40-13S	7	5
1-671-20-01	SES20-23-25S	6,5	4,5
1-671-20-02	SES20-15-16S	7	5
1-671-20-03	SES20-15-35S	6,5	4,5
1-671-20-04	SES20-40-32S	6	4
1-671-20-51	SES20-40-13 H	7	5
1-671-30-01	SES30/50-30-25S	10	6,5
1-671-30-02	SES30/50-30-50S	8	5
1-671-30-03	SES30/50-15-38S	10	6,5
1-671-30-04	SES30/50-60-32S	8	5
1-671-30-05	SES30/50-30-44S	8	5
1-671-30-51	SES30/50-30-23H	10	6,5
1-672-20-00	SEW20-90-18-45S	6,5	4,5
1-672-20-01	SEW20-90-18-62S	5	3
1-672-20-02	SEW20-90-16-40S	6,5	4,5
1-672-20-03	SEW20-90-34-50S	5	3
1-672-30-00	SEW30/50-90-35-50S	8	5
1-672-30-01	SEW30/50-90-41-65S	8	5
1-672-30-51	SEW30/50-90-25-50H	8	5
1-673-03-00	SEG3-0-12S	2	-
1-673-05-00	SEG5-0-12S	2	-
1-673-20-00	SEG20-0-18S	7	5
1-673-30-00	SEG30/50-0-41S	8	5
1-673-30-01	SEG30/50-0-43S	7	4,5
1-673-30-03	SEG30/50-0-37S	8	5
1-673-91-00	SEG-ASNSE3-0-11S	1,5	1
1-673-91-01	SEG-ASNSE5-0-12S	2,5	1,5
1-673-91-02	SEG-ASNSE10-0-12S	3,5	2,3
1-673-91-03	SEG-ASNSE20-0-20S	5	3,4
1-674-07-00	SEK7-14-9S	3	2
1-674-10-00	SEK10-15-12S	4	3
1-674-20-00	SEK20-15-12S	7	5
1-674-30-00	SEK30/50-70-17S	5,5	3,5
1-674-30-01	SEK30/50-28-17S	10	6,5
1-675-30-00	SEZ30/50-0-32S	5	3

### Explanation report

The cutting ability is affected by a lot of factors:

- the shear strength of the plastic
- the temperature of the plastic
- the geometry of the cutting area
- for fiber-reinforced plastics, the amount and the attitude of the fiber

All these factors also have an affect on the durability of the cutting edge!

All the datas of these scale are only bench marks.  
Practically results can deviate positive and negative from this data.

**\* = designed for sprues up to Ø (see table)**

- Column W:  
Plastic (soft) Elastic modulus < 2500 N/mm<sup>2</sup>
- Column H:  
Plastic (hard) Elastic modulus > 2500 N/mm<sup>2</sup>

### Remark for Carbide Nippers:

Advantage: high wear resistance  
Disadvantage: sensitive for shocks

## SES / Nipper Blades Standard

**Remarks:**

„SES3-15-11S“

- SE cutter blade
- S standard
- 3 for sprue cutters ASN 3
- 15 angle
- 11 cutting length
- S steel alloy
- H carbide

**All cutter blades' cutting edge is on the outside, with the exceptions of:**

1-671-20-04, SES 20-40-32 S and 1-671-30-05, SES 30/50-30-44 S which feature an inverted cutting surface

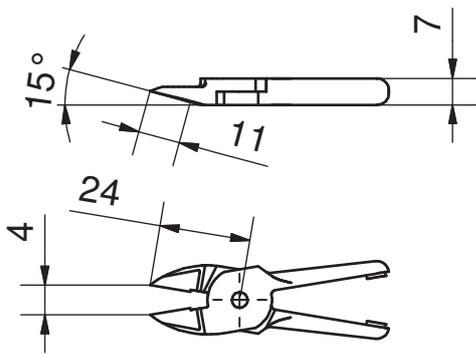
**Remarks for the compatible types of Nipper Bodies ASN:**

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

**Opening size of the Nipper Blades SES30/50...:**

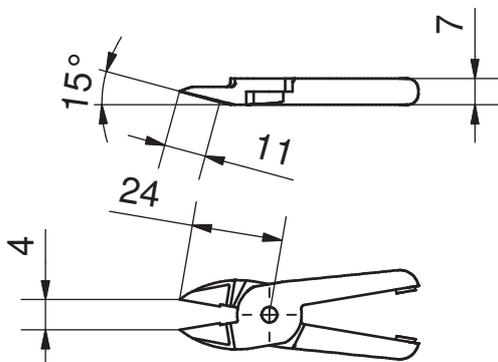
The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

### SES-3 / Nipper Blades Standard for ASN 3



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-03-00	SES3-15-11S	ASN 3...	Steel alloy	28	1-690-90-00
1-671-03-51	SES3-15-11H	ASN 3...	Carbide	30	1-690-90-00

### SES-5 / Nipper Blades Standard for ASN 5



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-05-00	SES5-15-11S	ASN 5 AQ	Steel alloy	32	1-690-90-00
1-671-05-51	SES5-15-11H	ASN 5 AQ	Carbide	34	1-690-90-00

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

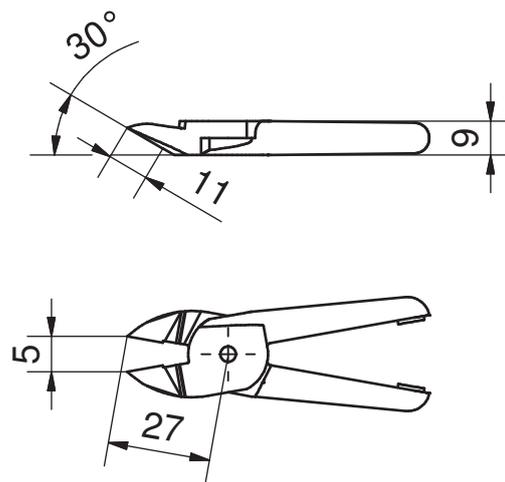
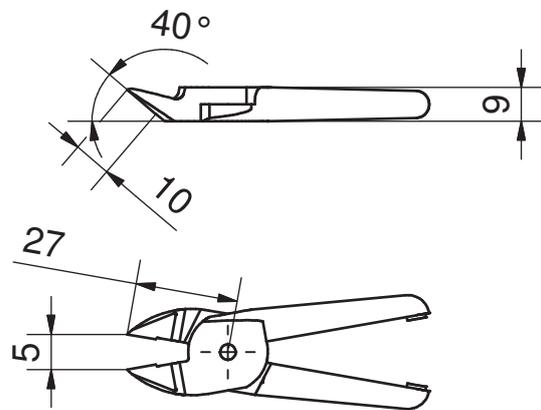
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

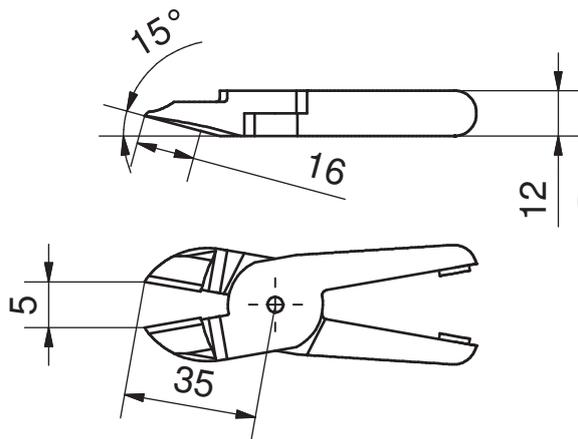
# 610 | Nipper Blades

## SES-7 / Nipper Blades Standard for ASN 7



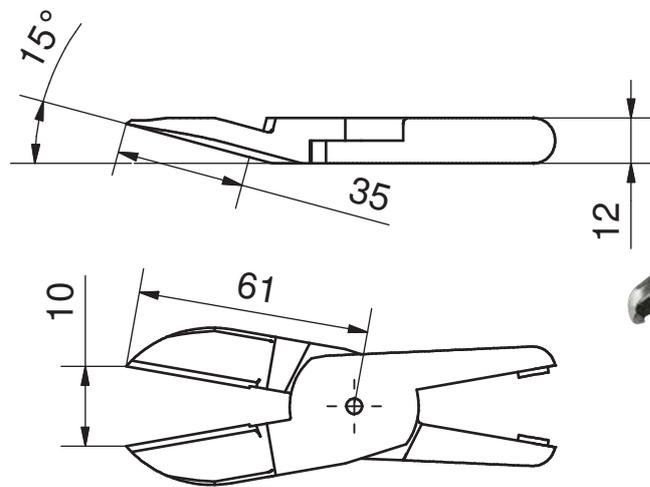
Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-07-00	SES7-40-10S	ASN 7 AQ	Steel alloy	72	1-690-90-01
1-671-07-01	SES7-30-11S	ASN 7 AQ	Steel alloy	71	1-690-90-01
1-671-07-51	SES7-30-11H	ASN 7 AQ	Carbide	73	1-690-90-01

## SES-10 / Nipper Blades Standard for ASN 10



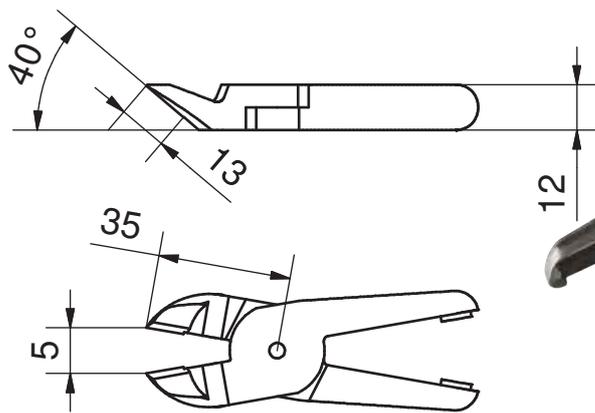
1-671-10-01

1-671-10-02



1-671-10-03

1-671-10-04



1-671-10-05  
1-671-10-51

1-671-10-06

Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-10-01	SES10-15-16S	ASN 10...	Steel alloy	114	1-690-90-02
1-671-10-02	SES10-15-16S Magnet	ASN 10...	Steel alloy	114	Magnet return
1-671-10-03	SES10-15-35S	ASN 10...	Steel alloy	155	1-690-90-02
1-671-10-04	SES10-15-35S Magnet	ASN 10...	Steel alloy	155	Magnet return
1-671-10-05	SES10-40-13S	ASN 10...	Steel alloy	116	1-690-90-02
1-671-10-06	SES10-40-13S Magnet	ASN 10...	Steel alloy	116	Magnet return
1-671-10-51	SES10-40-13 H	ASN 10...	Carbide	121	1-690-90-02

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

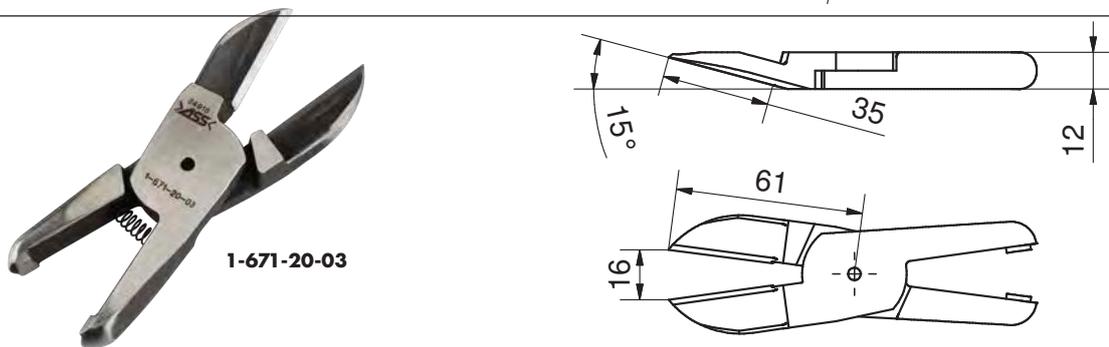
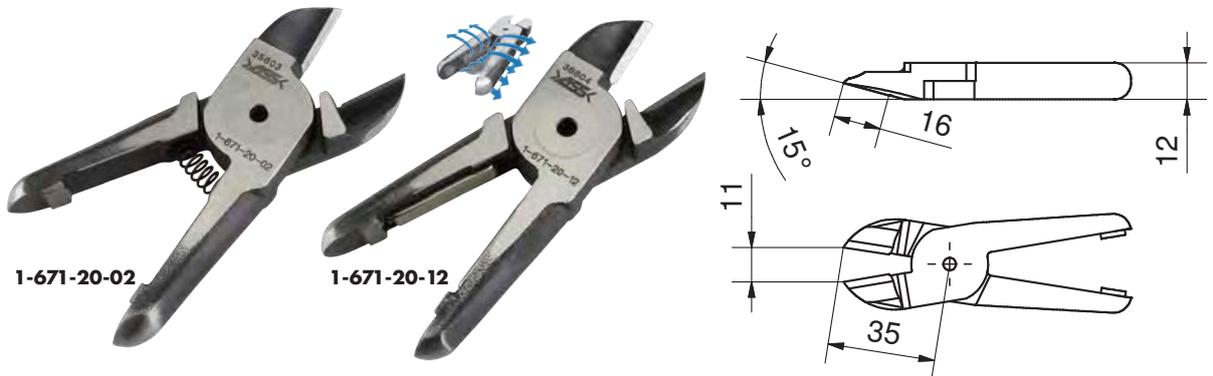
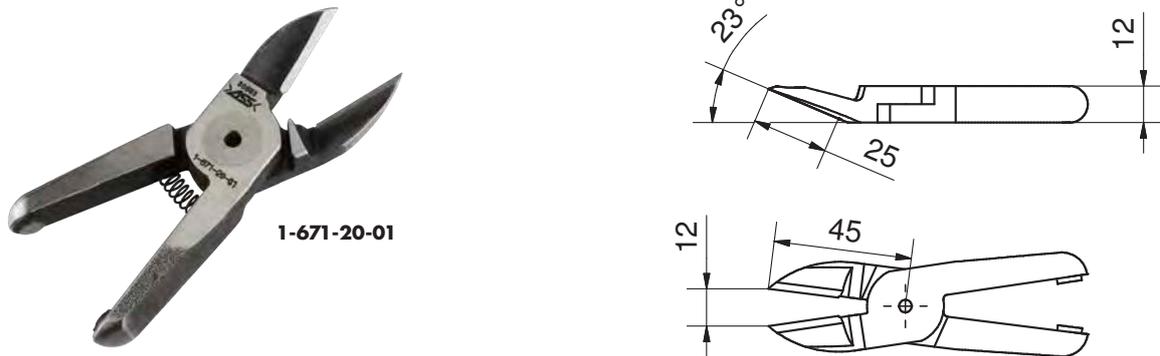
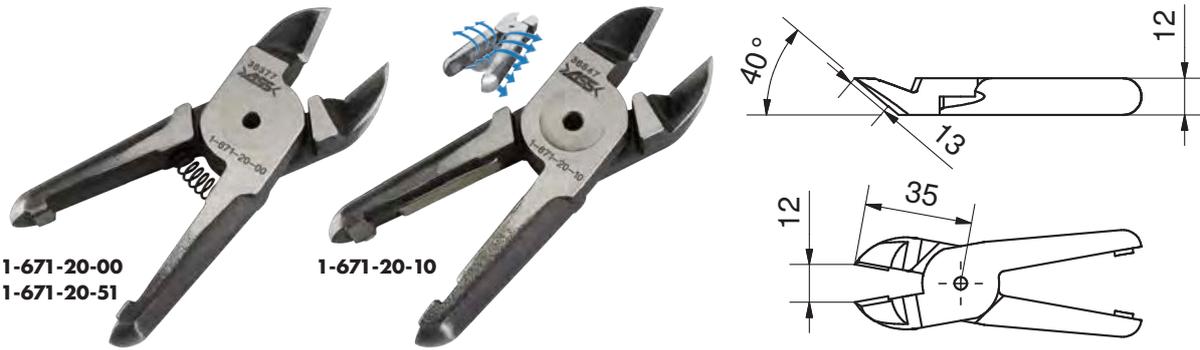
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

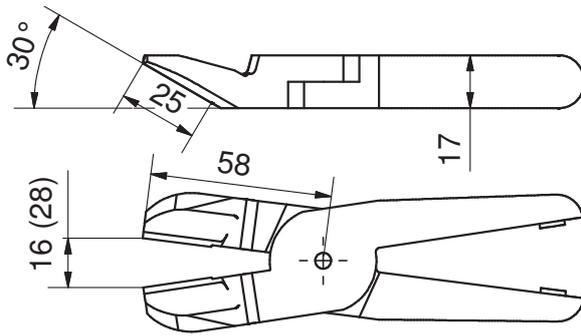
# 610 | Nipper Blades

## SES-20 / Nipper Blades Standard for ASN 20



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-20-00	SES20-40-13S	ASN 20...	Steel alloy	121	1-690-90-02
1-671-20-10	SES20-40-13S Magnet	ASN 20...	Steel alloy	121	Magnet return
1-671-20-01	SES20-23-25S	ASN 20...	Steel alloy	128	1-690-90-02
1-671-20-02	SES20-15-16S	ASN 20...	Steel alloy	121	1-690-90-02
1-671-20-12	SES20-15-16S Magnet	ASN 20...	Steel alloy	116	Magnet return
1-671-20-03	SES20-15-35S	ASN 20...	Steel alloy	182	1-690-90-02
1-671-20-51	SES20-40-13H	ASN 20...	Carbide	124	1-690-90-02

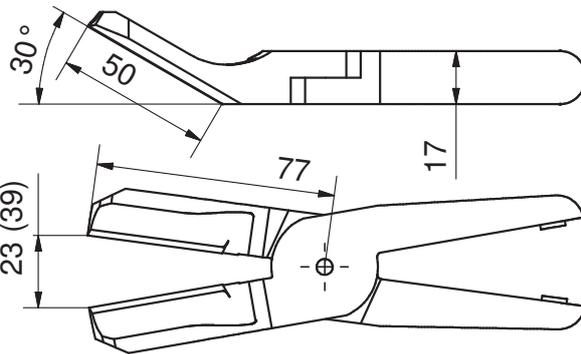
## SES-30-50 / Nipper Blades Standard for ASN 30-50



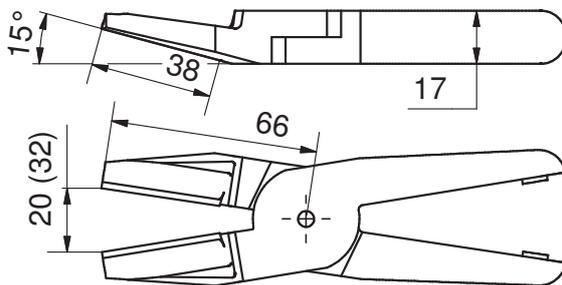
1-671-30-01  
1-671-30-51



1-671-30-11



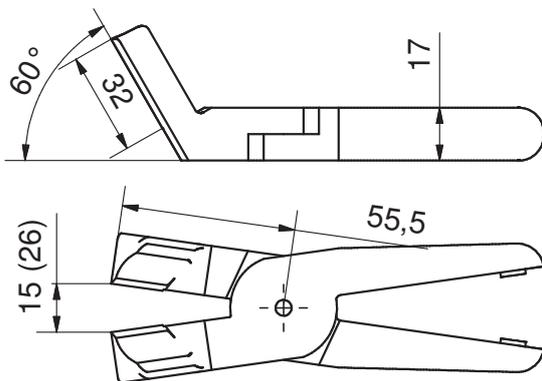
1-671-30-02



1-671-30-03



1-671-30-13



1-671-30-04



Part No.	Description	compatible with	Material	Weight [g]	Part No. exchange spring
1-671-30-01	SES30/50-30-25S	ASN 30/ASN 50...	Steel alloy	365	1-690-90-03
1-671-30-11	SES30/50-30-25S Magnet	ASN 30/ASN 50...	Steel alloy	369	Magnet return
1-671-30-02	SES30/50-30-50S	ASN 30/ASN 50...	Steel alloy	372	1-690-90-03
1-671-30-03	SES30/50-15-38S	ASN 30/ASN 50...	Steel alloy	355	1-690-90-03
1-671-30-13	SES30/50-15-38S Magnet	ASN 30/ASN 50...	Steel alloy	283	Magnet return
1-671-30-04	SES30/50-60-32S	ASN 30/ASN 50...	Steel alloy	355	1-690-90-03
1-671-30-51	SES30/50-30-23H	ASN 30/ASN 50...	Carbide	365	1-690-90-03

Due to fabrication tolerances the dimensions of technical images and weight in category 610 may vary up to +/- 5 %.

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
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Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

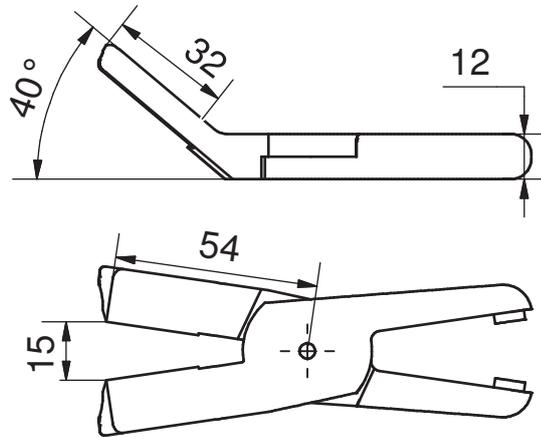
**990**  
PA-Forming  
Others

# 610 | Nipper Blades

## SES 20 / Nipper Blades with Inverted Cutting Edge



1-671-20-04

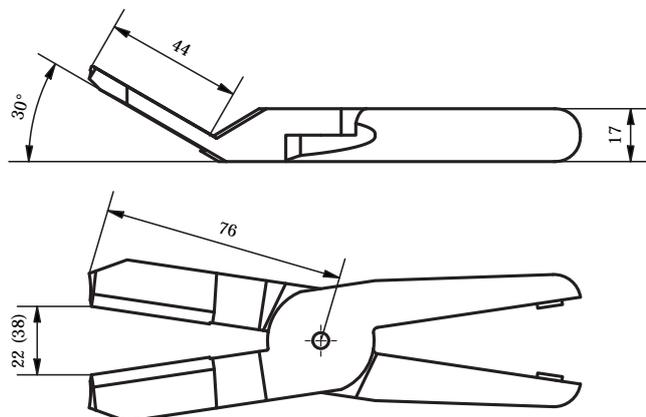


Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-20-04	SES 20-40-32 S	ASN 20...	Steel alloy	193	1-690-90-02

## SES-30-50 / Nipper Blades with Inverted Cutting Edge



1-671-30-05



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-671-30-05	SES30/50-30-44S	ASN 30/ASN 50...	Steel alloy	386	1-690-90-03

## SEW / Nipper Blades, 90° Angle

**Remarks:**

„SEW20-90-18-45S“

SE	cutter blade
W	form W - angle
20	for sprue cutter ASN 20...
90	angle
18	cutting surface
45	extension
S	steel alloy
H	carbide

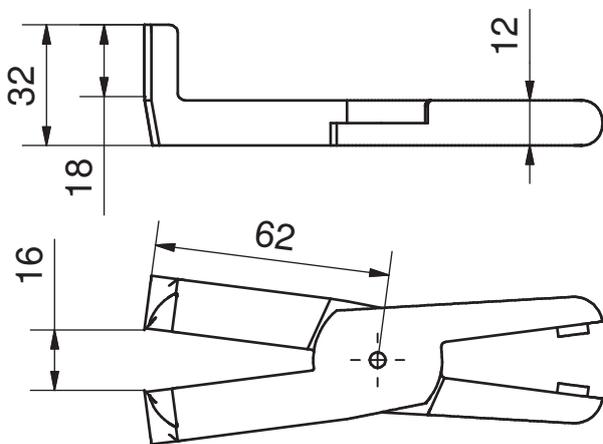
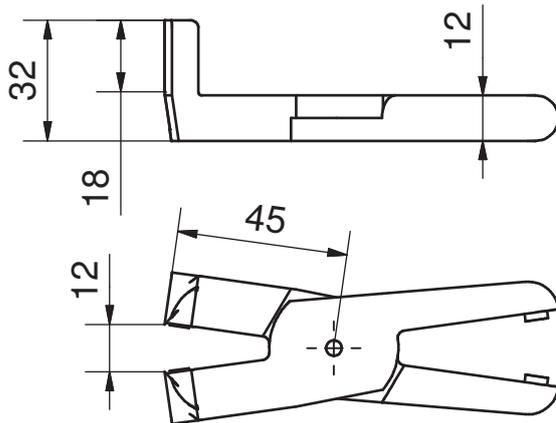
**Remarks for the compatible types of Nipper Bodies ASN:**

HR	hand operated round
AR	automatic round
HRK	hand operated round with power boost
ARK	automatic round with power boost
AQ	automatic square

**Opening size of the Nipper Blades SEW30/50...:**

The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

## SEW-20 / Nipper Blades with 90° Angle for ASN 20



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

**220**  
Vacuum Cups

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

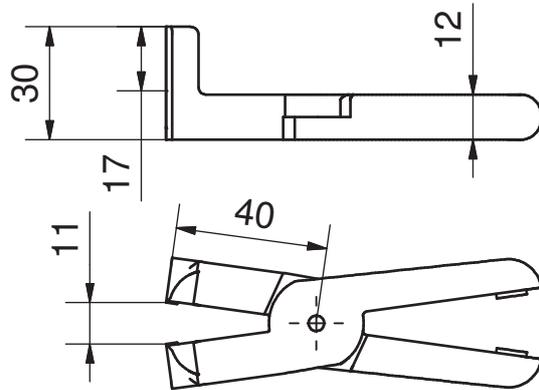
**990**  
PA-Forming  
Others

# 610 | Nipper Blades

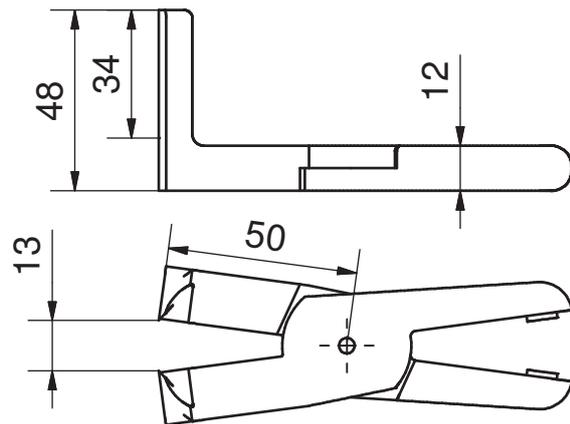
## SEW-20 / Nipper Blades with 90° Angle for ASN 20 (Continuation)



**1-672-20-02**

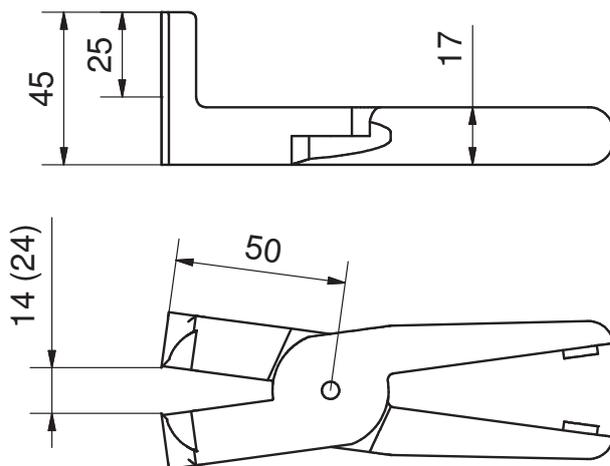
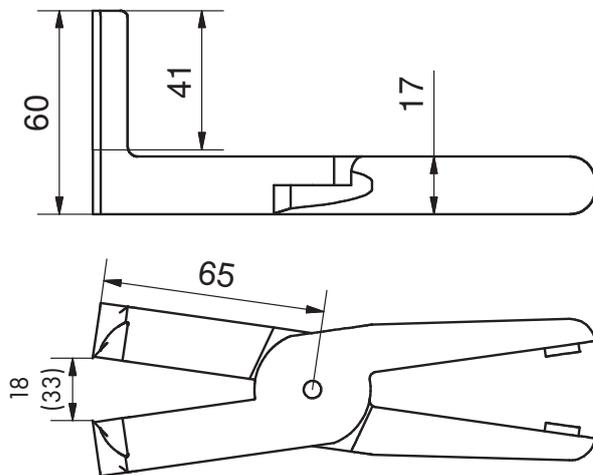
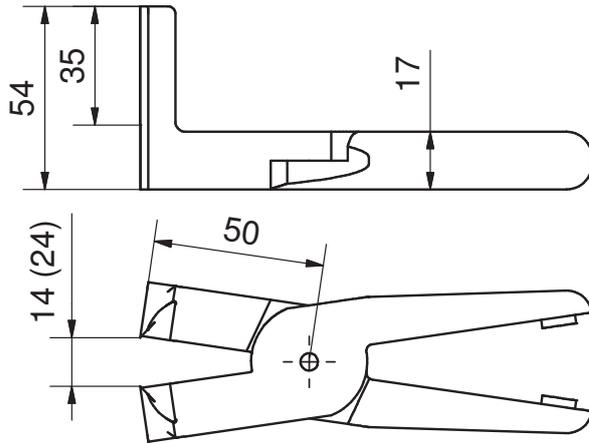


**1-672-20-03**



Part No.	Description	compatible with	Material	Weight [g]	Part No. for exchange spring
1-672-20-00	SEW20-90-18-45S	ASN 20...	Steel alloy	224	1-690-90-02
1-672-20-01	SEW20-90-18-62S	ASN 20...	Steel alloy	271	1-690-90-02
1-672-20-02	SEW20-90-16-40S	ASN 20...	Steel alloy	184	1-690-90-02
1-672-20-03	SEW20-90-34-50S	ASN 20...	Steel alloy	257	1-690-90-02

## SEW-30-50 / Nipper Blades with 90° Angle for ASN 30-50



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-672-30-00	SEW30/50-90-35-50S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	470
1-672-30-01	SEW30/50-90-41-65S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	536
1-672-30-51	SEW30/50-90-25-50H	ASN 30/ASN 50...	1-690-90-03	Carbide	468

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

## SEK / Nipper Blades, „Pinch“

**Remarks:**

„SEK7-14-9S“

- SE cutter blade
- K pinch
- 7 for sprue cutter ASN 07...
- 14 undercut
- 9 cutting surface (B)
- S steel alloy
- H Carbide

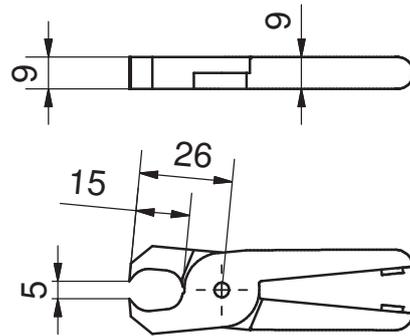
**Remarks for the compatible types of Nipper Bodies ASN:**

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

**Opening size of the Nipper Blades SESKO/50...:**

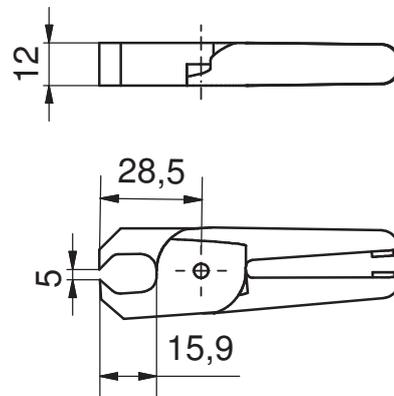
The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

### SEK-7 / Nipper Blades „Pinch“ for ASN 7



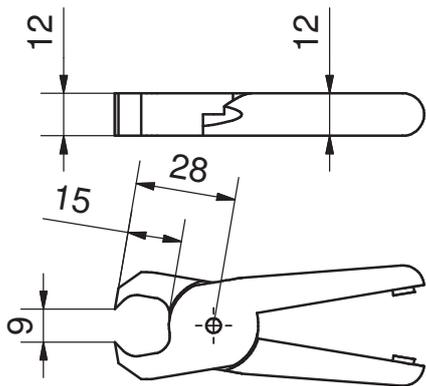
Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-07-00	SEK7-14-9S	ASN 7...	1-690-90-01	Steel alloy	75

### SEK-10 / Nipper Blades „Pinch“ for ASN 10



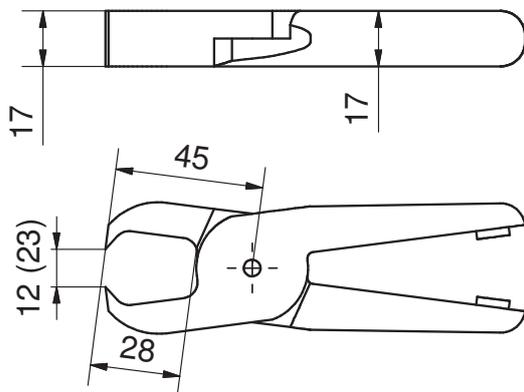
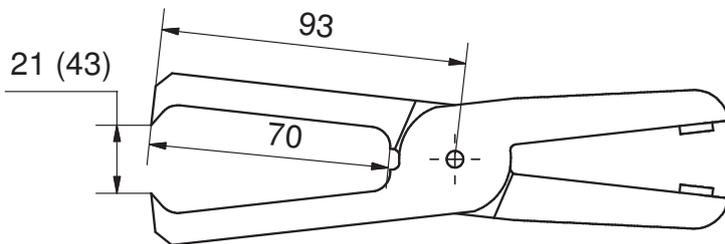
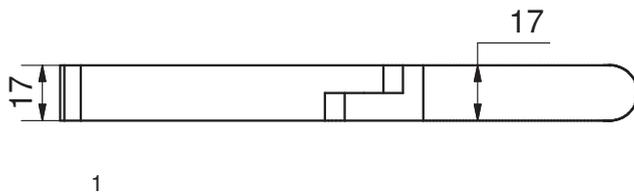
Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-10-00	SEK10-15-12S	ASN 10...	1-690-90-01	Steel alloy	115
1-674-10-02	SEK10-15-12S Magnet	ASN 10...	Magnet return	Steel alloy	115

## SEK-20 / Nipper Blades „Pinch“ for ASN 20



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-20-00	SEK20-15-12S	ASN 20...	1-690-90-02	Steel alloy	122
1-674-20-10	SEK20-15-12S Magnet	ASN 20...	Magnet return	Steel alloy	128

## SEK-30-50 / Nipper Blades „Pinch“ for ASN 30-50



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-674-30-00	SEK30/50-70-17S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	508
1-674-30-10	SEK30/50-70-17S Magnet	ASN 30/ASN 50...	Magnet return	Steel alloy	509
1-674-30-01	SEK30/50-28-17S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	333
1-674-30-11	SEK30/50-28-17S Magnet	ASN 30/ASN 50...	Magnet return	Steel alloy	335

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

## SEZ / Z-Form

**Remarks:**

„SEZ30/50-0-32S“

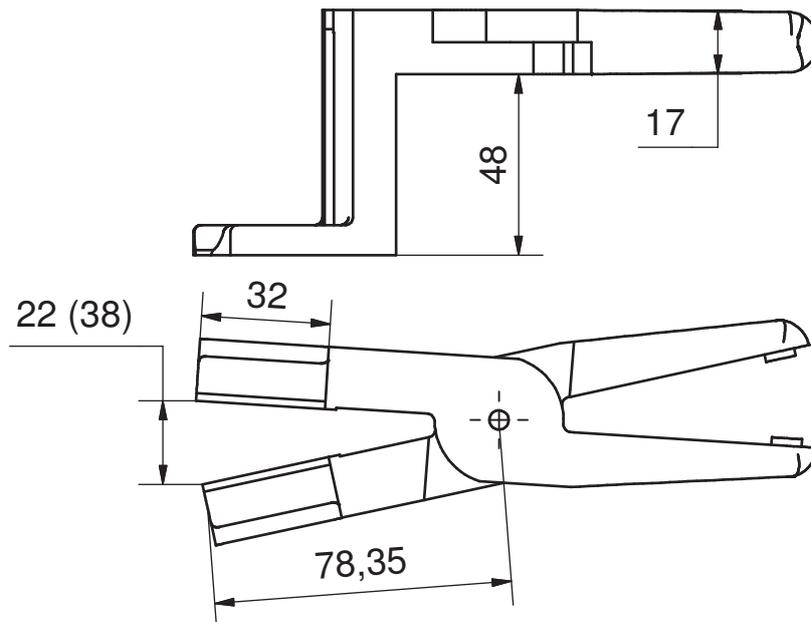
- SE cutter blade
- Z Z-form
- 30/50 for sprue cutter ASN 30/ASN 50...
- 0 angle
- 34 cutting surface
- S steel alloy
- H carbide

**Remarks for the compatible types of Nipper Bodies ASN:**

- HR hand operated round
- AR automatic round
- HRK hand operated round with power boost
- ARK automatic round with power boost
- AQ automatic square

**Opening size of the Nipper Blades SEZ30/50...:**

The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-675-30-00	SEZ30/50-0-32S	ASN 30/ASN 50...	1-690-90-03	Steel alloy	588

## SEG / Nipper Blades, Straight Form

### Remarks:

#### „SEG20-0-18S“

SE	cutter blade
G	straight form
20	for sprue cutter ASN 20...
0	angle
18	cutting surface (B)
S	steel alloy
H	carbide

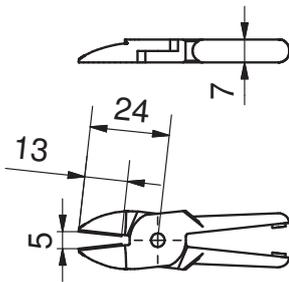
### Remarks for the compatible types of Nipper Bodies ASN:

HR	hand operated round
AR	automatic round
HRK	hand operated round with power boost
ARK	automatic round with power boost
AQ	automatic square

### Opening size of the Nipper Blades SEG30/50...:

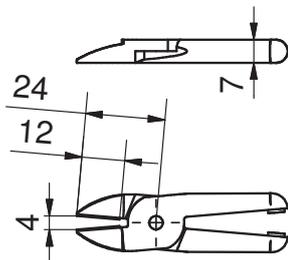
The first value is for use with an ASN 30 and the value in brackets for use with an ASN 50.

## SEG-3 / Nipper Blades, Straight Form for ASN 3



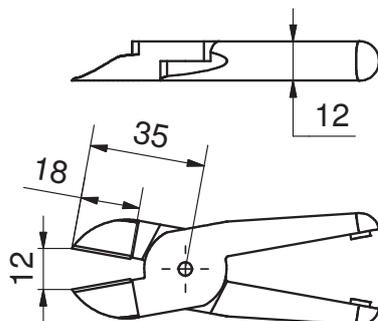
Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-03-00	SEG3-0-12S	ASN 3...	1-690-90-00	Steel alloy	28

## SEG-5 / Nipper Blades, Straight Form for ASN 5



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-05-00	SEG5-0-12S	ASN 5 AQ	1-690-90-00	Steel alloy	32

## SEG-20 / Nipper Blades, Straight Form for ASN 20



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-20-00	SEG20-0-18S	ASN 20...	1-690-90-02	Steel alloy	118
1-673-20-10	SEG20-0-18S Magnet	ASN 20...	Magnet return	Steel alloy	116

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

# 610 | Nipper Blades

**050**  
Profiles  
Channel Nuts

## SEG-30-50 / Nipper Blades, Straight Form for ASN 30-50

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

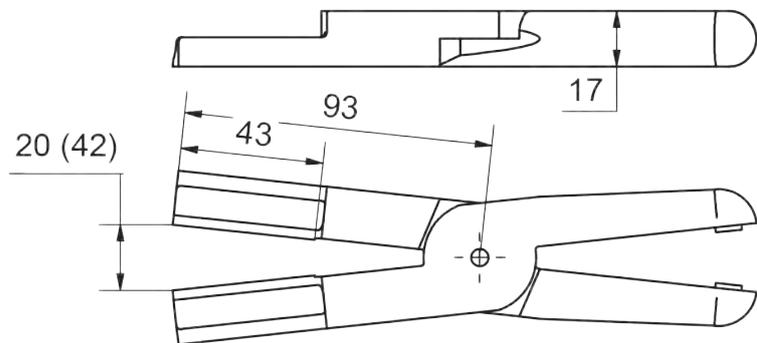
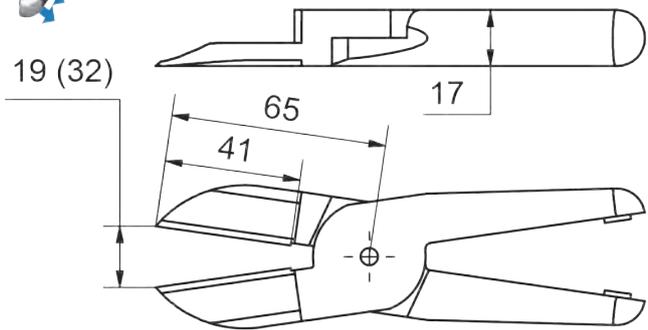
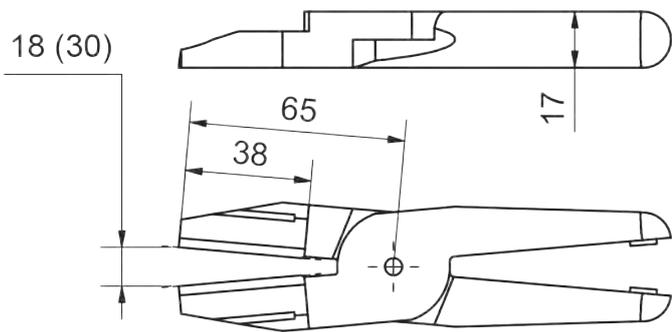
**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others



Part No.	Description	compatible with	Weight [g]	Part No. for exchange spring	Material
1-673-30-03	SEG30/50-0-37S	ASN 30/ASN 50...	395	1-690-90-03	Steel alloy
1-673-30-00	SEG30/50-0-41S	ASN 30/ASN 50...	338	1-690-90-03	Steel alloy
1-673-30-10	SEG30/50-0-41S Magnet	ASN 30/ASN 50...	338	Magnet return	Steel alloy
1-673-30-01	SEG30/50-0-43S	ASN 30/ASN 50...	497	1-690-90-03	Steel alloy

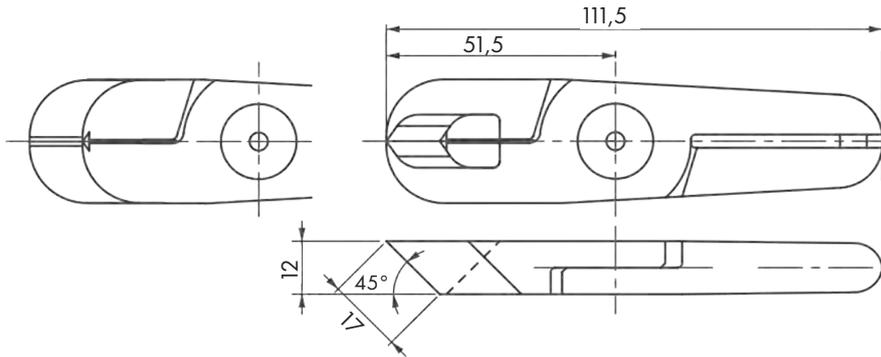
## SEK 20-45-17 / Nipper Blade, Special Design, „Pinch“ 45°

**Remarks:**

**Application: Special Nipper Blade e.g. for pinching tasks**

- suitable for Nipper Body ASN 20

**Delivery time and price on request!**



Part No.	Description	compatible with	Material	Weight [g]
1-674-20-04	SEK20-45-17	ASN 20	Steel alloy	200

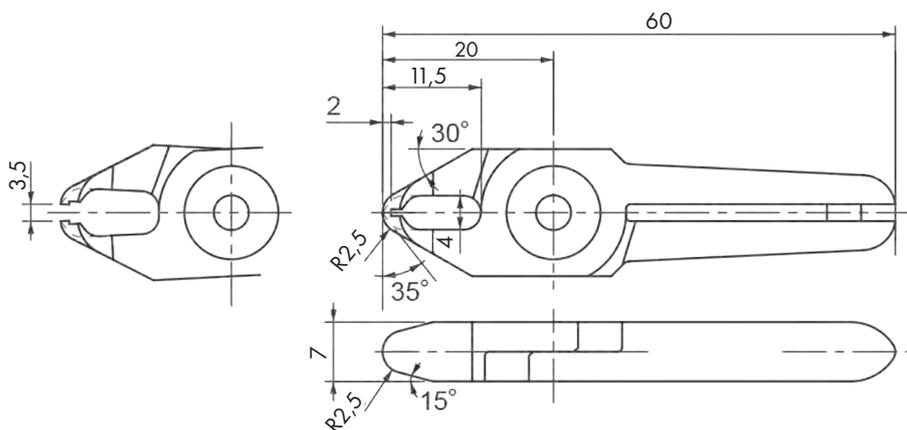
## SER 3-11,5-R2,5 / Nipper Blade, Special Design, Radius

**Remarks:**

**Application: Special Nipper Blade e.g. for marking products**

- suitable for Nipper Body ASN 3

**Delivery time and price on request!**



Part No.	Description	compatible with	Material	Weight [g]
1-676-03-00	SER3-11,5-R2,5	ASN 3	Steel alloy	34

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

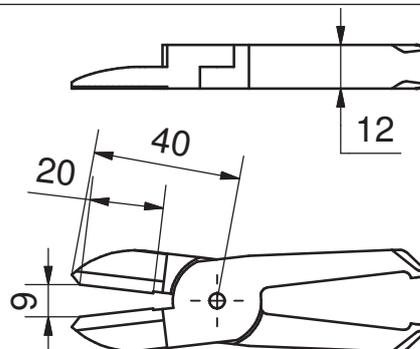
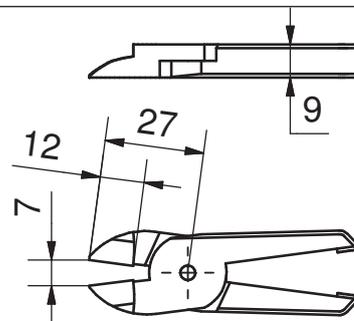
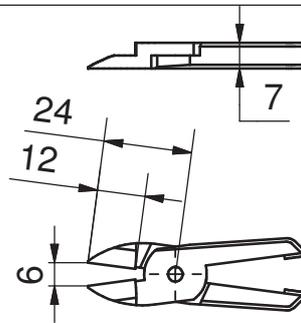
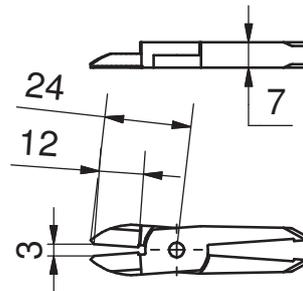
## SEG ASN SE / Nipper Blades Straight for ASN SE

**Remarks:**

**Nipper Blades only for usage with Nipper Bodies ASN SE!**

**"SEG-ASNSE3-0-11S"**

SE	cutter blade
G	straight form
ASN SE	for sprue cutter ASN SE
3	size
0	angle
11	cutting surface (B)
S	steel alloy
H	carbide



Part No.	Description	compatible with	Part No. for exchange spring	Material	Weight [g]
1-673-91-00	SEG-ASNSE3-0-11S	ASN SE 3	1-690-90-05	Steel alloy	21
1-673-91-01	SEG-ASNSE5-0-12S	ASN SE 5	1-690-90-00	Steel alloy	30
1-673-91-02	SEG-ASNSE10-0-12S	ASN SE 10	1-690-90-01	Steel alloy	62
1-673-91-03	SEG-ASNSE20-0-20S	ASN SE 20	1-690-90-06	Steel alloy	122

## SEG-ASN-ARD / Nipper Blades Straight Form for ASN ARD

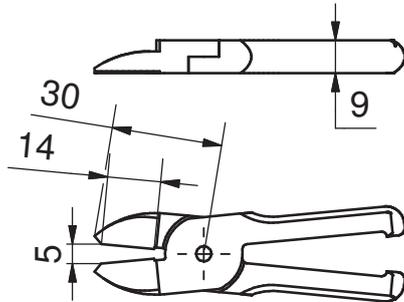
**Remarks:**

**Nipper Blades only for usage with Nipper Bodies ASN-ARD!**

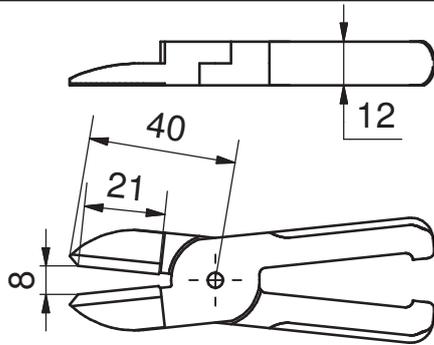
**Example „SEG-ASNARD10-0-14S“**

SE cutter blade

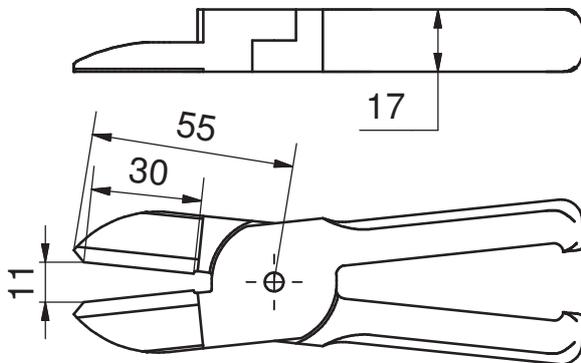
G	straight form
ASN ARD	for Sprue Cutter ASN ARD
10	size
0	angle
14	cutting surface (B)
S	steel alloy
H	carbide



1-673-92-01



1-673-92-02



1-673-92-03

Part No.	Description	compatible with	Material	Weight [g]
1-673-92-01	SEG-ASNARD10-0-14S	ASN 10 ARD	Steel alloy	76
1-673-92-02	SEG-ASNARD20-0-21S	ASN 20 ARD	Steel alloy	140
1-673-92-03	SEG-ASNARD30-0-29S	ASN 30 ARD	Steel alloy	369

## SEF / Spare Springs for Cutter Blades

Part No.	Description	Wire thickness [mm]	Length (non compressed) [mm]
1-690-90-00	SEF 0-45x3-7x13	0.45	13
1-690-90-01	SEF 0-7x5-1x18	0.7	18
1-690-90-02	SEF 0-7x5-6x22-05	0.7	22.5
1-690-90-03	SEF 1x8x28	1	28
1-690-90-04	SEF 1x8-6x31	1	31
1-690-90-05	SEF0-5x3-8x14	0.5	14
1-690-90-06	SEF 0-8x5-5x23	0.8	23
1-690-90-08	SEF 1-2x9x37	1.2	37

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

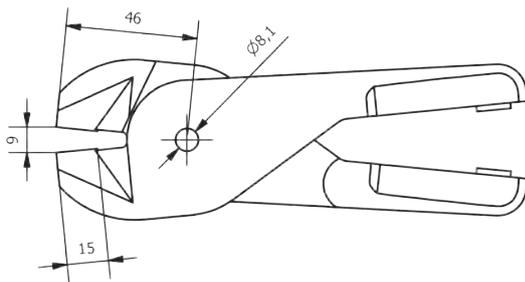
## SEG-ASN-ARD / Nipper Blades for ASN 50 AR VS

**Remarks: Nipper Blades only for Nipper Type ASN 50 AR VS! Part No. for exchange spring for blade type AR VS: 1-690-90-08**

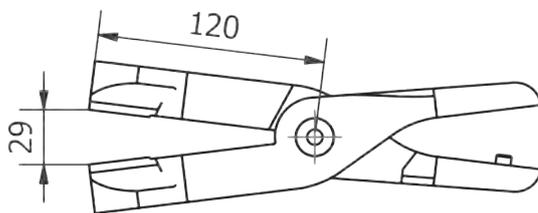
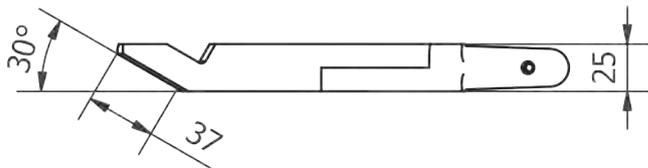
- SES 50-35-15H  
Special nipper blade for metal wire
- Cutting ability:

Copper wire max.  $\varnothing$  5,5mm  
Steel wire (not hardened) max.  $\varnothing$  4,5mm

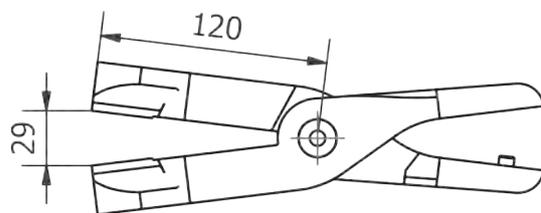
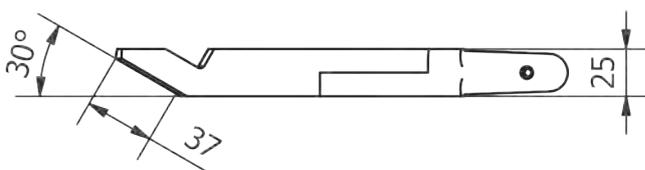
- SES 50-30-37H and SES 50-30-37S  
Nipper blade for Plastics or metal
- Cutting Ability:  
Copper wire max.  $\varnothing$  5,5mm  
Steel wire (not hardened) max.  $\varnothing$  4,5mm



1-660-57-00



1-660-58-00



1-660-59-00

Part No.	Description	compatible with	Material	Weight [g]
1-660-57-00	SES 50-35-15H	ASN 50 AR VS	Carbide	941
1-660-58-00	SES 50-30-37H	ASN 50 AR VS	Carbide	1548
1-660-59-00	SES 50-30-37S	ASN 50 AR VS	Steel alloy	1508

## SE... ARKS / Nipper Blades for ASN ARKS

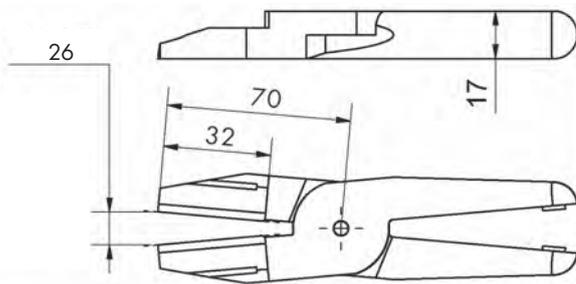
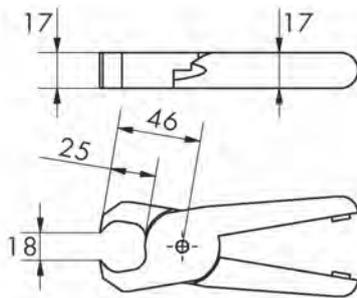
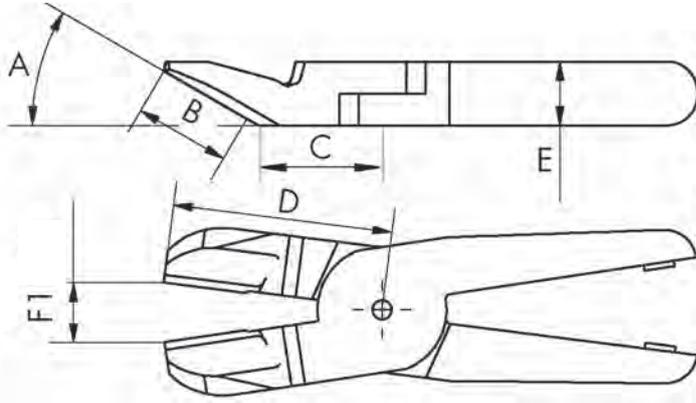
**Remarks:**

**Nipper Blades only for usage with Nipper Bodies ASN ARKS**

**Part No. for exchange spring for blade type ARKS:  
1-690-90-07**

**Example „SES-ARKS30-30-50S“**

SE cutter blade  
S/G/K standard / straight / pinch  
ARKS for sprue cutter ASN ARKS  
30 angle  
30 length of cutter blade  
S steel alloy



Part No.	Description	A [°]	B [mm]	C [mm]	D [mm]	E [mm]	Fl [mm]	compatible with	Material	Weight [g]
1-661-01-00	SES-ARKS-30-30-50S	30	30	50	74	17	30	ASN ARKS	Steel alloy	458
1-661-02-00	SES-ARKS-30-30-30S	30	30	34	58	17	22	ASN ARKS	Steel alloy	382
1-661-03-00	SEK-ARKS-25-17S			see drawing				ASN ARKS	Steel alloy	375
1-661-04-00	SEG-ARKS-0-32S			see drawing				ASN ARKS	Steel alloy	429

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
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Manifold

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Adapters for  
Vacuum Cups

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Gripper Arms

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 610 | Nipper Blades

## SK / Nipper Blade Protectors

Application example



**Remarks:**

**Application: protects against injury during set up and maintenance**

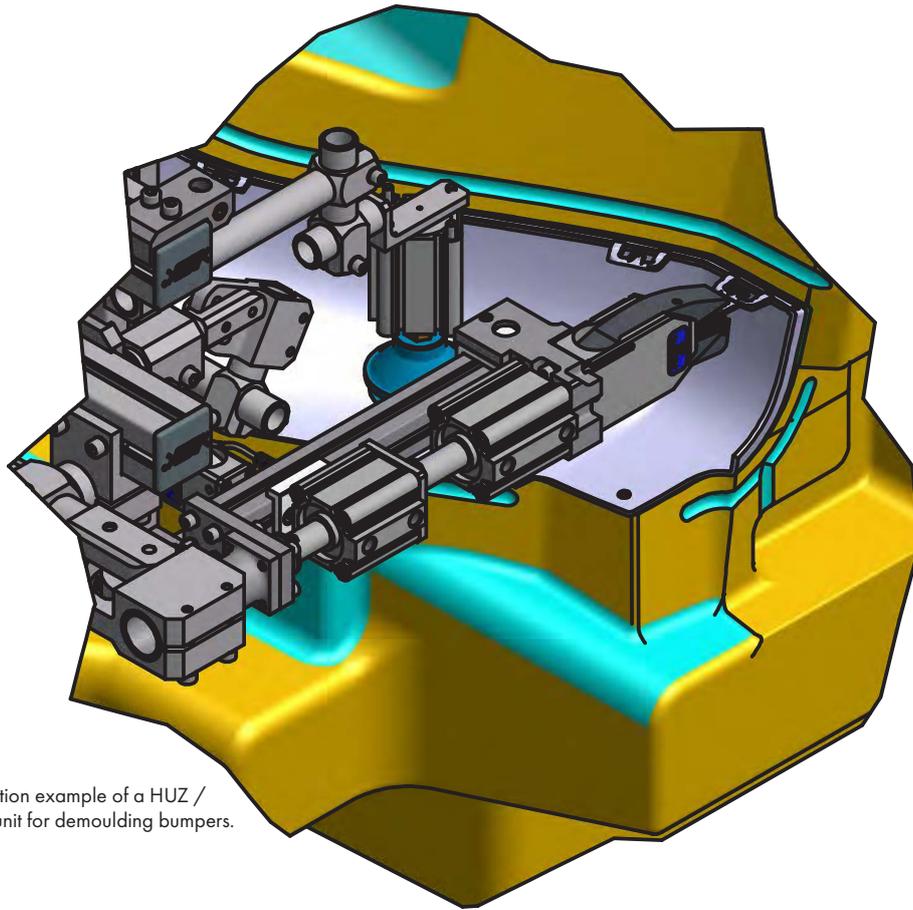
- fits easily on nipper blade
- material: Polyamide
- colour: Red
- » special or custom protectors on demand
- » production time: approx. 4 weeks
- » see application example, variants may differ from shown example

Nipper Blades		Suitable Blade Protectors SK
Part-No.	Description	Part-No.
1-671-03-00	SES3-15-11S	9-07-901-328-0
1-671-03-51	SES3-15-11H	9-07-901-328-0
1-671-10-01	SES10-15-16S	9-07-901-315-0
1-671-10-02	SES10-15-16S Magnet	9-07-901-315-0
1-671-10-03	SES10-15-35S	9-07-901-313-0
1-671-10-04	SES10-15-35S Magnet	9-07-901-313-0
1-671-10-05	SES10-40-13S	9-07-901-318-0
1-671-10-06	SES10-40-13S Magnet	9-07-901-318-0
1-671-10-51	SES10-40-13H	9-07-901-318-0
1-671-20-00	SES20-40-13S	9-07-901-219-0
1-671-20-10	SES20-40-13S Magnet	9-07-901-219-0
1-671-20-01	SES20-23-25S	9-07-901-315-0
1-671-20-03	SES20-15-35S	9-07-901-313-0
1-671-20-04	SES20-40-32S	9-07-901-326-0
1-672-20-01	SEW20-90-18-62S	9-07-901-319-0
1-672-20-03	SEW20-90-34-50S	9-07-901-326-0
1-672-30-00	SEW30/50-90-35-50S	9-07-901-321-0
1-672-30-01	SEW30/50-90-41-65S	9-07-901-322-0
1-672-30-51	SEW30/50-90-25-50H	9-07-901-317-0
1-674-07-00	SEK7-14-9S	9-07-901-330-0
1-674-10-00	SEK10-15-12S	9-07-901-315-0
1-674-10-02	SEK10-15-12S Magnet	9-07-901-315-0
1-674-20-00	SEK20-15-12S	9-07-901-315-0
1-674-20-10	SEK20-15-12S Magnet	9-07-901-315-0
1-674-30-00	SEK30/50-70-17S	9-07-901-329-0
1-674-30-10	SEK30/50-70-17S Magnet	9-07-901-329-0
1-674-30-01	SEK30/50-28-17S	9-07-901-329-0
1-674-30-11	SEK30/50-28-17S Magnet	9-07-901-329-0
1-673-20-00	SEG20-0-18S	9-07-901-219-0
1-673-20-10	SEG20-0-18S Magnet	9-07-901-219-0
1-673-30-00	SEG30/50-0-41S	9-07-901-323-0
1-673-30-10	SEG30/50-0-41S Magnet	9-07-901-323-0
1-671-30-01	SES30/50-30-25S	9-07-901-316-0
1-671-30-11	SES30/50-30-25S Magnet	9-07-901-316-0
1-671-30-03	SES30/50-15-38S	9-07-901-316-0
1-671-30-13	SES30/50-15-38S Magnet	9-07-901-316-0
1-671-30-51	SES30/50-30-23H	9-07-901-316-0
1-674-20-10	SEK20-15-12S Magnet	9-07-901-315-0
1-671-20-10	SES20-40-13S Magnet	9-07-901-219-0
1-671-20-51	SES20-40-13H	9-07-901-219-0

**Blade Protectors SK on demand for following Nipper Blades:**

Part-No.	Description
1-671-05-00	SES5-15-11S
1-671-05-51	SES5-15-11H
1-671-07-00	SES7-40-10S
1-671-07-01	SES7-30-11S
1-671-07-51	SES7-30-11H
1-671-20-02	SES20-15-16S
1-671-20-12	SES20-15-16S Magnet
1-671-20-51	SES20-40-13H
1-671-30-02	SES30/50-30-50S
1-671-30-04	SES30/50-60-32S
1-671-30-05	SES30/50-30-44S
1-672-20-00	SEW20-90-18-45S
1-672-20-02	SEW20-90-16-40S
1-675-30-00	SEZ30/50-0-32S
1-673-03-00	SEG3-0-12S
1-673-05-00	SEG5-0-12S
1-673-30-03	SEG30/50-0-37S
1-673-30-01	SEG30/50-0-43S
1-676-03-00	SER3-11,5-R2,5
1-674-20-04	SEK20-45-17
1-673-91-00	SEG-ASNSE3-0-11S
1-673-91-01	SEG-ASNSE5-0-12S
1-673-91-02	SEG-ASNSE10-0-12S
1-673-91-03	SEG-ASNSE20-0-20S
1-673-92-01	SEG-ASN-ARD10-0-14S
1-673-92-02	SEG-ASN-ARD20-0-21S
1-673-92-03	SEG-ASN-ARD30-0-29S
1-661-01-00	SES-ARKS-30-30-50S
1-661-02-00	SES-ARKS-30-30-30S
1-661-03-00	SEK-ARKS-25-17S
1-661-04-00	SEG-ARKS-0-32S
1-660-57-00	SES 50-35-15H
1-660-58-00	SES 50-30-37H
1-660-59-00	SES 50-30-37S

**Application examples HUZ / HUZ-P / ZSM-HUZ PZ**



Application example of a HUZ / HUZ P unit for demoulding bumpers.



Different versions and sizes of HUZ units (from the left): HUZ 25 D with double stroke, HUZ-P 25 CS with single stroke and monitoring, Stopover ZSM-HUS PZ mounted on HUZ-P 25 CS

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

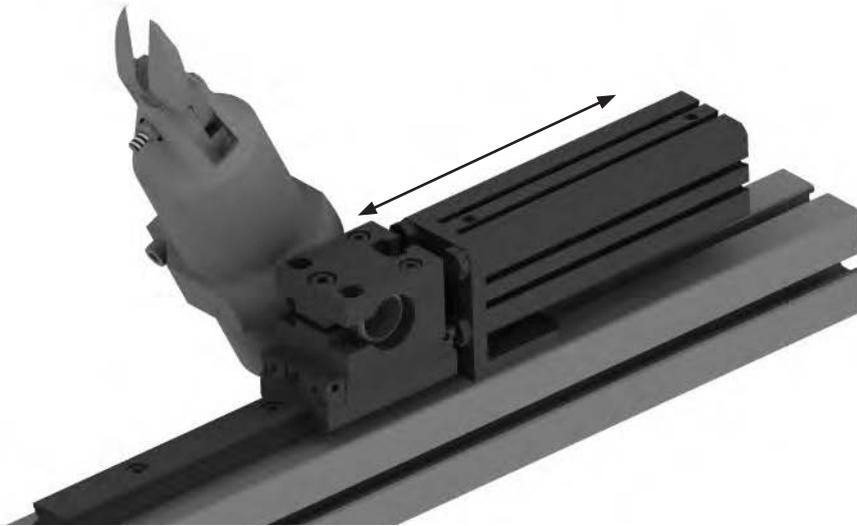
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

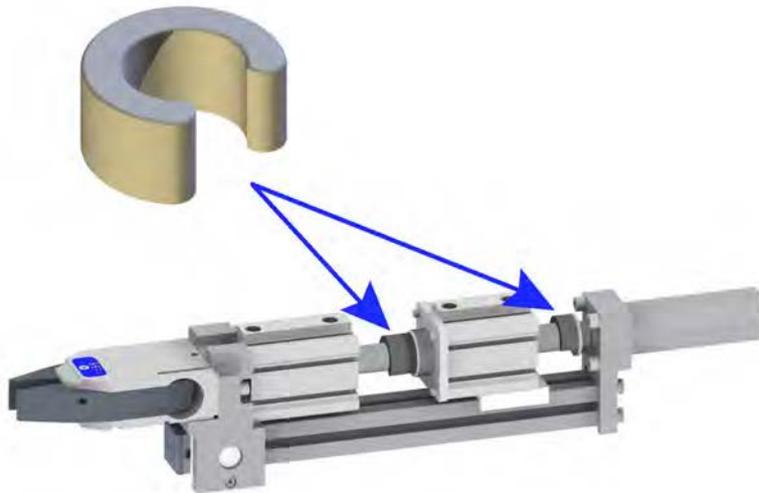
**990**  
PA-Forming  
Others

# 700 | Special Elements

## Application example HUE

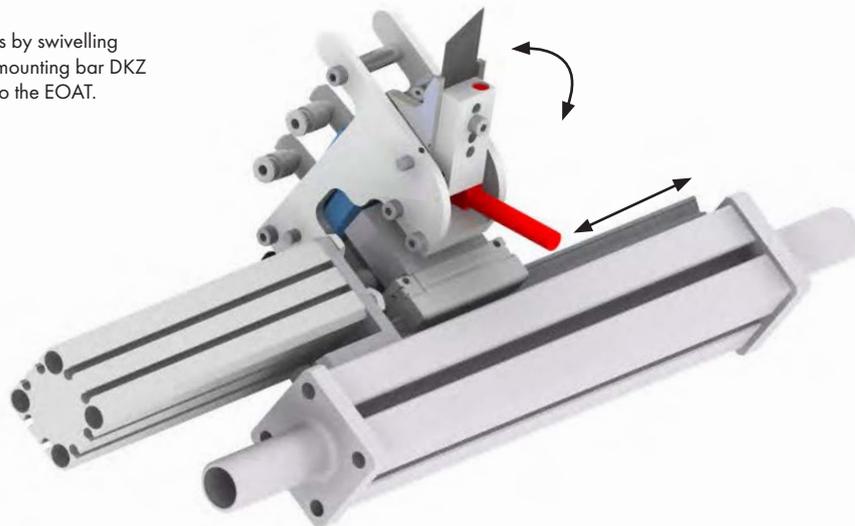


## Application example DB

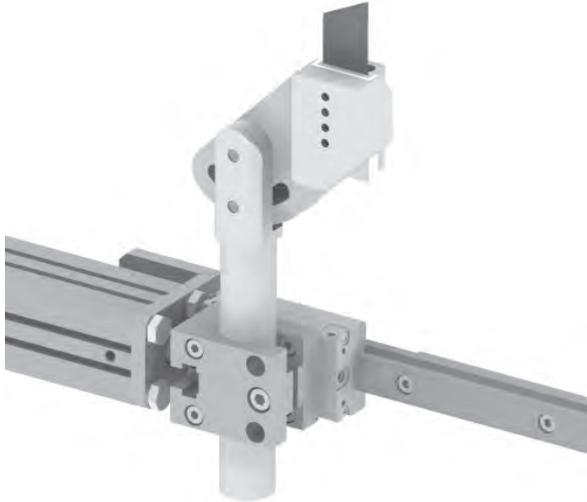


## Application example KHR-S and DKZ JU

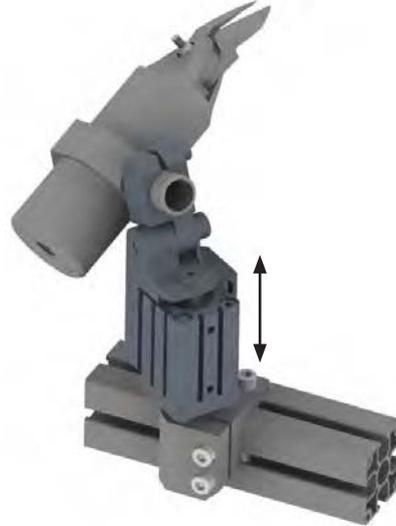
Precise cutting of film gates by swivelling the blade to the part. The mounting bar DKZ allows an easy mounting to the EOAT.



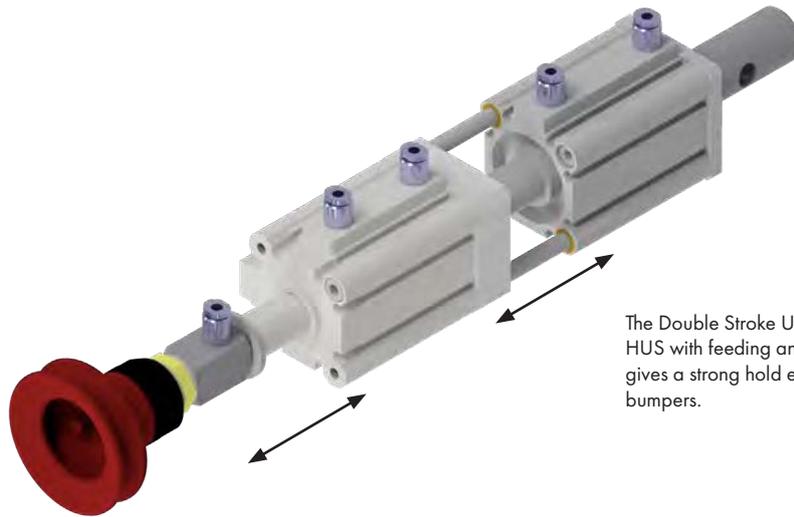
**Application example KHR**



**Application example ZHG/ZHD**



**Application example HUS**



The Double Stroke Unit for Vacuum Cups HUS with feeding and demoulding stroke gives a strong hold e.g. for demoulding bumpers.

**Application example DPL**



**Application example ZTB**



**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

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Clamps

**120**  
Profile  
Connectors

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Profile  
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Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

**Application example SZD**



**Application example KHZ + DPL**



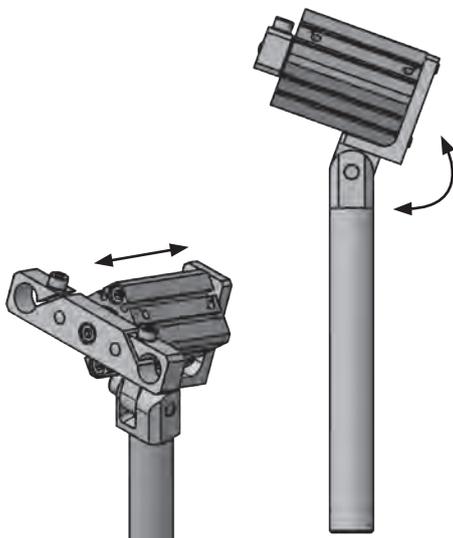
**Application example ADZ**



**Application example GAZ**



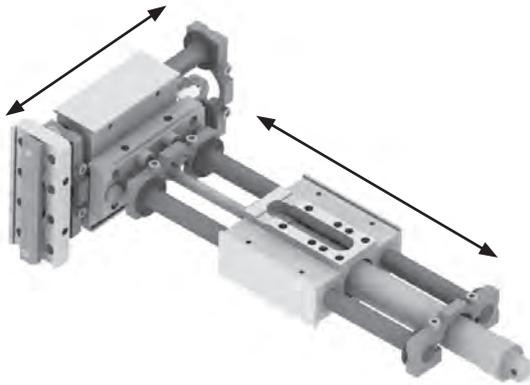
**Application example GAZ S**



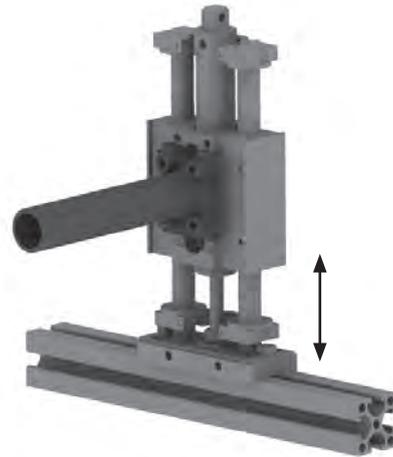
**Application example GP-HEU**



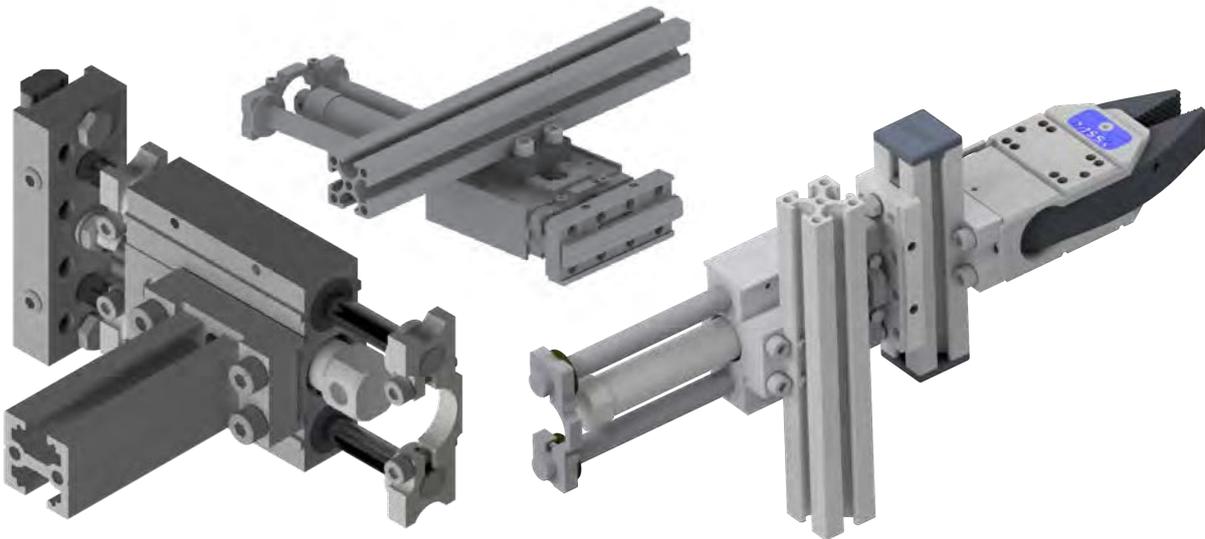
**Application example HEU**



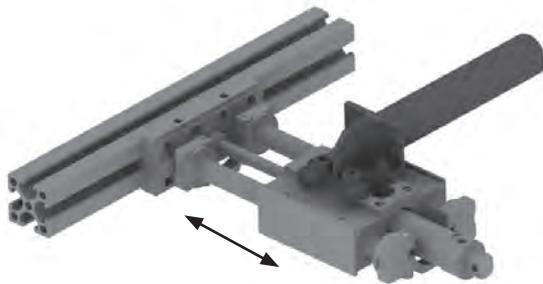
**Application example AE-HEU**



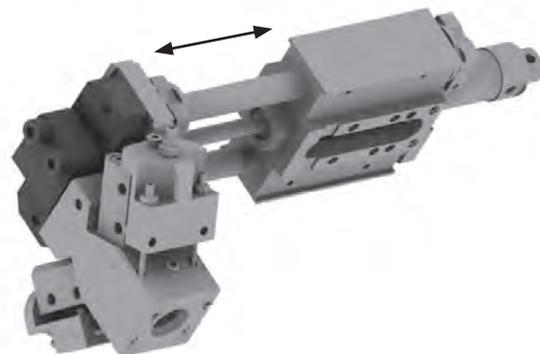
**Application examples AP-HEU**



**Application example AU-HEU**



**Application example KN-HEU**



**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

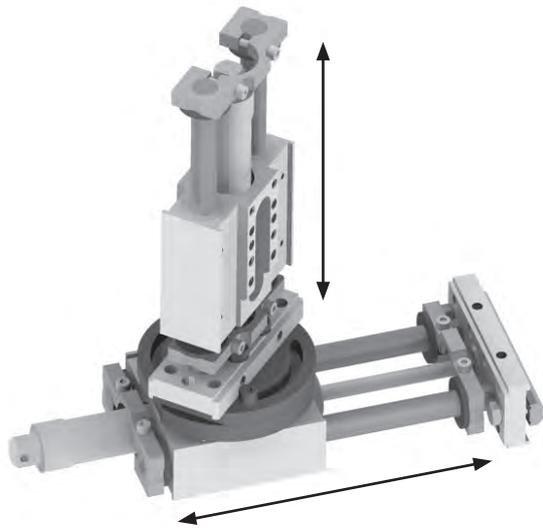
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

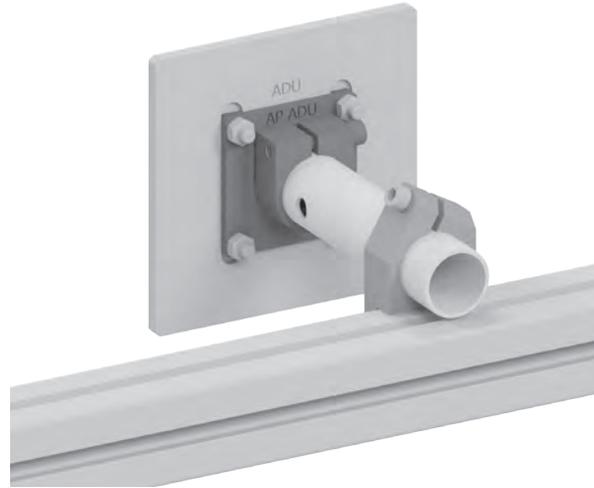
**990**  
PA-Forming  
Others

# 700 | Special Elements

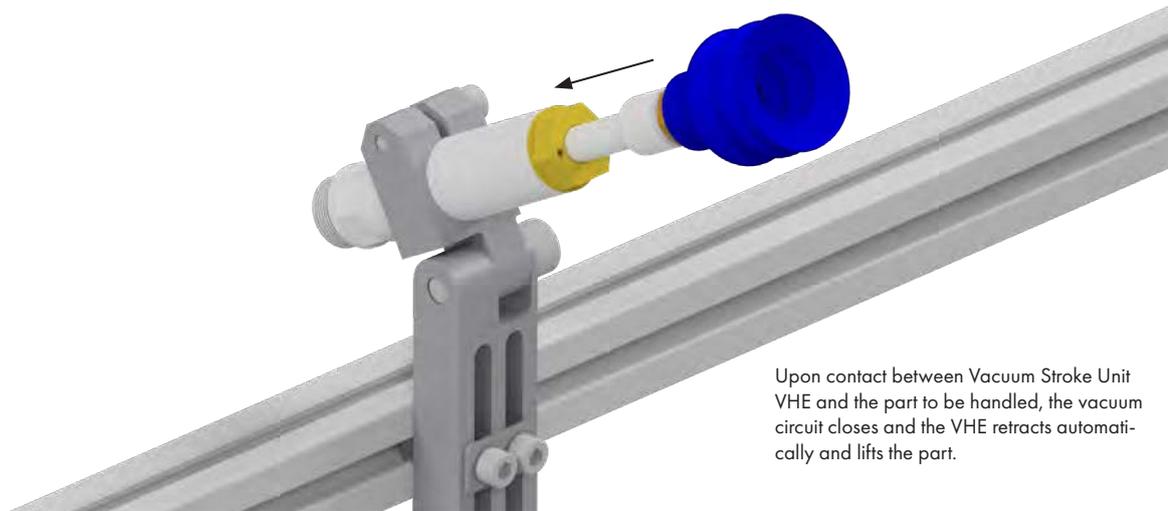
## Application example HEU A XY



## App. example ADU / AP ADU



## Application example VHE 20



Upon contact between Vacuum Stroke Unit VHE and the part to be handled, the vacuum circuit closes and the VHE retracts automatically and lifts the part.

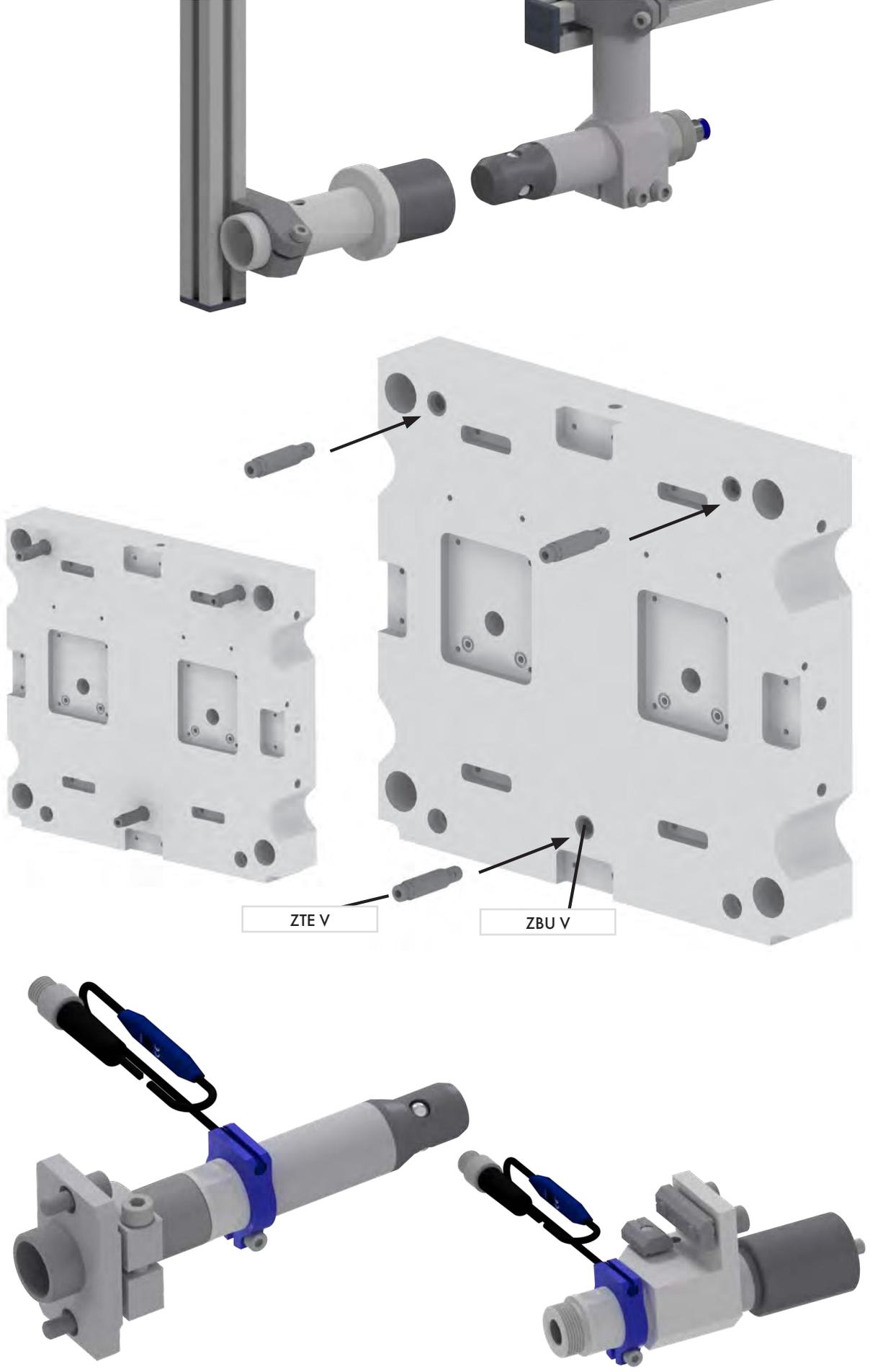
## Application example SF



## Application example SFP



**Application example ZTE**



<b>000</b>	Quick Change Systems
<b>050</b>	Profiles Channel Nuts
<b>100/115</b>	Clamps
<b>120</b>	Profile Connectors
<b>190</b>	Profile Accessories
<b>200</b>	Vacuum Cup Connectors
<b>220</b>	Vacuum Cups
<b>224</b>	Special Vacuum Cups
<b>230</b>	Manifold
<b>290</b>	Adapters for Vacuum Cups
<b>300</b>	Gripper Arms
<b>400</b>	Gripper Parallel Gripper
<b>450</b>	Gripper Fingers
<b>460</b>	Needle Gripper
<b>600</b>	Nipper Bodies
<b>610</b>	Nipper Blades
<b>700</b>	Special Elements
<b>800</b>	Electrics and Sensors
<b>850</b>	Pneumatics
<b>990</b>	Tubular System Micro System
<b>990</b>	PA-Forming Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

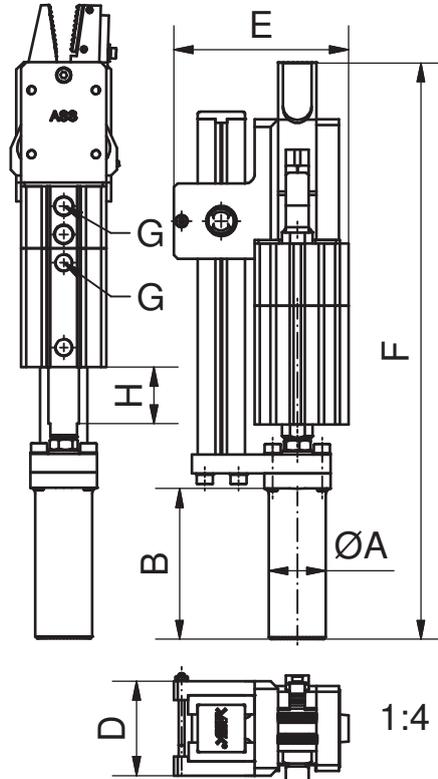
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUZ / Gripper with Stroke



**Remarks:**

**Application: strong double-acting gripper on stroke for demolding tasks**

- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- C part present sensor IEK 8
- CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Part No.	Description	closing force max. [N]	All pistons Ø [mm]	Part present	Part present with plug	Stroke H [mm]
1-740-12-00	HUZ 32-30	350	32			30
1-740-15-00	HUZ 32-30 C	350	32	x		30
1-740-18-00	HUZ 32-30 CS	350	32		x	30
1-740-21-00	HUZ 32-40	350	32			40
1-740-24-00	HUZ 32-40 C	350	32	x		40
1-740-27-00	HUZ 32-40 CS	350	32		x	40

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G ["]	Weight [g]
1-740-12-00	HUZ 32-30	30	80	50	92	304	G1/8	1334
1-740-15-00	HUZ 32-30 C	30	80	50	92	307	G1/8	1397
1-740-18-00	HUZ 32-30 CS	30	80	50	92	307	G1/8	1364
1-740-21-00	HUZ 32-40	30	80	50	92	314	G1/8	1389
1-740-24-00	HUZ 32-40 C	30	80	50	92	317	G1/8	1505
1-740-27-00	HUZ 32-40 CS	30	80	50	92	317	G1/8	1473

## HUZ D / Gripper with Double Stroke

**Remarks:**

**Application: strong double-acting gripper on double-stroke (feeding and demoulding stroke), e.g. for demoulding bumpers**

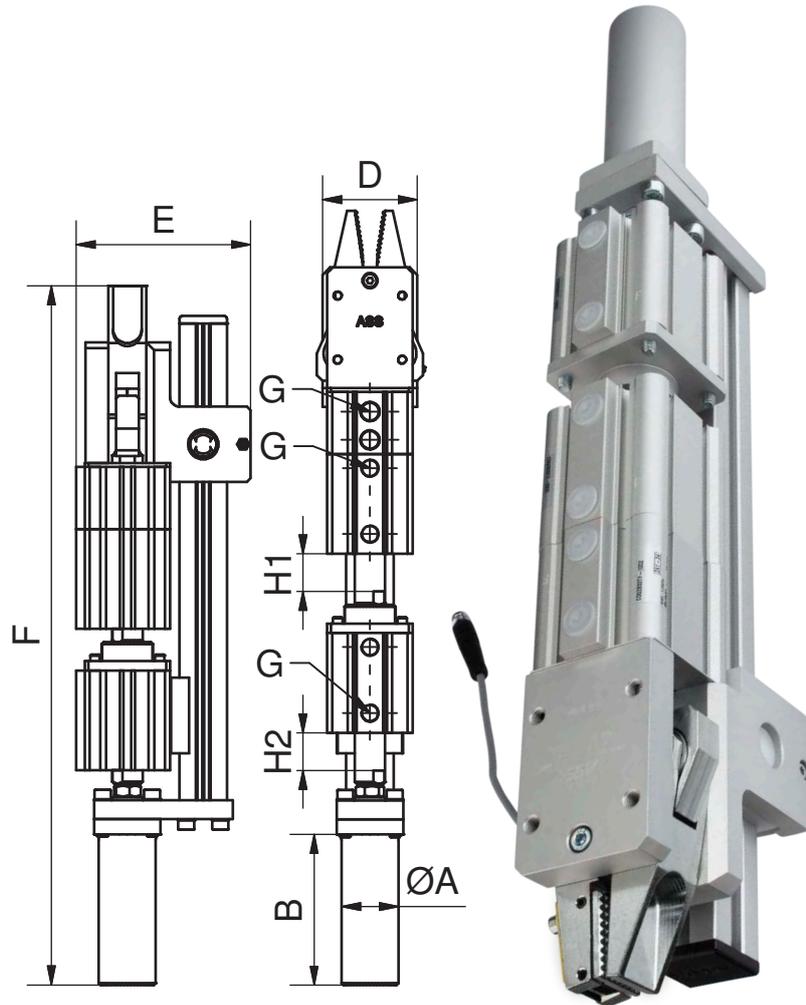
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- C part present sensor IEK 8
- CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	closing force max. [N]	All pistons Ø [mm]	Part present	Part present with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-740-54-00	HUZ 32-20-10 C	350	32	x		20	10
1-740-57-00	HUZ 32-20-10 CS	350	32		x	20	10
1-740-64-00	HUZ 32-20-20 C	350	32	x		20	20
1-740-67-00	HUZ 32-20-20 CS	350	32		x	20	20
1-740-74-00	HUZ 32-20-30 C	350	32	x		20	30
1-740-77-00	HUZ 32-20-30 CS	350	32		x	20	30

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G ["]	Weight [g]
1-740-54-00	HUZ 32-20-10 C	30	80	50	92	361	G1/8	1770
1-740-57-00	HUZ 32-20-10 CS	30	80	50	92	361	G1/8	1648
1-740-64-00	HUZ 32-20-20 C	30	80	50	92	371	G1/8	1731
1-740-67-00	HUZ 32-20-20 CS	30	80	50	92	371	G1/8	1756
1-740-74-00	HUZ 32-20-30 C	30	80	50	92	381	G1/8	1788
1-740-77-00	HUZ 32-20-30 CS	30	80	50	92	381	G1/8	1762

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

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Profile  
Accessories

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Vacuum Cup  
Connectors

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Special  
Vacuum Cups

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Manifold

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Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

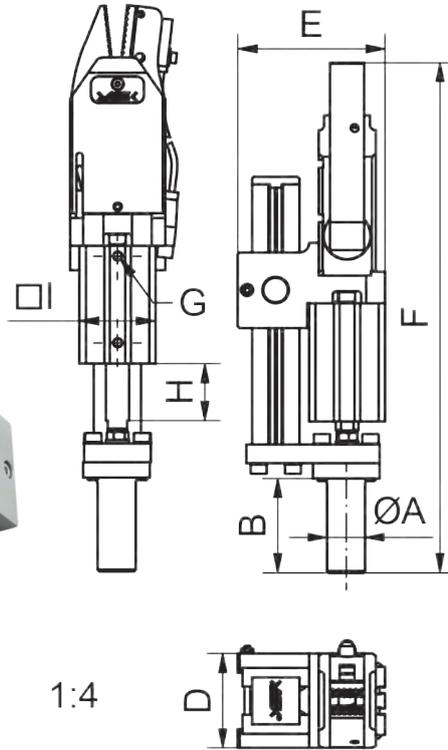
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUZ 25 / GRZ 25 with Stroke



1:4

**Remarks:**

**Application: strong gripper GRZ 25 on stroke for demoulding tasks**

- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- CS part present sensor IES 8
- Option clamping Ø 20mm

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25

Part No.	Description	closing force max. [N]	Piston Ø [mm]	Part present sensor with plug	Stroke H [mm]
1-741-30-00	HUZ 25-30 with option	350	25		30
1-741-31-00-1	HUZ 25-30 CS with option	350	25	x	30
1-742-30-00	HUZ 25 32-30 with option	350	32		30
1-742-31-00-1	HUZ 25 32-30 CS with option	350	32	x	30

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°] [mm]	I [mm]	Weight [g]
1-741-30-00	HUZ 25-30 with option	20	50	50	77,5	270	M5	40	960
1-741-31-00-1	HUZ 25-30 CS with option	20	50	50	77,5	270	M5	40	992
1-742-30-00	HUZ 25 32-30 with option	20	50	50	82,5	282	G1/8	45	1074
1-742-31-00-1	HUZ 25 32-30 CS with option	20	50	50	82,5	282	G1/8	45	1086

## HUZ 25 D / GRZ 25 with Double Stroke

**Remarks:**

**Application: strong gripper GRZ 25 on double-stroke (feeding and demoulding stroke), e.g. for demoulding bumpers**

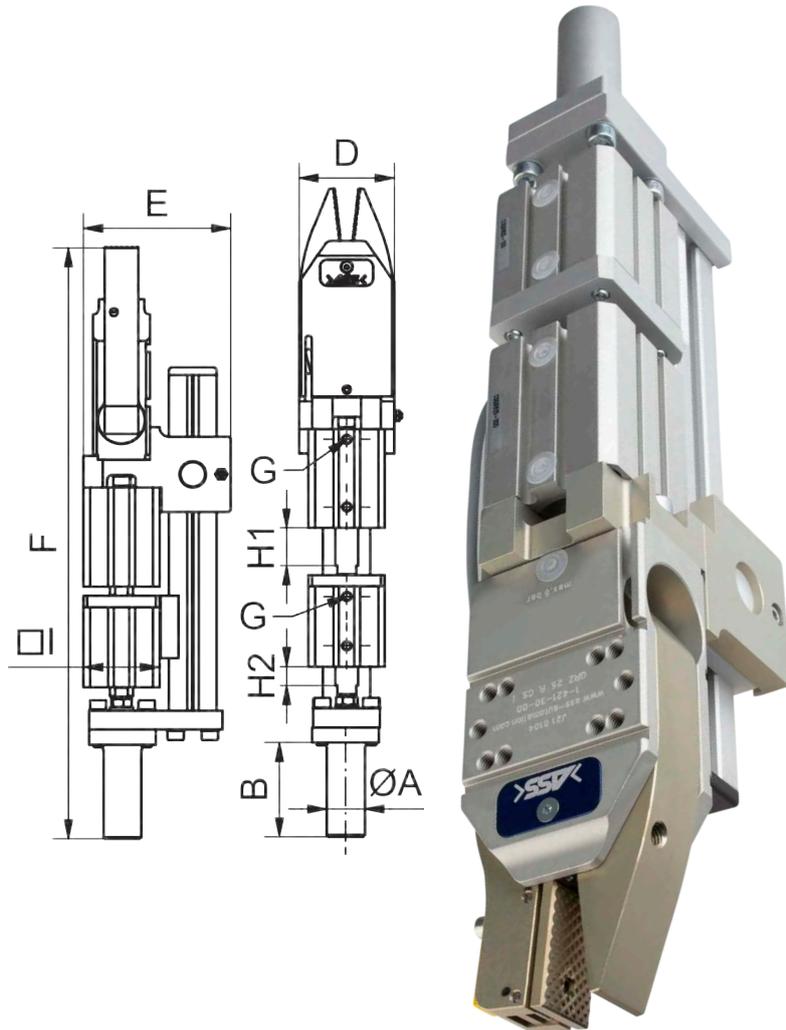
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- CS part present sensor IES 8
- Option clamping Ø 20mm

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25



Part No.	Description	closing force max. [N]	Piston Ø H1 [mm]	Piston Ø H2	Part present with plug	Stroke H1 [mm]	Stroke H2 [mm]
----------	-------------	------------------------	------------------	-------------	------------------------	----------------	----------------

1-741-32-00	HUZ 25-20-10 with option	350	25	25		20	10
1-741-33-00-1	HUZ 25-20-10 CS with option	350	25	25	x	20	10
1-742-32-00	HUZ 25 32-30-10 with option	350	32	32		30	10
1-742-33-00-1	HUZ 25 32-30-10 CS with option	350	32	32	x	30	10
1-742-34-00	HUZ 25 32-30-20	350	32	32		30	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°] [mm]	I [mm]	Weight [g]
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1-741-32-00	HUZ 25-20-10 with option	20	50	50	77,5	313	M5	40	1213
1-741-33-00-1	HUZ 25-20-10 CS with option	20	50	50	77,5	313	M5	40	1186
1-742-32-00	HUZ 25 32-30-10 with option	20	50	50	82,5	345	G1/8	45	1428
1-742-33-00-1	HUZ 25 32-30-10 CS with option	20	50	50	82,5	345	G1/8	45	1433
1-742-34-00	HUZ 25 32-30-20	30	80	50	82,5	387	G1/8	45	1505

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

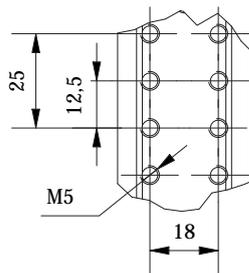
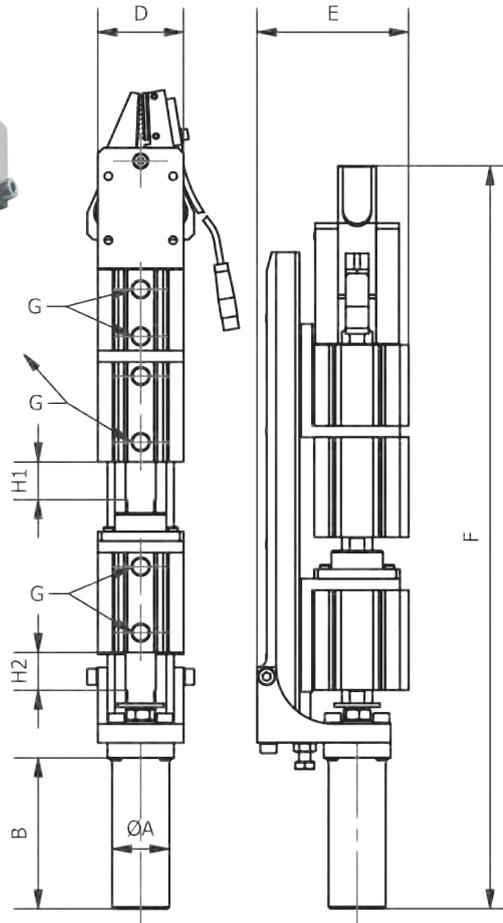
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUZ-P D / Gripper with Double Stroke, Precision Slide



**Remarks:**

**Application: strong double-acting gripper on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers**

- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

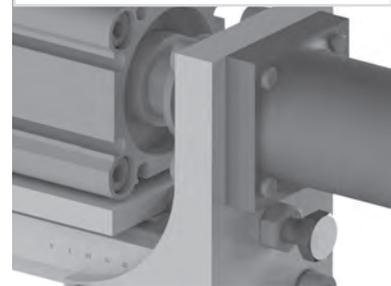
**Variants:**

CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Demoulding stroke can be adjusted stepless. Scale reduces setup time and optimizes reproducibility.



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Part present control with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-739-67-00	HUZ-P 32-20-20 CS	350	32	x	20	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°]	Weight [g]
1-739-67-00	HUZ-P 32-20-20 CS	30	80	45	80	390	G1/8	1933

## HUZ-P 25 D / Gripper with Double Stroke, Precision Slide

### Remarks:

**Application: strong gripper GRZ 25 on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers**

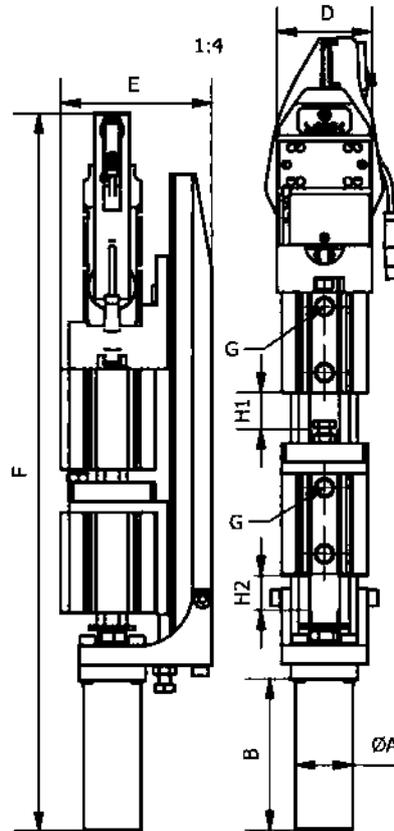
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

### Variants:

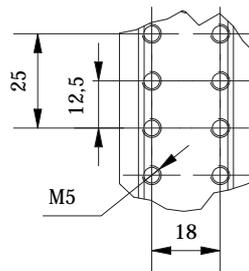
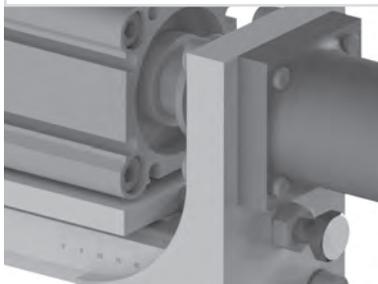
CS part present sensor IES 8

### Accessories e.g.:

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Gripper Jaws for GRZ 25



Demoulding stroke can be adjusted stepless. Scale reduces setup time and optimizes reproducibility.



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Part present control with plug	Stroke H1 [mm]	Stroke H2 [mm]
1-739-01-00	HUZ-P 25 32-20-20 CS	350	32	x	20	20

Part No.	Description	A [mm]	B [mm]	D [mm]	E [mm]	F Default position [mm]	G [°]	Weight [g]
1-739-01-00	HUZ-P 25 32-20-20 CS	30	80	50	80	380	G1/8	1730

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Gripper  
Parallel Gripper

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Gripper Fingers

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Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

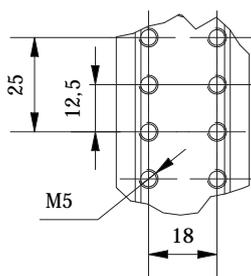
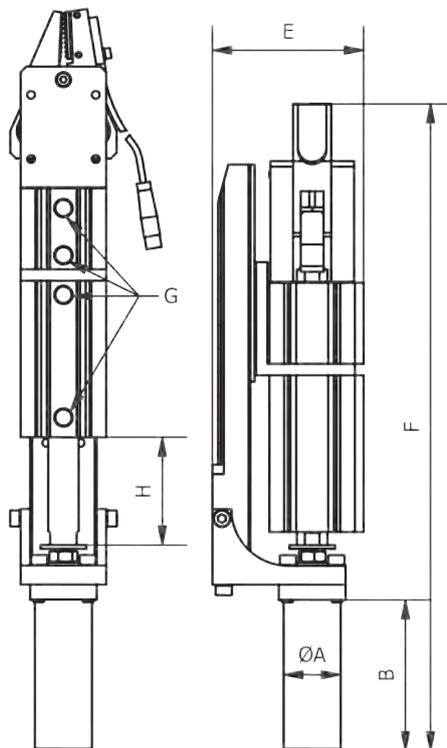
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUZ P / Gripper with Stroke, Precision Slide



**Remarks:**

**Application: strong double-acting gripper on stroke with precision slide for demoulding tasks**

- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
- » closing force measured at the point of the jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- C part present sensor IEK 8
- CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB
- Stopover ZSM

Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-739-22-00	HUZ-P 32-50	350	32	50	30	80	56	80
1-739-23-00	HUZ-P 32-50 C	350	32	50	30	80	56	80
1-739-24-00	HUZ-P 32-50 CS	350	32	50	30	80	56	80

Part No.	Description	F Default position [mm]	G [°][mm]	Part present control	Part present control with plug	Weight [g]
1-739-22-00	HUZ-P 32-50	345	G1/8			1676
1-739-23-00	HUZ-P 32-50 C	345	G1/8	x		1744
1-739-24-00	HUZ-P 32-50 CS	345	G1/8		x	1707

## HUZ P 25 / Gripper with Stroke, Precision Slide

**Remarks:**

**Application: strong gripper GRZ 25 on stroke with precision slide for demoulding tasks**

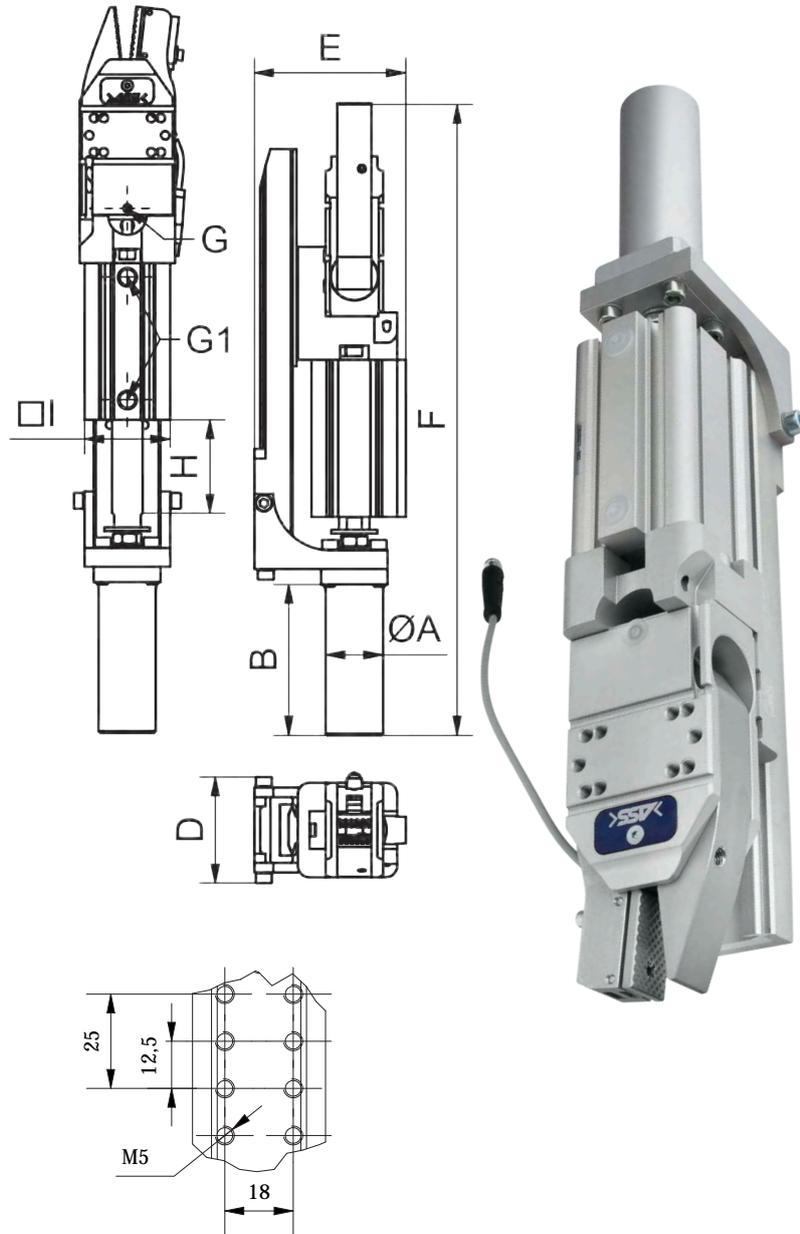
- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- compact and lightweight design
- end positions of cylinders can be monitored
- single-acting gripper
- end position of gripper jaws can be monitored
  - » closing force measured at the point of the jaws at 6 bar
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Sensor MFS T2 for monitoring GRZ 25 (Part No. 1-808-30-00)
- Stroke Reducer DB
- Stopover ZSM
- Gripper Jaws for GRZ 25



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-739-02-00	HUZ-P 25 32-50	350	32	50	30	80	56	79,5
1-739-03-00	HUZ-P 25 32-50 CS	350	32	50	30	80	56	79,5

Part No.	Description	F Default position [mm]	G [mm]	G1 ["]	I [mm]	Part present control with plug	Weight [g]
1-739-02-00	HUZ-P 25 32-50	334	M5	G1/8	45		1178
1-739-03-00	HUZ-P 25 32-50 CS	334	M5	G1/8	45	x	1190

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUZ-PL 32 / Gripper with Stroke, Precision Slide, Lightweight



**Remarks:**

**Application:** strong double-acting gripper on stroke with precision slide for demoulding tasks

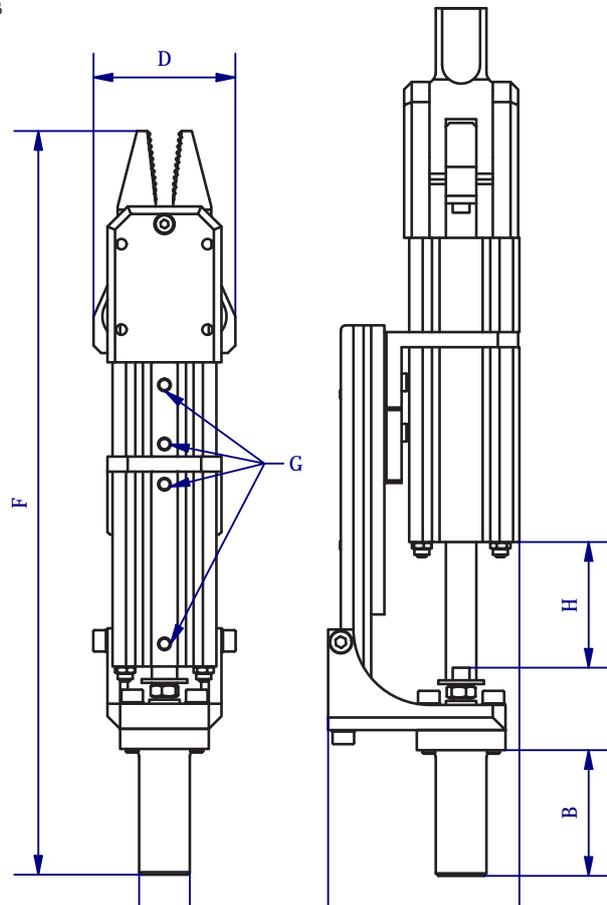
- weight-reduced variant, with the same strokes and forces as the conventional P variants
- can be easily upgraded with Stopover ZSM: HUZ-P becomes HUZ-PZ
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
  - » closing force measured at the point of the jaws at 6 bar
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Variants:**

- C part present sensor IEK 8
- CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB
- Stopover ZSM



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-738-22-00	HUZ-PL 32-50	350	32	50	20	50	56	75.5
1-738-23-00	HUZ-PL 32-50 C	350	32	50	20	50	56	75.5
1-738-24-00	HUZ-PL 32-50 CS	350	32	50	20	50	56	75.5

Part No.	Description	F Default position [mm]	G ["°][mm]	Part present control	Part present control with plug	Weight [g]
1-739-22-00	HUZ-P 32-50	345	G1/8			1676
1-739-23-00	HUZ-P 32-50 C	345	G1/8	x		1744
1-739-24-00	HUZ-P 32-50 CS	345	G1/8		x	1707

## HUZ-PL 32 D / Gripper with Double-Stroke, Precision Slide, Lightweight

**Remarks:**

**Application:** strong double-acting gripper on double-stroke (feeding and demoulding stroke) with precision slide, e.g. for demoulding bumpers

- weight-reduced variant, with the same strokes and forces as the conventional P variants
- new sliding guide
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- double-acting gripper
- end positions of cylinders can be monitored
  - » closing force measured at the point of the jaws at 6 bar
  - » maximum air pressure is 6 bar, use dry and filtered air only

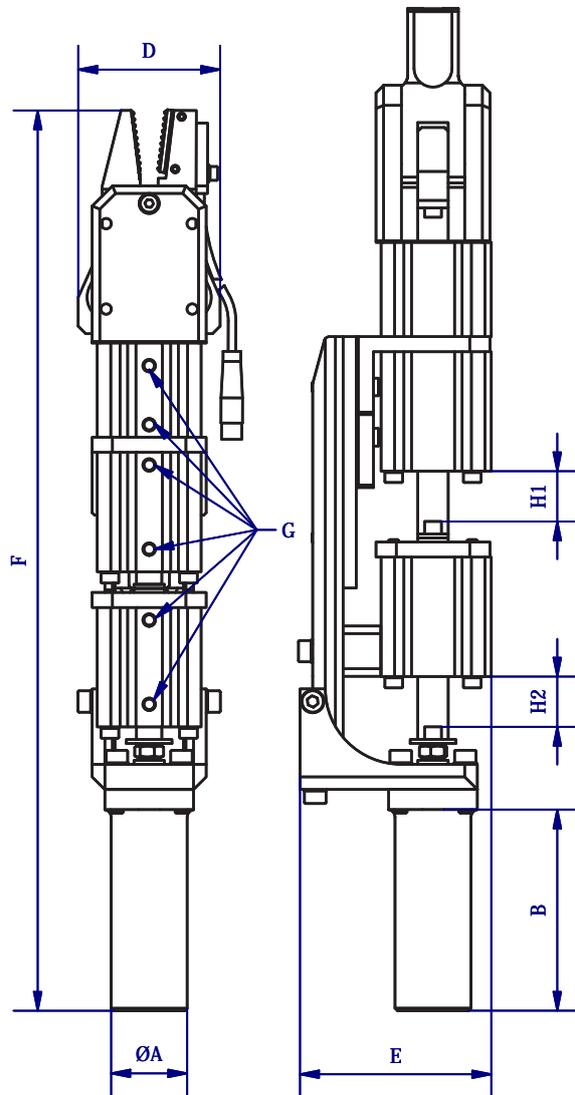


**Variants:**

CS part present sensor IES 8

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	Closing force max. [N]	Pistons Ø [mm]	Stroke H1 [mm]	Stroke H2 [mm]	A [mm]	B [mm]	D [mm]	E [mm]
1-738-67-00	HUZ-PL 32-20-20 CS	350	32	20	20	30	80	56	75,5

Part No.	Description	F [mm]	G [mm]	Part present control with plug	Weight [g]
1-738-67-00	HUZ-PL 32-20-20 CS	358	M5	x	1282

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

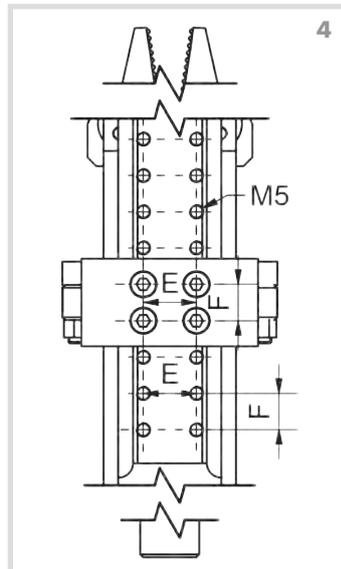
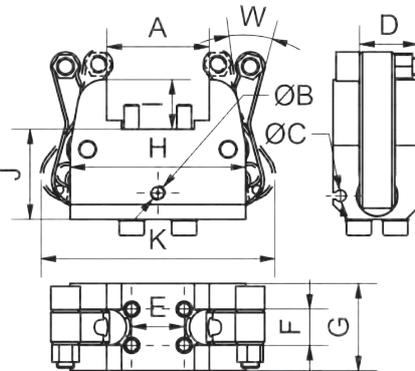
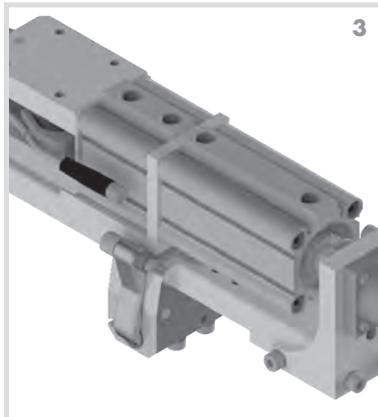
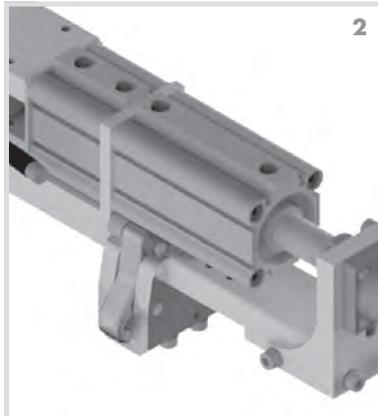
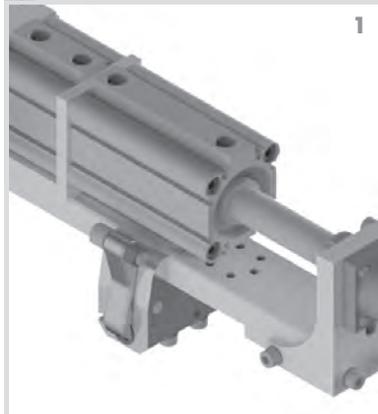
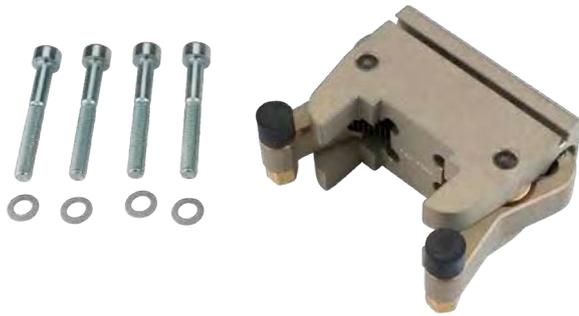
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## ZSM-HUZ PZ / Stopover for HUZ-P



**Remarks:**

**Application: ZSM allows easy retrofitting with a second stroke: HUZ-P becomes HUZ-PZ.**

- feeding stroke 50 mm
- demoulding stroke: 0-50 mm infinitely adjustable
- Stopover ZSM can be easily mounted
- Mounting in 12.5mm grid, see Figure 4
- stepless fine adjustment
- integrated C-slot for monitoring end position
- low-wear rubber buffers dampen the demoulding stroke
- » maximum air pressure is 6 bar, use dry and filtered air only

**Procedure:**

- *Fig. 3: Basic position*
  - delivery stroke, ZSM and GRZ in basic position
- *Fig. 1: Gripping the part*
  - delivery stroke in working position
  - ZSM in basic position
  - GRZ closed
- *Fig. 2: Demolding stroke*
  - ZSM in working position
  - GRZ closed
  - delivery stroke in basic position, basic position is not achieved = intermediate position
- *Fig. 1: Laying down the part*
  - delivery stroke in working position
  - ZSM in basic position
  - GRZ open
- *Fig. 3: Basic position*
  - delivery stroke, ZSM and GRZ in basic position

**Accessories e.g.:**

- Sensor MFS T2 for monitoring ZSM (Part No. 1-808-30-00)

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
1-739-00-00	ZSM-HUZ PZ	35	M5	4	20	18	12,5	30	60

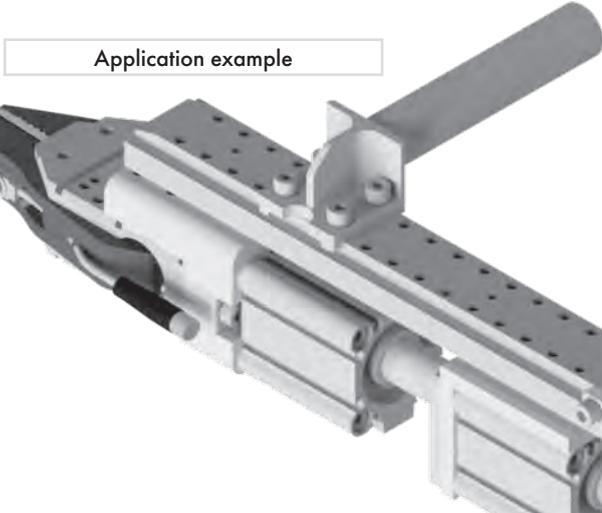
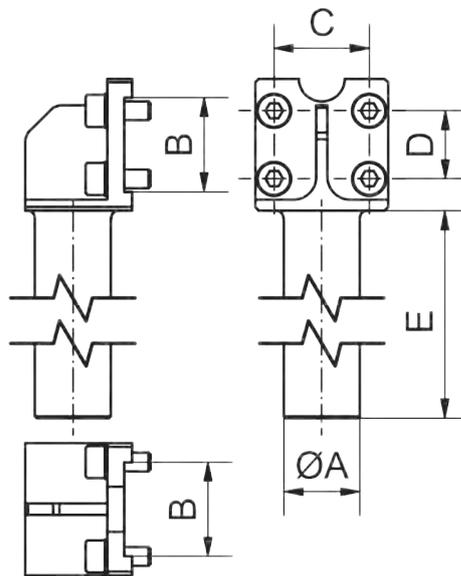
Part No.	Description	I [mm]	J [mm]	W [°]	compatible to	Weight [g]
1-739-00-00	ZSM-HUZ PZ	17	31	22	HUZ-P/PL 25 HUZ-P/PL 32	277

**AU HUZ-P / Adapter for HUZ-P**

**Remarks:**

**Application:** adapter can be mounted form-fitting at 90° to the precision sliding guide of the HUZ-P series

- clamping diameter is compatible with the Robot Hand Kit (EOAT) and offers various application possibilities
- » see application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-753-04-00	AU 20-100 HUZ-P	20	25	25	18	100	Aluminium	79

**000**  
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**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
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Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

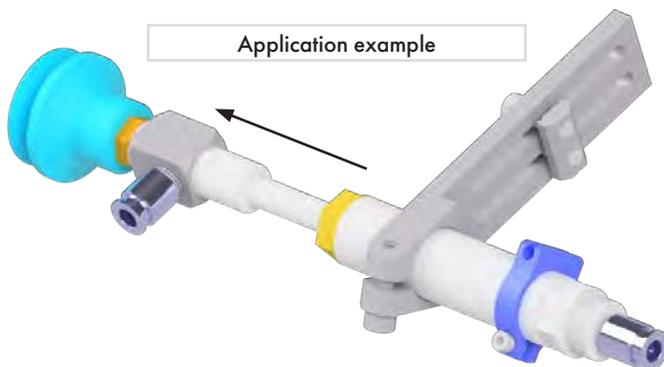
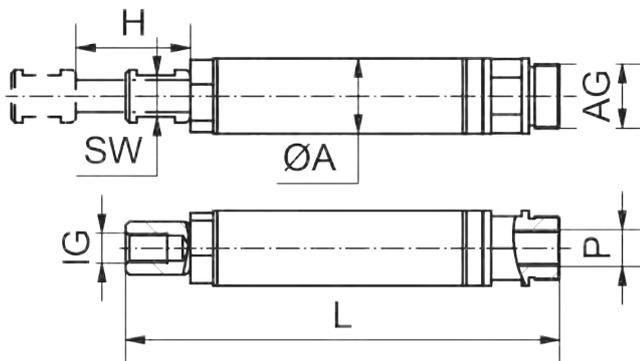
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## ZHS / Stroke unit for vacuum cups

## ZHS VG / Stroke unit for vacuum cups, non-rotating



**Remarks:**

**Application: for gripping sidewise, e.g. for diagonal feeding of vacuum cups**

- VG = non-rotating version
  - single-acting cylinder:
    - air pressure - moving forward
    - spring - moving backwards
  - required accessories:
    - Adapter with female thread:
      - AVI 8-1/8-1/8 (Part No. 1-290-77-00) for vacuum cups with 1/8" connection thread or
      - AVI 8-1/4-1/8 (Part No. 1-290-79-00) for vacuum cups with 1/4" connection thread
- » maximum air pressure is 6 bar, use dry and filtered air only

**Scope of delivery:**

- adaptors and vacuum cups not included

**Accessories e.g.:**

- Sensor MFS T2 3,7 (Part No. 1-808-30-00)
- Sensor Bracket GFR SH 20 AL
- Sensor ICS 8 (Part No. 1-808-36-00)
- Sensor Bracket GRF-SH20-ICS

Part No.	Description	A [mm]	Hub H [mm]	L [mm]	IG [mm]	AG [mm]	P ["]	SW [mm]	Weight [g]
1-776-00-00	ZHS 20-30	20	30	106	M8	M17x1	G1/8	11	62
1-776-00-00-1	ZHS 20-30 VG	20	30	106	M8	M17x1	G1/8	11	62

**New**

**HUS / Double Stroke Unit for Vacuum Cups**



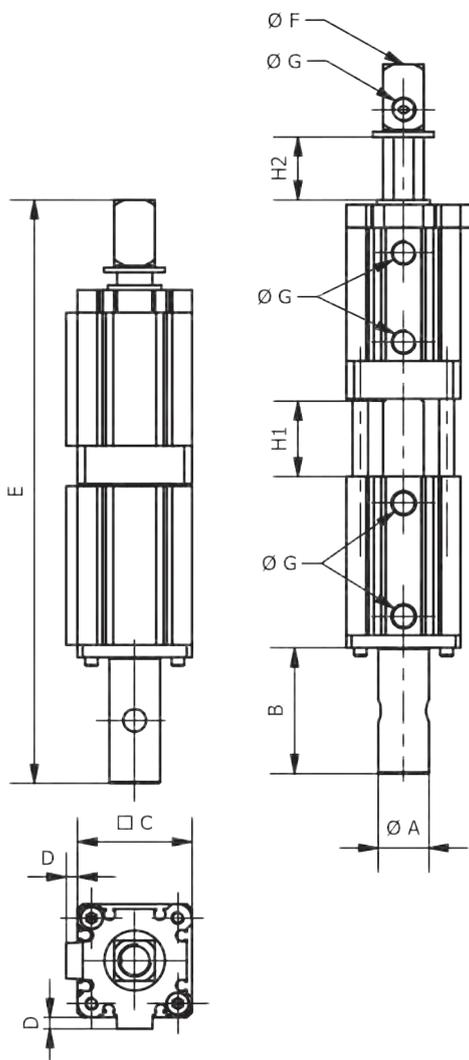
**Remarks:**

**Application: Double Stroke Unit for Vacuum Cups with feeding and demoulding stroke, e.g. for demoulding bumpers**

- locked against rotation
- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Vacuum and Special Vacuum Cups (chapter 200 and 224)
- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E Default Position [mm]	F [°]	G [°]
1-749-01-00	HUS 32-30-20	20	50	45	4,5	232	G 1/4	G 1/8

Part No.	Description	Piston Ø [mm]	Stroke H1 [mm]	Stroke H2 [mm]	Weight [g]
1-749-01-00	HUS 32-30-20	32	30	20	803

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## G-HUS 32-20 / Stroke Unit for Vacuum Cups, locked against rotation



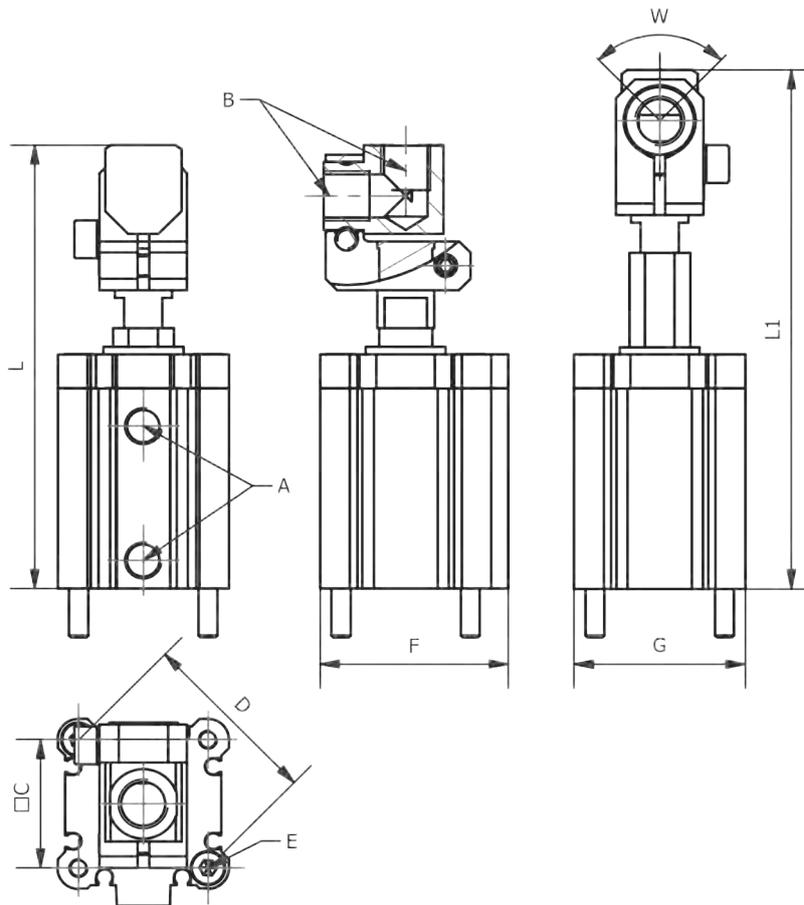
**Remarks:**

**Application:** Stroke Unit for oval suction cups and/or angled vacuum cups

- flexibal positioning of vacuum cups
- cylinder locked against rotation
- end positions of cylinders can be monitored
- threads for vacuum suction and suction line can be reduced with reducing nipple RNK
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Gripper Arm for Short Stroke Cylinder GAZ and GAZ S
- Adapter ADZ
- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Application example



Part No.	Description	A ["]	B ["]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
1-749-50-00	G-HUS 32-20	G 1/8	G 1/4	34	48	M5	49,5	45
Part No.	Description	Piston Ø [mm]	Stroke [mm]	L [mm]	L1 [mm]	W [°]	Weight [g]	
1-749-50-00	G-HUS 32-20	32	20	117,5	137,5	+/- 90	314	

**HUS DUV 32-30 / Stroke Unit for Vacuum Cups, locked against rotation, double acting, with air duct**

**Remarks:**

**Application: e.g. for Vacuum Cups with feeding and demoulding stroke, e.g. for demoulding parts**

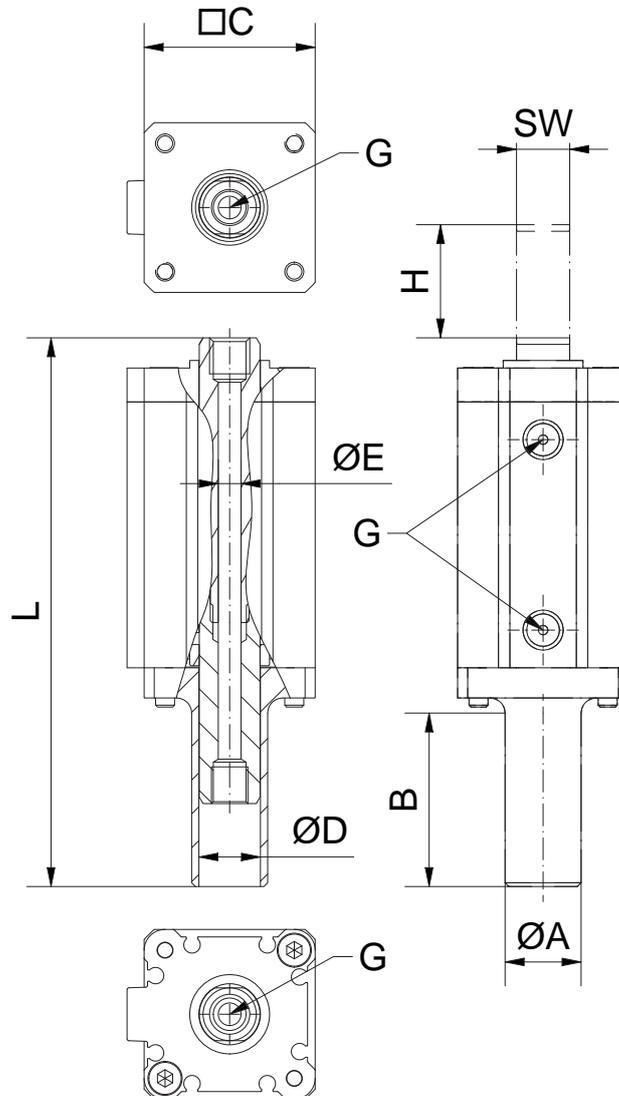
- also suitable for oval vacuum cups
- double acting
- locked against rotation
- end positions of cylinders can be monitored
- maximum air pressure is 6 bar, use dry and filtered air only

**Accessories e.g.:**

- Vacuum and Special Vacuum Cups (chapter 200 and 224)
- Sensor ICS 8 (Part No. 1-808-36-00)
- Sensor MFS T2 (Part No. 1-808-30-00)



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	H [mm]	L [mm]	SW [mm]	Weight [g]
1-749-80-00	HUS DUV 32-30	20	45	45	16,2	6	1/8	30	145,5	14	500

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HUE / Slide Unit



**Remarks:**

**Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part**

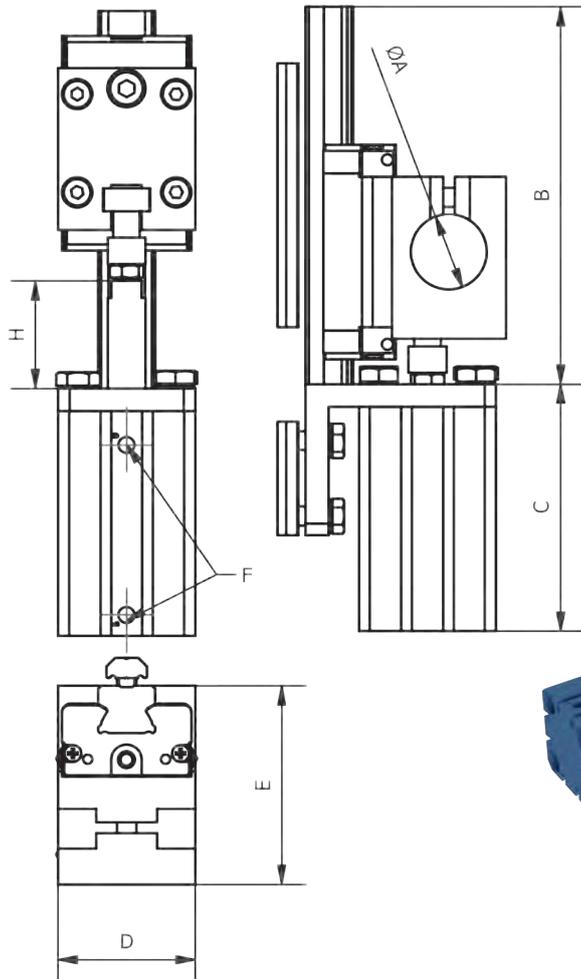
- sliding unit easy to mount on profile
- mounting material fits for profile systems
- clamping diameter 20 mm
- air connections: M5
- precise and resilient linear ball guide
- can absorb lateral forces and moments
- double-acting cylinder
- end positions of cylinders can be monitored

**Scope of delivery:**

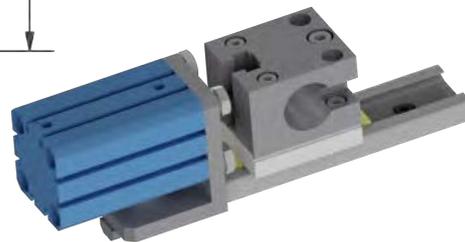
- incl. mounting material

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-11-00	HUE 20-30-20	20	100	65.5	36	52.5	M5	20	30	689
1-745-10-00	HUE 20-50-20	20	120	85.5	36	52.5	M5	20	50	719
1-745-12-00	HUE 20-75-20	20	145	122	36	52.5	M5	20	75	859
1-745-13-00	HUE 20-100-20	20	170	147	36	52.5	M5	20	100	961
1-745-14-00	HUE 20-125-20	20	195	172	36	52.5	M5	20	125	1074

## HUE G / Slide Unit with Sliding Guide

**Remarks:**

**Application:** e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

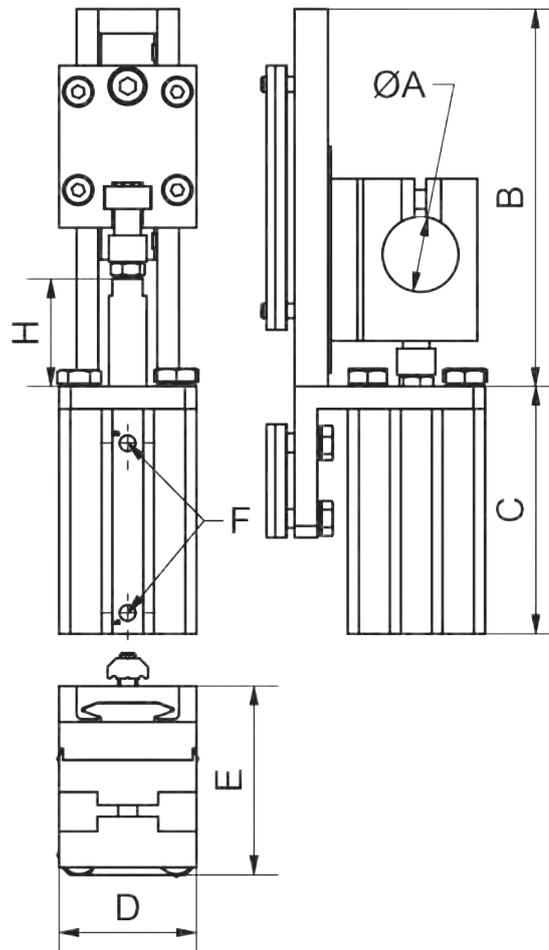
- new sliding guide
- lightweight alternative to HUE
- free from floating due to spring-loaded sliding elements
- wear is compensated by spring
- end positions of cylinders can be monitored
- mounting material fits for profile systems
- clamping diameter 20 mm
- can absorb lateral forces and moments
- double-acting cylinder
- » maximum air pressure is 6 bar, use dry and filtered air only

**Scope of delivery:**

- incl. mounting material

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-20-00	HUE G 20-30-20	20	100	65,5	36	50	M5	20	30	455
1-745-21-00	HUE G 20-50-20	20	120	85,5	36	50	M5	20	50	515
1-745-22-00	HUE G 20-75-20	20	150	122	36	50	M5	20	75	620
1-745-23-00	HUE G 20-100-20	20	175	147	36	50	M5	20	100	695
1-745-24-00	HUE G 20-125-20	20	200	172	36	50	M5	20	125	765

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Gripper Fingers

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

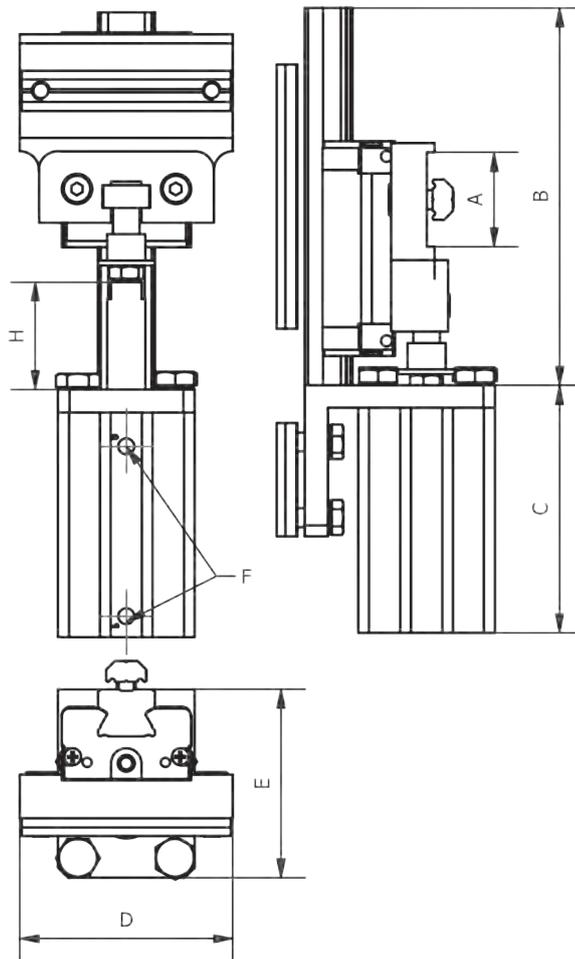
**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

## HUE X / Slide Unit for adapting X-Profile



**Remarks:**

**Application: e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part**

- form fitting connection to X 25 profile
- sliding unit easy to mount on profile
- mounting material fits for profile systems
- air connections: M5
- precise and resilient linear ball guide
- can absorb lateral forces and moments
- double-acting cylinder
- end positions of cylinders can be monitored

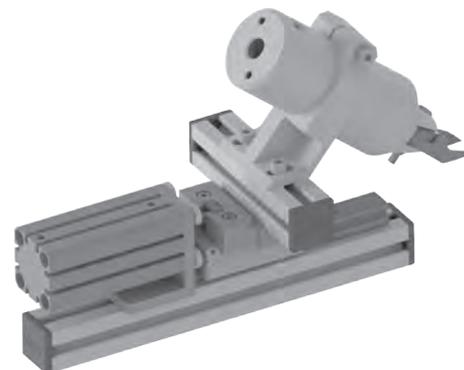
**Scope of delivery:**

- incl. mounting material

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Piston Ø [mm]	Stroke H [mm]	Weight [g]
1-745-50-00	HUE X 25-30-20	25	100	65,5	56	50	M5	20	30	656
1-745-51-00	HUE X 25-50-20	25	120	65,5	56	50	M5	20	50	740
1-745-52-00	HUE X 25-75-20	25	145	65,5	56	50	M5	20	75	869
1-745-53-00	HUE X 25-100-20	25	170	65,5	56	50	M5	20	100	967
1-745-54-00	HUE X 25-125-20	25	195	65,5	56	50	M5	20	125	1089

## HUE G Profile / Slide Unit with Sliding Guide on Profile

**Remarks:**

**Application:** e.g. for compacting plastic parts or for pushing active elements (such as nippers, gripper fingers, grippers etc.) against the plastic part

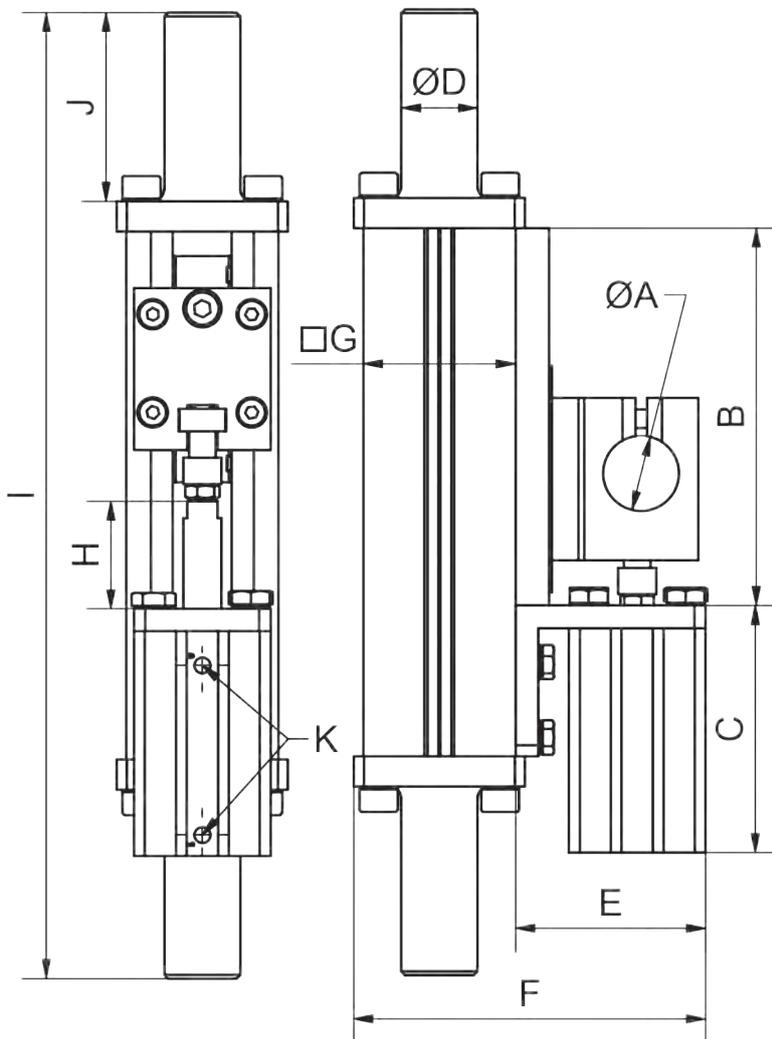
- flexible mounting options
  - new sliding guide
  - free from floating due to spring-loaded sliding elements
  - wear is compensated by spring
  - end positions of cylinders can be monitored
  - mounting material fits for profile systems
  - clamping diameter suitable for the Robot Hand Kit
  - can absorb lateral forces and moments
  - double-acting cylinder
  - can be combined individually with other elements from the Robot Hand Kit such as HUE, DKZ
- » maximum air pressure is 6 bar, use dry and filtered air only

**Scope of delivery:**

- incl. mounting material

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Stroke Reducer DB



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]
1-745-30-00	HUE G 20-30-20-X-25-25-14	20	100	65,5	14	50	76,5	25	248	50
1-745-31-00	HUE G 20-30-20-JU-40-40-20	20	100	65,5	20	50	92,5	40	256	50

Part No.	Description	K [mm]	Stroke H [mm]	Piston Ø [mm]	Weight [g]
1-745-30-00	HUE G 20-30-20-X-25-25-14	M5	30	20	611
1-745-31-00	HUE G 20-30-20-JU-40-40-20	M5	30	20	857

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
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Adapters for  
Vacuum Cups

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Parallel Gripper

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Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

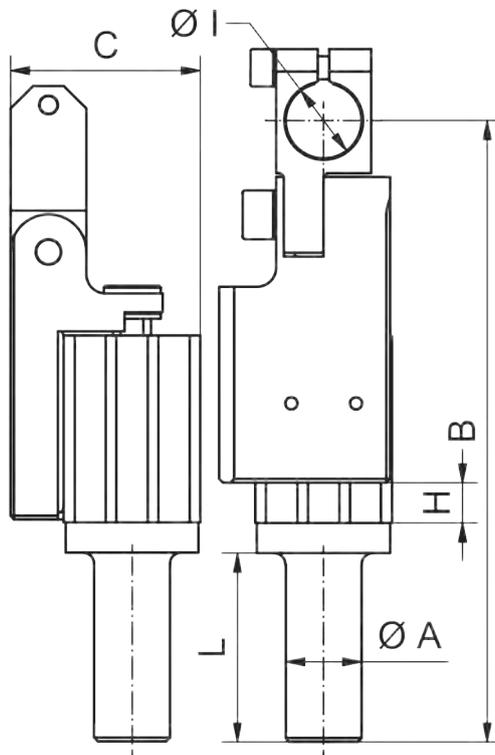
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## ZHG / Cutter Slide

## ZHD / Cutter Slide, double-acting



**Remarks:**

**Application: e.g. in combination with nippers**

- articulated arm infinitely adjustable
- two variants available:
  - single-acting - ZHG
  - double-acting - ZHD
- weight and cost optimized solution
- end positions of cylinders can be monitored

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)

## ZHG / Cutter Slide

Part No.	Description	A [mm]	B [mm]	C [mm]	L [mm]	I [mm]	Piston Ø [mm]	Run-in	Getting out	Stroke H [mm]	Weight [g]
1-748-11-00	ZHG 20-10	20	162.7	50	50	20	20	compr. air	spring load	5	383
1-748-12-00	ZHG 20-20	20	173.7	50	50	20	20	compr. air	spring load	14	435
1-748-03-00	ZHG 14-12-10	14	134.3	31.5	40	14	12	compr. air	spring load	4	148

## ZHD / Cutter Slide, double acting

Part No.	Description	A [mm]	B [mm]	C [mm]	L [mm]	I [mm]	Piston Ø [mm]	Run-in	Getting out	Stroke H [mm]	Weight [g]
1-748-21-00	ZHD 20-10	20	155	50	50	20	20	compr. air	compr. air	12.5	378
1-748-22-00	ZHD 20-20	20	165	50	50	20	20	compr. air	compr. air	22.5	420
1-748-04-00	ZHD 14-12-10	14	123,8	31,5	40	14	12	compr. air	compr. air	11	148

## KHR / Blade Holder

**Remarks:**

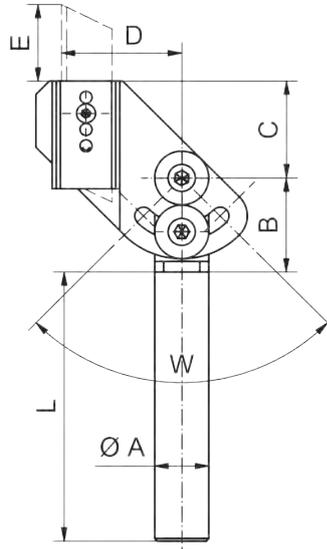
**Application: for precise separation of film gates**

- compact design
- easy to combine with other components
- blade angle is adjustable
- blade can be heated optionally
- heatable to 130°C

**Scope of delivery:**

- 5 blades
- blade cover

**Application example**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	W [°]	L [mm]	Weight [g]
1-744-00-00	KHR 20-100	20	35	36	45	16.5 - 34.5	+/- 45	100	244

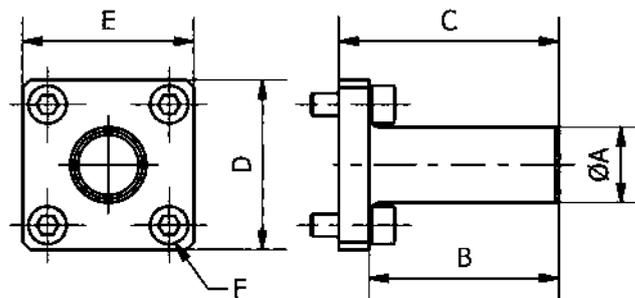
## DKZ / Mounting Bar, central

**Remarks:**

**Application: allows a more flexible integration of swivelling blade holder KHR-S**

- can be easily mounted at the ends of profiles
- » see application example

**Application example**



Part No.	Description	A Ø [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-110-45-00	DKZ X 14-50	14	50	54	28	28	M5	Aluminium	32
1-110-50-00	DKZ JU 20-50	20	50	58	45	45	M6	Aluminium	84

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
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**230**  
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**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

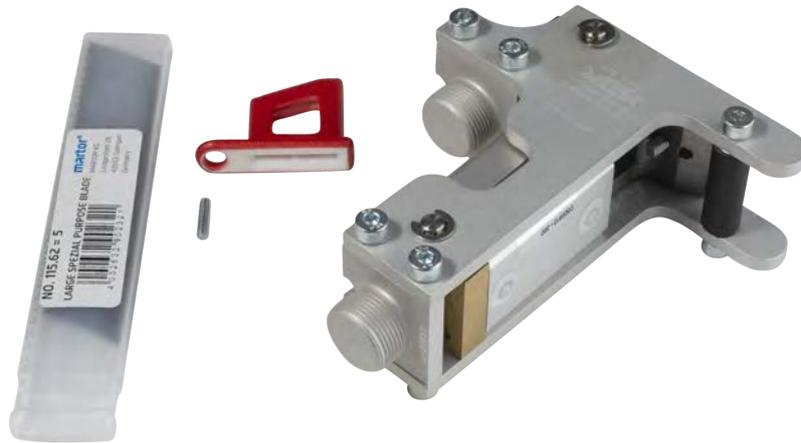
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## KHR-S / Blade Holder, swivelling



**Remarks:**

**Application: for precise separation of film gates - the blade is pressed on the part**

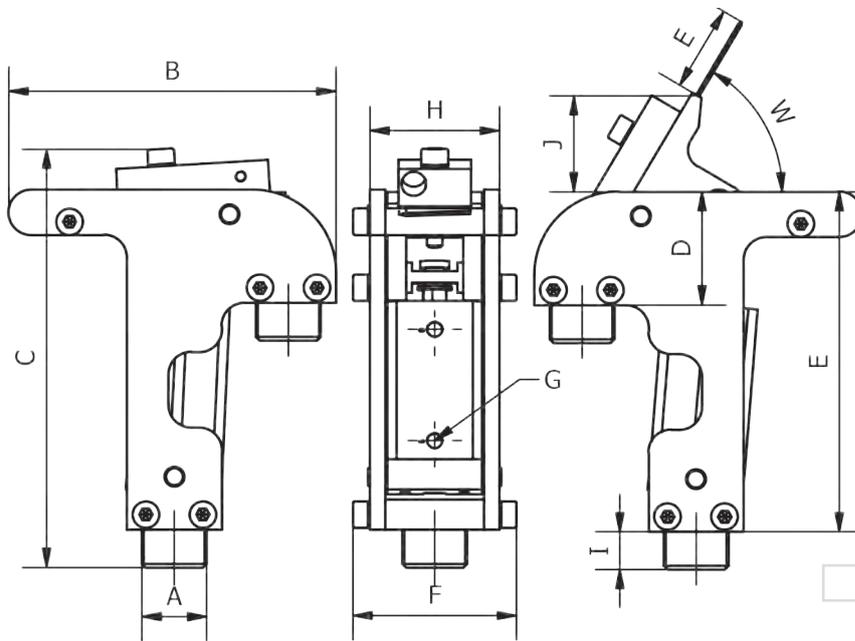
- two positions can be monitored
- double-acting, piston Ø 12 mm
- optionally: blade can be heated by commercially available heating cartridge (Ø 6,5mm)
  - » maximum air pressure is 6 bar, use dry and filtered air only
  - » see application example

**Scope of delivery:**

- 5 blades
- blade cover

**Accessories e.g.:**

- Sensor MFS T2 (Part No. 1-808-30-00)



Application example



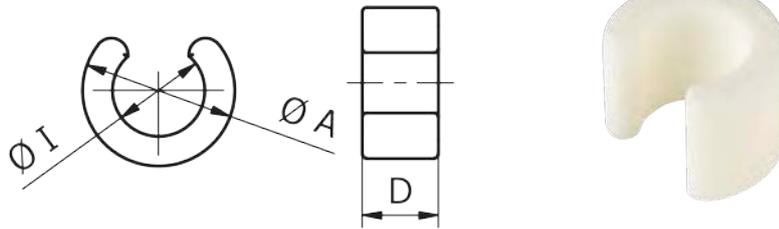
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	W [°]	Weight [g]
1-744-50-00	KHR-S 20-60	M17x1	86	111	30	90	43	M5	34	10	25	60	383

## DB / Stroke Reducer

**Remarks:**

**Application: for reducing the stroke of the HUZ, SZD or KHZ units**

» see application example



Part No.	Description	compatible to compact cylinder Ø	Ø I [mm] Piston	A [mm]	D [mm]	Material	Weight [g]
1-701-01-00	DB 5-32	32	16	24	5	PA	1
1-701-02-00	DB 10-32	32	16	24	10	PA	2
1-701-03-00	DB 15-32	32	16	24	15	PA	3
1-701-04-00	DB 5-25	25	12	20	5	PA	1
1-701-05-00	DB 10-25	25	12	20	10	PA	2
1-701-06-00	DB 15-25	25	12	20	15	PA	2
1-701-07-00	DB 5-20	20	10	18	5	PA	1
1-701-08-00	DB 10-20	20	10	18	10	PA	2
1-701-09-00	DB 15-20	20	10	18	15	PA	2

## KHZ / Short Stroke Cylinder

**Remarks:**

**Application: universally applicable, double-acting Short Stroke Cylinder**

- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only

**Drawing:**

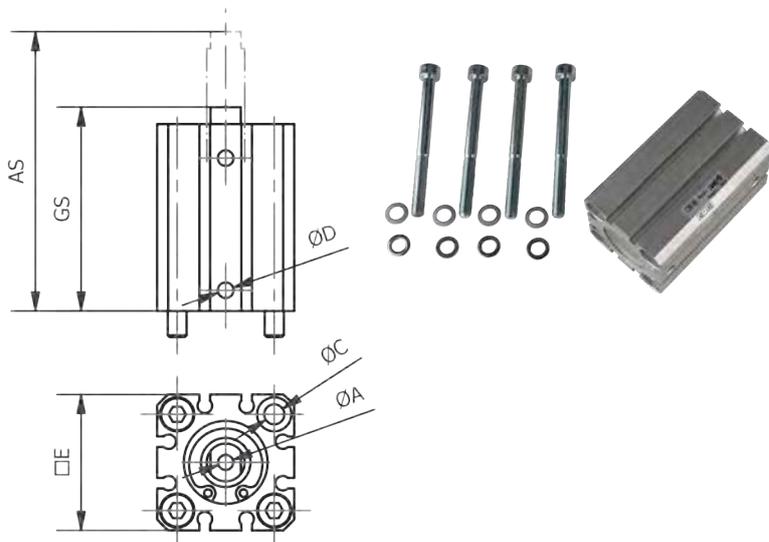
D air connection

**Scope of delivery:**

- with screws and locking washers

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Gripper Arms for Short Stroke Cylinder GAZ and GAZ S



Part No.	Description	Piston Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm] ["]	E [mm]	GS [mm]	AS [mm]	Stroke [mm]	Sensor	Weight [g]
1-710-09-00	KHZ 12-5 DA	12	M3	21.9	3.5	M5	25	25.5	30.5	5	ICS 8	44
1-710-12-00	KHZ 12-10 DA	12	M3	21.9	3.5	M5	25	30.5	40.5	10	ICS 8	51
1-710-39-00	KHZ 20-5 DA	20	M5	36.1	5.5	M5	36	39	44	5	ICS 8	119
1-710-42-00	KHZ 20-10 DA	20	M5	36.1	5.5	M5	36	44	54	10	ICS 8	134
1-710-45-00	KHZ 20-20 DA	20	M5	36.1	5.5	M5	36	54	74	20	ICS 8	167
1-710-48-00	KHZ 20-30 DA	20	M5	36.1	5.5	M5	36	64	94	30	ICS 8	197
1-710-69-00	KHZ 32-5 DA	32	M8	48.1	5.5	G1/8	45	45	50	5	ICS 8	213
1-710-72-00	KHZ 32-10 DA	32	M8	48.1	5.5	G1/8	45	50	60	10	ICS 8	227
1-710-75-00	KHZ 32-20 DA	32	M8	48.1	5.5	G1/8	45	60	80	20	ICS 8	271
1-710-78-00	KHZ 32-30 DA	32	M8	48.1	5.5	G1/8	45	90	100	30	ICS 8	315
1-710-82-00	KHZ 32-50 DA	32	M8	48.1	5.5	G1/8	45	90	140	50	ICS 8	407

**000**  
Quick Change Systems

**050**  
Profiles  
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**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## SZD / Special Cylinder



**Remarks:**

**Application:** double-acting Special Short Stroke Cylinder with yoke plate for gripper arms for vacuum cups, such as GSE, GGE, etc.

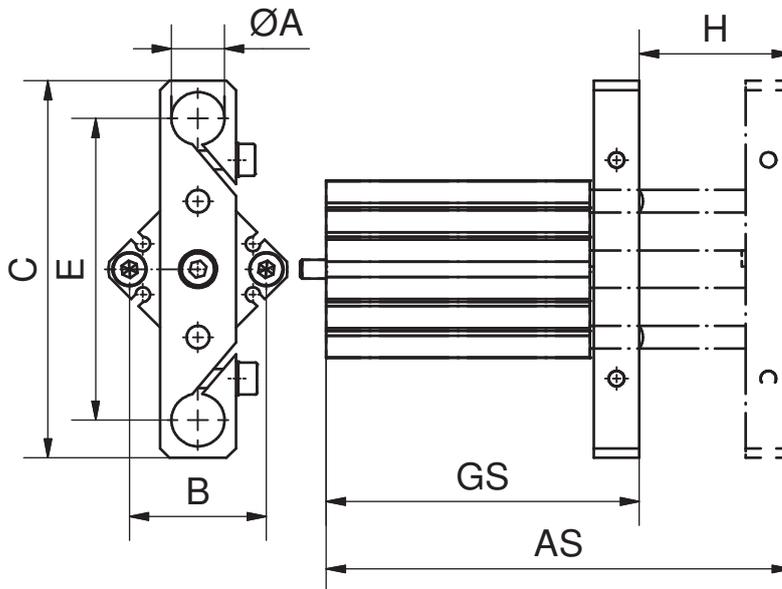
- special designs of the yoke plate (dimensions A and E) on request
- double-acting cylinder
- end positions of cylinders can be monitored
- » maximum air pressure is 6 bar, use dry and filtered air only
- » see application example

**Scope of delivery:**

- with screws and locking washers

**Accessories e.g.:**

- Sensor ICS 8 for monitoring cylinder (Part No. 1-808-36-00)
- Gripper Arms for Short Stroke Cylinder GAZ and GAZ S



Part No.	Description	Piston Ø [mm]	A [mm]	B [mm]	C [mm]	E [mm]	GS [mm]	AS [mm]	Stroke H [mm]	Air connection	Weight [g]
1-715-03-00	SZD 12-10-55A	12	10	21.9	70	55	41	51	10	M5	80
1-715-06-00	SZD 12-20-55A	12	10	21.9	70	55	51	71	20	M5	95
1-715-30-00	SZD 20-10-80A	20	14	36.1	100	80	52.5	62.5	10	M5	209
1-715-33-00	SZD 20-20-80A	20	14	36.1	100	80	62.5	82.5	20	M5	240
1-715-36-00	SZD 20-30-80A	20	14	36.1	100	80	72.5	102.5	30	M5	274
1-715-39-00	SZD 20-40-80A	20	14	36.1	100	80	82.5	122.5	40	M5	306
1-715-42-00	SZD 20-50-80A	20	14	36.1	100	80	92.5	142.5	50	M5	337
1-715-60-00	SZD 32-10-120A	32	20	48.1	145	120	59	69	10	G1/8	373
1-715-63-00	SZD 32-20-120A	32	20	48.1	145	120	69	89	20	G1/8	416
1-715-66-00	SZD 32-30-120A	32	20	48.1	145	120	79	109	30	G1/8	461
1-715-69-00	SZD 32-40-120A	32	20	48.1	145	120	89	129	40	G1/8	508
1-715-72-00	SZD 32-50-120A	32	20	48.1	145	120	99	149	50	G1/8	554

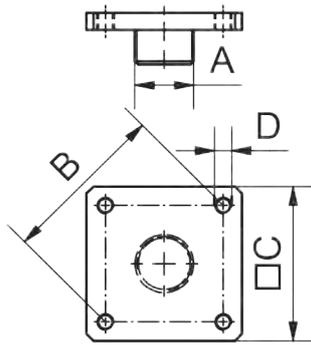
## ADZ / Adapter for Short Stroke Cylinder KHZ and SZD

**Remarks:**

**Application:** adapts short stroke cylinders KHZ and SZD on extension tube VLR

**Accessories e.g.:**

- Extension Tube VLR



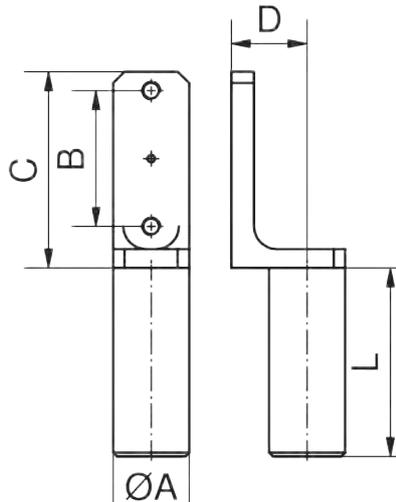
Part No.	Description	compatible with VLR	compatible with KHZ	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-725-03-00	ADZ 14-12	VLR 14	KHZ/SZD 12	M12x1	21.9	25	M3	Aluminium	11
1-725-06-00	ADZ 20-20	VLR 20	KHZ/SZD 20	M17x1	36.1	35	M5	Aluminium	22
1-725-09-00	ADZ 20-32	VLR 20	KHZ/SZD 32	M17x1	48.1	45	M5	Aluminium	33
1-725-12-00	ADZ 30-32	VLR 30	KHZ/SZD 32	M27x1	48.1	45	M5	Aluminium	42

## GAZ / Gripper Arm for Short Stroke Cylinder KHZ and SZD

**Remarks:**

**Application:** for mounting short stroke cylinders KHZ and SZD

- cylinder mounted with 2 screws to the GAZ
- clamping diameter offers several mounting methods
- made of anodized Aluminium



Part No.	Description	compatible with	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-720-03-00	GAZ 12-10-30	KHZ/SZD12	10	22	37	12.5	30	Aluminium	12
1-720-06-00	GAZ 12-10-60	KHZ/SZD12	10	22	37	12.5	60	Aluminium	17
1-720-09-00	GAZ 12-10-90	KHZ/SZD12	10	22	37	12.5	90	Aluminium	22
1-720-12-00	GAZ 12-14-40	KHZ/SZD12	14	22	37	12.5	40	Aluminium	16
1-720-15-00	GAZ 12-14-80	KHZ/SZD12	14	22	37	12.5	80	Aluminium	24
1-720-18-00	GAZ 12-14-120	KHZ/SZD12	14	22	37	12.5	120	Aluminium	32
1-720-21-00	GAZ 20-20-50	KHZ/SZD20	20	36	52	20	50	Aluminium	35
1-720-24-00	GAZ 20-20-100	KHZ/SZD20	20	36	52	20	100	Aluminium	50
1-720-27-00	GAZ 20-20-150	KHZ/SZD20	20	36	52	20	150	Aluminium	67
1-720-30-00	GAZ 32-20-50	KHZ/SZD32	20	48.1	66	20	50	Aluminium	43
1-720-33-00	GAZ 32-20-100	KHZ/SZD32	20	48.1	66	20	100	Aluminium	60
1-720-36-00	GAZ 32-20-150	KHZ/SZD32	20	48.1	66	20	150	Aluminium	72

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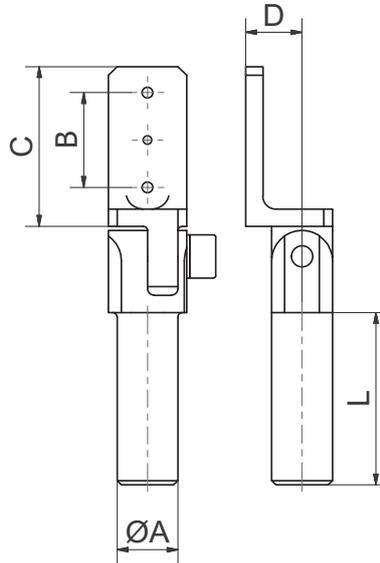
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# 700 | Special Elements

## GAZ S / Gripper Arm for Short Stroke Cylinder with Swivel



**Remarks:**

**Application: for mounting short stroke cylinders KHZ and SZD in an angle**

- for usage with Short Stroke Cylinder KHZ and Special Cylinder SZD
- infinitely adjustable angle of +/- 90 °
- strong clamping prevents adjustment while mounting
- clamping diameter offers several mounting methods
- made of anodized Aluminium
- » see application example

Part No.	Description	Compatibel to cylinder	A [mm]	B [mm]	C [mm]
1-720-04-00	GAZ S 12-10-30	KHZ/SZD12	10	22	37
1-720-07-00	GAZ S 12-10-60	KHZ/SZD12	10	22	37
1-720-10-00	GAZ S 12-10-90	KHZ/SZD12	10	22	37
1-720-13-00	GAZ S 12-14-40	KHZ/SZD12	14	22	37
1-720-16-00	GAZ S 12-14-80	KHZ/SZD12	14	22	37
1-720-19-00	GAZ S 12-14-120	KHZ/SZD12	14	22	37
1-720-22-00	GAZ S 20-20-50	KHZ/SZD20	20	36	52
1-720-25-00	GAZ S 20-20-100	KHZ/SZD20	20	36	52
1-720-28-00	GAZ S 20-20-150	KHZ/SZD20	20	36	52
1-720-31-00	GAZ S 32-20-50	KHZ/SZD32	20	48	66
1-720-34-00	GAZ S 32-20-100	KHZ/SZD32	20	48	66
1-720-37-00	GAZ S 32-20-150	KHZ/SZD32	20	48	66

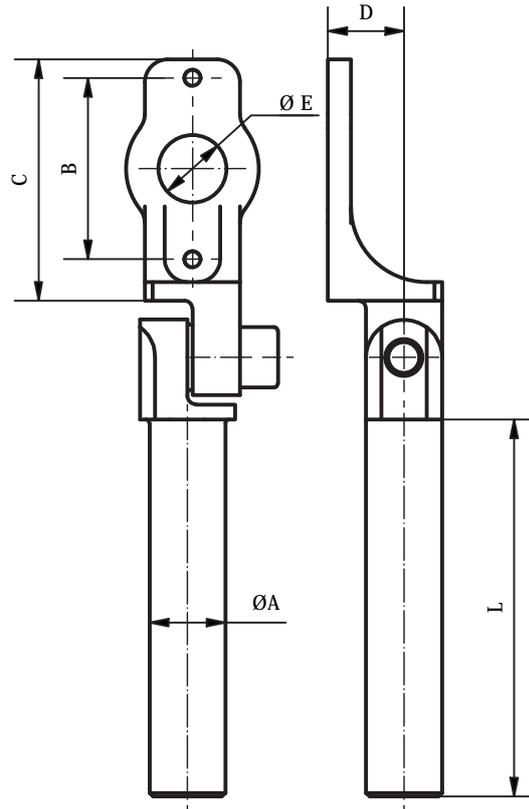
Part No.	Description	D [mm]	L [mm]	Swivel Area	Material	Weight [g]
1-720-04-00	GAZ S 12-10-30	15	30	+/- 90°	Aluminium	19
1-720-07-00	GAZ S 12-10-60	15	60	+/- 90°	Aluminium	22
1-720-10-00	GAZ S 12-10-90	15	90	+/- 90°	Aluminium	26
1-720-13-00	GAZ S 12-14-40	13	40	+/- 90°	Aluminium	36
1-720-16-00	GAZ S 12-14-80	13	80	+/- 90°	Aluminium	44
1-720-19-00	GAZ S 12-14-120	13	120	+/- 90°	Aluminium	55
1-720-22-00	GAZ S 20-20-50	20	50	+/- 90°	Aluminium	92
1-720-25-00	GAZ S 20-20-100	20	100	+/- 90°	Aluminium	107
1-720-28-00	GAZ S 20-20-150	20	150	+/- 90°	Aluminium	126
1-720-31-00	GAZ S 32-20-50	20	50	+/- 90°	Aluminium	98
1-720-34-00	GAZ S 32-20-100	20	100	+/- 90°	Aluminium	112
1-720-37-00	GAZ S 32-20-150	20	150	+/- 90°	Aluminium	132

## GAZ SK / Gripper Arm for Short Stroke Cylinder with Swivel, conical clamping

**Remarks:**

**Application:** for mounting short stroke cylinders KHZ and SZD in an angle

- improved clamping force due to conical clamping
- especially for short-stroke and special cylinders KHZ and SZD
- the hole allows the piston rod of the cylinder to pass through
- continuously adjustable angle of +/- 105°
- various lengths for the widest possible range of use
- anodized aluminum gripper arm



Part No.	Description	Compatibel to cylinder	A [mm]	B [mm]	C [mm]
1-721-22-00	GAZ SK 20-20-50	KHZ/SZD 20	20	36	64
1-721-25-00	GAZ SK 20-20-100	KHZ/SZD 20	20	36	64
1-721-28-00	GAZ SK 20-20-150	KHZ/SZD 20	20	36	64
1-721-31-00	GAZ SK 32-20-50	KHZ/SZD 32	20	48	78
1-721-34-00	GAZ SK 32-20-100	KHZ/SZD 32	20	48	78
1-721-37-00	GAZ SK 32-20-150	KHZ/SZD 32	20	48	78

Part No.	Description	D [mm]	E [mm]	L [mm]	Swivel Area	Material	Weight [g]
1-721-22-00	GAZ SK 20-20-50	20	18	50	+/-105	Aluminium	111
1-721-25-00	GAZ SK 20-20-100	20	18	100	+/-105	Aluminium	126
1-721-28-00	GAZ SK 20-20-150	20	18	150	+/-105	Aluminium	145
1-721-31-00	GAZ SK 32-20-50	20	18	50	+/-105	Aluminium	117
1-721-34-00	GAZ SK 32-20-100	20	18	100	+/-105	Aluminium	131
1-721-37-00	GAZ SK 32-20-150	20	18	150	+/-105	Aluminium	151

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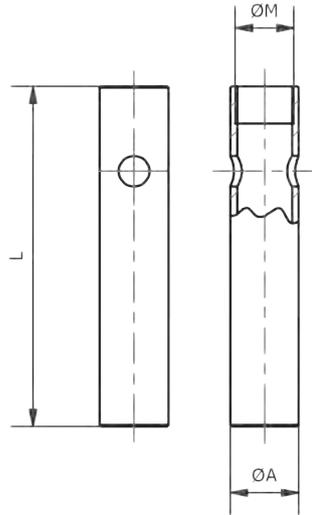
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## VLR / Extension Tubes



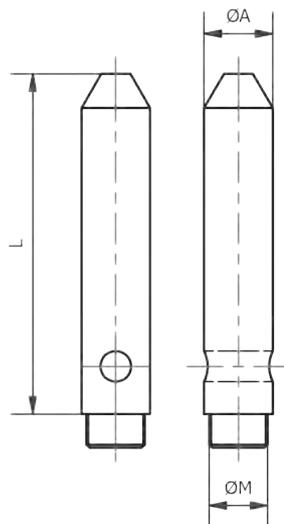
**Remarks:**

**Application: for extending various components of the Robot Hand Kit (EOAT)**

- Extension Tubes VLR are suitable for e.g.:
  - gripper fingers GRF, GFD, GRF P
  - adapters ADZ, AP-PGR, AD IGB AD-GRZ 20 U
  - ZTB centering pin
  - and many other components
- clamping diameter compatible with the Robot Hand Kit (EOAT) for flexible applications
- it is recommended to glue the VLR

Part No.	Description	A [mm]	M [mm]	L [mm]	Material	Weight [g]
1-735-03-00	VLR 10-30	10	M8x1	30	Aluminium	3
1-735-06-00	VLR 10-60	10	M8x1	60	Aluminium	7
1-735-09-00	VLR 10-90	10	M8x1	90	Aluminium	12
1-735-12-00	VLR 14-40	14	M12x1	40	Aluminium	7
1-735-15-00	VLR 14-80	14	M12x1	80	Aluminium	15
1-735-18-00	VLR 14-120	14	M12x1	120	Aluminium	23
1-735-21-00	VLR 20-50	20	M17x1	50	Aluminium	16
1-735-24-00	VLR 20-100	20	M17x1	100	Aluminium	34
1-735-27-00	VLR 20-150	20	M17x1	150	Aluminium	52
1-735-30-00	VLR 30-80	30	M27x1	80	Aluminium	47
1-735-33-00	VLR 30-140	30	M27x1	140	Aluminium	85
1-735-36-00	VLR 30-200	30	M27x1	200	Aluminium	124

## ZTB / Centering Pin



**Remarks:**

**Application: for example for simple centering tasks**

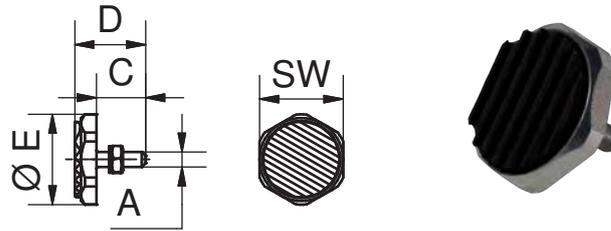
- can be tightened by the cross hole using a screwdriver
- thread G allows the ZTB to connect to a VLR extension tube

Part No.	Description	A [mm]	M [mm]	L [mm]	compatible with	Material	Weight [g]
1-790-20-00	ZTB 10-60	10	M8x1	60	VLR 10	POM	7
1-790-23-00	ZTB 14-80	14	M12x1	80	VLR 14	POM	17
1-790-29-00	ZTB 20-100	20	M17x1	100	VLR 20	POM	43
1-790-35-00	ZTB 30-100	30	M27x1	100	VLR 30	POM	100

## DPL / Pressure Plate for Short Stroke Cylinder

### Remarks:

- a ribbed rubber pad is glued on the Pressure Plates
- Exception: DPL 12-3 is completely made of steel and galvanized



Part No.	Description	A [mm]	SW [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-03-00	DPL 12-3	M 3		9	12.3	12	3
1-790-06-00	DPL 25-3	M 3	22	7	11.7	25	8
1-790-09-00	DPL 25-4	M 4	22	13	18.5	25	12
1-790-12-00	DPL 25-5	M 5	22	13	18.5	25	13
1-790-16-00	DPL 25-6	M 6	22	13	18.5	25	15

## DPL PU / Pressure Plate for Short Stroke Cylinder

### Remarks:

- Pressure Plates are covered with polyurethane pads
- PU pads increase friction and also are dimensionally stable
- EPDM is heat resistant up to 150°C



Part No.	Description	A [mm]	SW [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-08-00	DPL 25-3 PU	M 3	22	7	11.9	25	8
1-790-10-00	DPL 25-4 PU	M 4	22	13	18.7	25	12
1-790-15-00	DPL 25-5 PU	M 5	22	13	18.7	25	13
1-790-17-00	DPL 25-6 PU	M 6	22	13	18.7	25	15
1-790-07-00	DPL 25-3 EPDM	M3	22	7	11.9	25	9

## DST / Pressure Plate

### Remarks:

- EP Coating: low-marking, see category 990
- Flock: ideal for parts to be painted (visible face)
- PTFE: reduces friction and temperature resistant up to 260°C



Part No.	Description	Material	Coating	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g]
1-790-61-00	DST 14-25 ALU EP	Aluminium	EP	14	5	25	30	25	13
1-790-62-00	DST 14-25 ALU BF	Aluminium	Flock	14	5	25	30	25	13
1-790-64-00	DST 14-25 ABS EP	ABS	EP	14	5	25	30	25	5
1-790-65-00	DST 14-25 ABS BF	ABS	Flock	14	5	25	30	25	5
1-790-69-00	DST 14-25 PTFE	PTFE	-	14	5	25	30	25	10

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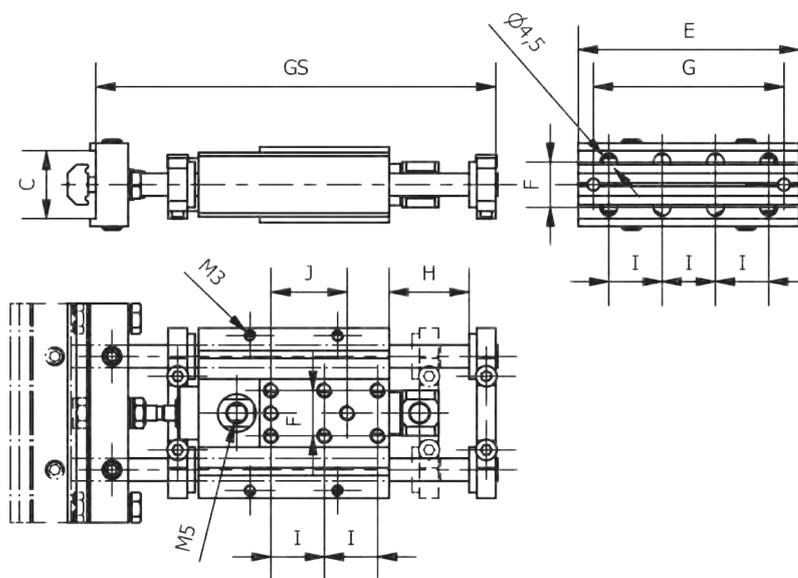
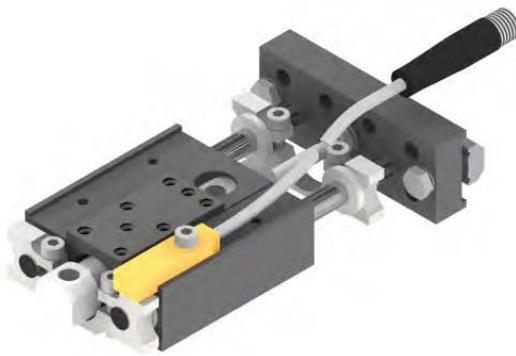
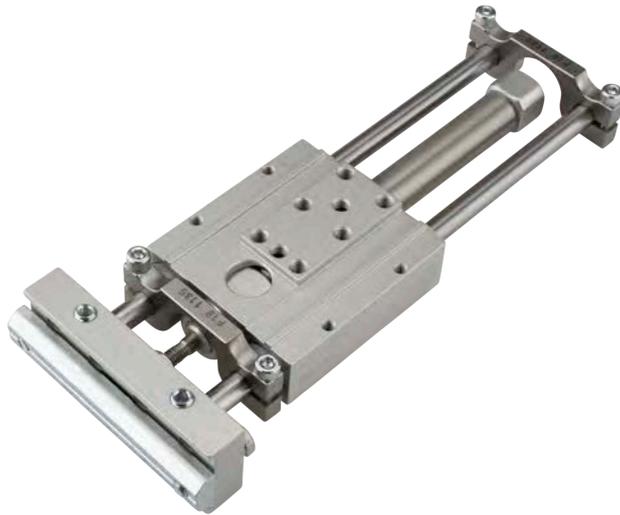
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## HEU 10 / Stroke Unit with Piston-Ø 10 mm



**Remarks:**

**Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts**

- pneumatic Stroke Unit with piston diameter 10 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Monitoring:**

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

**Accessories e.g.:**

- L Profile
- Mounting Bar DKS L 10-60
- Adapter A3 HEU 10

Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-60-00	HEU 10-15	10	98	0-15	18	22	58	12	50	14	20	229
1-752-61-00	HEU 10-60	10	143	0-60	18	22	58	12	50	14	20	264

## HEU / Stroke Unit with Piston-Ø 16 mm

### Remarks:

**Application: for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts**

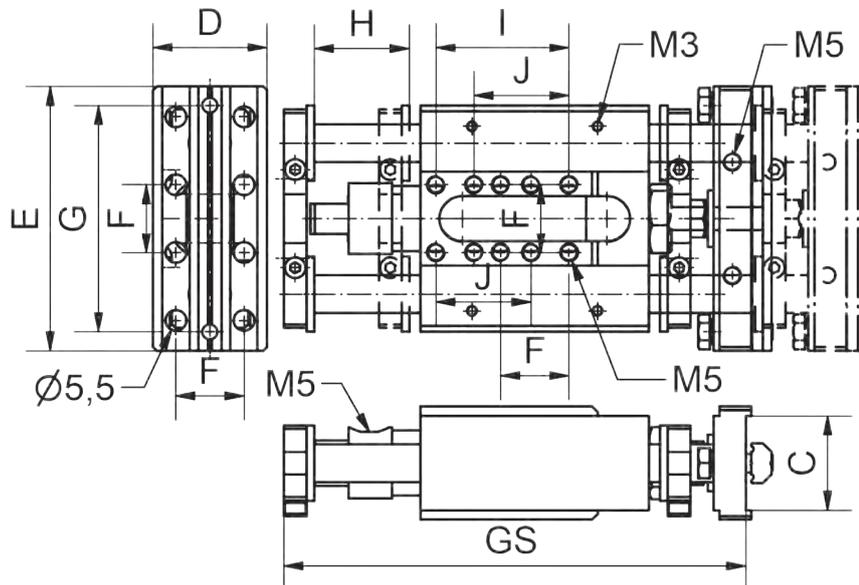
- pneumatic Stroke Unit with piston diameter 16 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

### Monitoring:

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

### Accessories e.g.:

- X-Profile
- GP-HEU 16 - adapter plate HEU
- KN-HEU 16 - adapter for 20 mm clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-01-00	HEU 16-25	16	122	0-25	25	30	70	18	60	35	25	485
1-752-00-00	HEU 16-50	16	146.5	0-50	25	30	70	18	60	35	25	526
1-752-02-00	HEU 16-80	16	176.5	0-80	25	30	70	18	60	35	25	576
1-752-03-00	HEU 16-100	16	196.5	0-100	25	30	70	18	60	35	25	608
1-752-06-00	HEU 16-125	16	221.5	0-125	25	30	70	18	60	35	25	651
1-752-09-00	HEU 16-160	16	256.5	0-160	25	30	70	18	60	35	25	710
1-752-12-00	HEU 16-200	16	296.5	0-200	25	30	70	18	60	35	25	775

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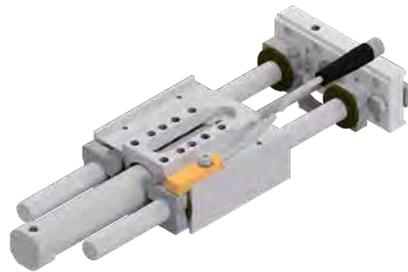
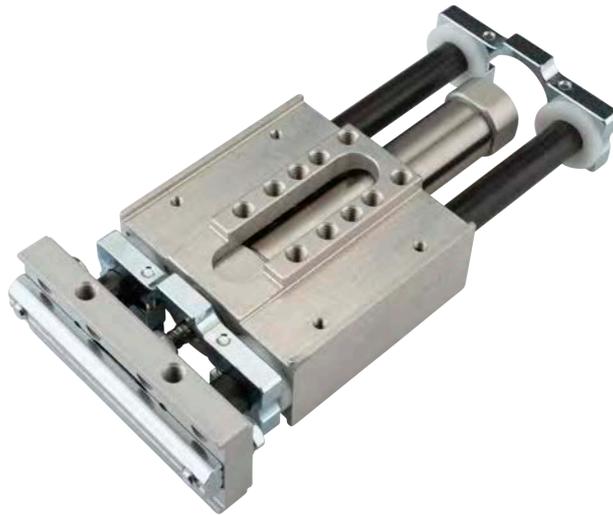
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Others

# 700 | Special Elements

## HEU L 16 / Stroke Unit Light Weight with Piston-Ø 16 mm



**Remarks:**

**Application:** for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

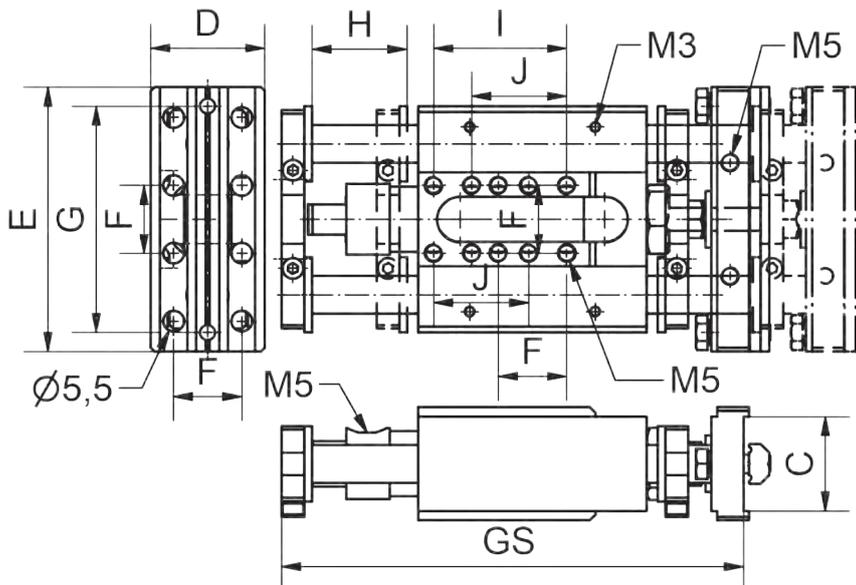
- weight reduction through Aluminium shafts and linear plastic bearings
- 30% lighter than standard stroke units (HEU) with steel shaft
- same dimensions as the HEU
- pneumatic Stroke Unit with piston diameter 16 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

**Monitoring:**

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

**Accessories e.g.:**

- X-Profile
- GP-HEU 16 - adapter plate HEU
- KN-HEU 16 - adapter for 20 mm clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	Weight [g]
1-752-40-00	HEU L 16-25	16	122	0-25	25	30	70	18	60	35	25	368
1-752-43-00	HEU L 16-50	16	146.5	0-50	25	30	70	18	60	35	25	391
1-752-46-00	HEU L 16-80	16	176.5	0-80	25	30	70	18	60	35	25	414
1-752-49-00	HEU L 16-100	16	196.5	0-100	25	30	70	18	60	35	25	435

## HEU 20 / Stroke Unit with Piston-Ø 20 mm

**Remarks:**

**Application:** for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

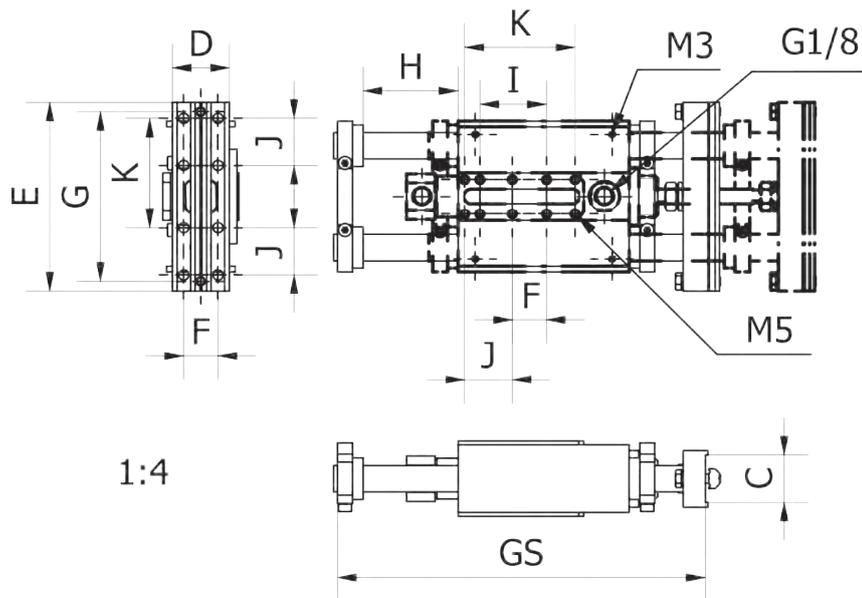
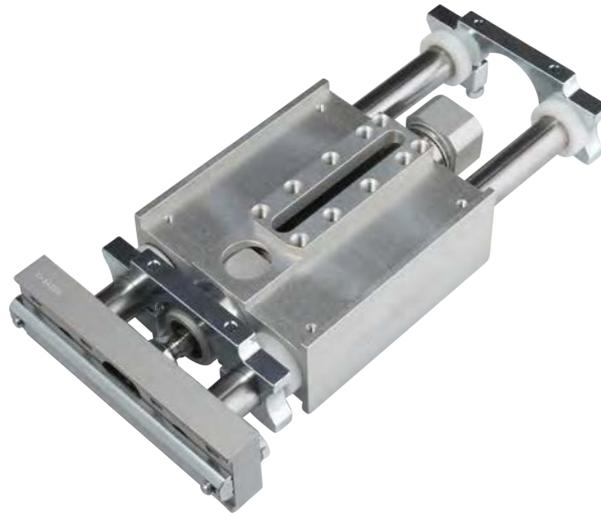
- pneumatic Stroke Unit with piston diameter 20 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
- » maximum air pressure is 6 bar, use dry and filtered air only

**Monitoring:**

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

**Accessories e.g.:**

- X-Profile
- GP-HEU 20 - adapter plate HEU
- KN-HEU 16 - adapter for clamps
- AE-HEU 16 - adapter HEU
- AU-HEU 16 - adapter HEU
- AP-HEU 16 - adapter HEU



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	J [mm]	K [mm]	Weight [g]
1-752-70-00	HEU 20-50	20	193,5	0-50	25	30	100	18	90	35	25	58	1284
1-752-71-00	HEU 20-100	20	243,5	0-100	25	30	100	18	90	35	25	58	1421

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HEU 25 / Stroke Unit with Piston-Ø 25 mm



**Remarks:**

**Application:** for delivery of various components - numerous mounting accessories allow various applications such as positioning textiles or demoulding parts

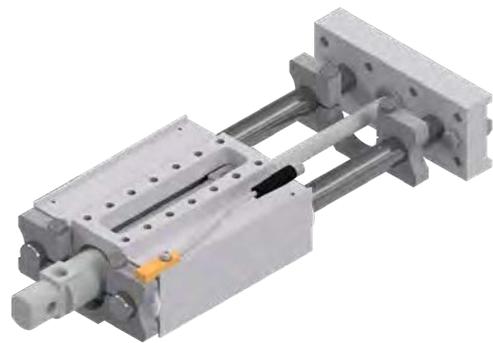
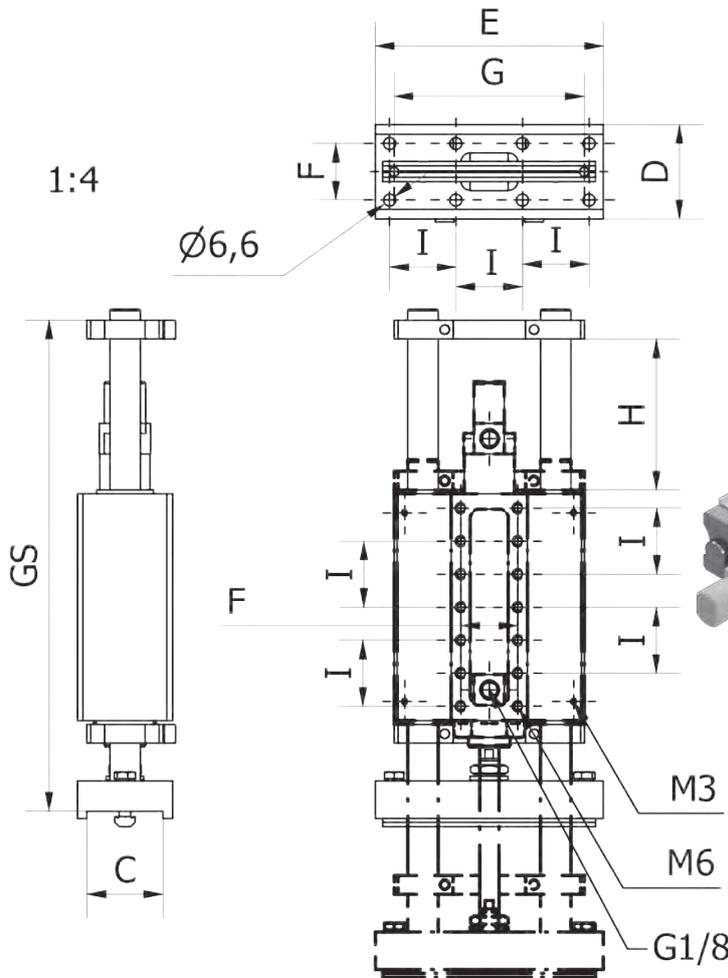
- pneumatic Stroke Unit with piston diameter 25 mm (double-acting)
- one cylinder and two guides
- Stroke Unit can absorb lateral forces and moments
- stroke infinitely adjustable
  - » maximum air pressure is 6 bar, use dry and filtered air only

**Monitoring:**

- monitoring of end positions (inductive) with IEK 8 or IES 8
- » see small application example

**Accessories e.g.:**

- JU-Profile
- GP-HEU 25 - adapter plate HEU
- AE-HEU 25
- AU-HEU 25
- AP-HEU 25



Part No.	Description	Piston Ø [mm]	GS [mm]	Stroke H [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	I [mm]	Weight [g]
1-752-20-00	HEU 25-80	25	260	0-80	40	50	120	30	100	35	2683
1-752-21-00	HEU 25-100	25	280	0-100	40	50	120	30	100	35	2767
1-752-22-00	HEU 25-160	25	340	0-160	40	50	120	30	100	35	3027
1-752-24-00	HEU 25-200	25	380	0-200	40	50	120	30	100	35	3195

## GP HEU / Adapter Plate for Stroke Unit

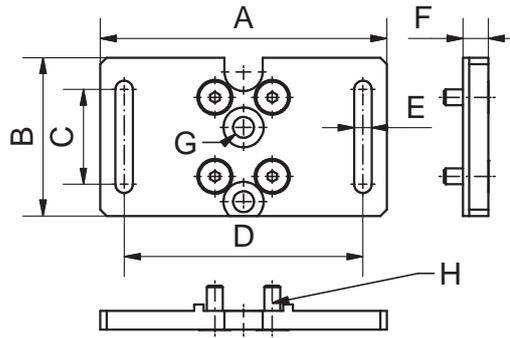
**Remarks:**

**Application:** this adapter plate connects stroke units HEU directly to profiles

» see application examples for mounting example

**Scope of delivery:**

- incl. mounting material



1-753-06-00



1-753-15-00



1-753-27-00



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Material	Weight [g]
1-753-06-00	GP HEU 16	90	50	30	75	5.5	8	6.6	M5x14	Aluminium	73
<b>New</b> 1-753-15-00	GP HEU 20	110	60	45	96	5,5	8	6,6	M5x12	Aluminium	117
1-753-27-00	GP HEU 25	140	90	60	120	6.6	15	6.6	M6x14	Aluminium	312

## KN HEU / Mounting Adapter for Needle Gripper on Stroke Units

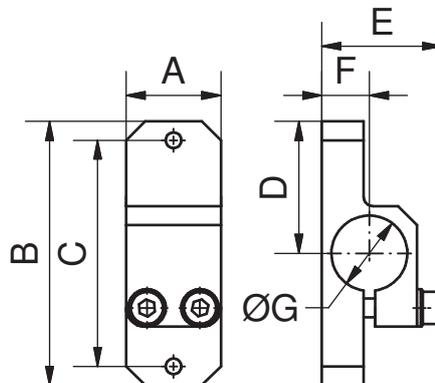
**Remarks:**

**Application:** e.g. for mounting other components such as needle grippers to the HEU stroke units

- can be mounted directly to the stroke unit
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Material	Weight [g]
1-753-08-00	KN HEU 16	25	70	60	35	31.6	12.5	20	Aluminium	67

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Channel Nuts

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Clamps

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Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

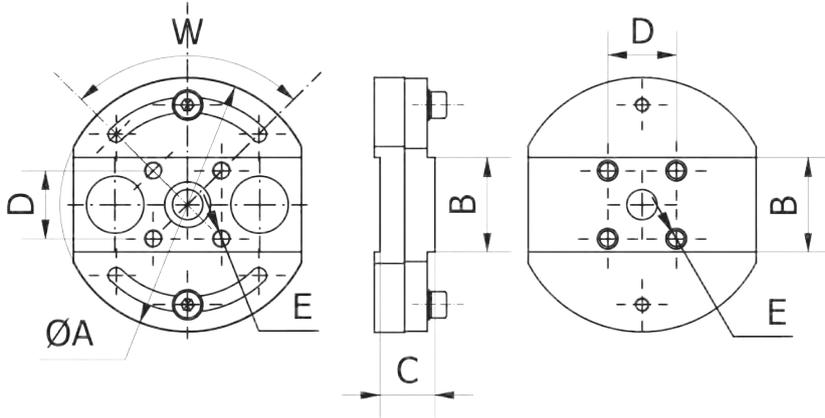
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## HEU 16 A XY / Adapter for XY-Stroke Unit



**Remarks:**

**Application:** e.g. for even more flexibility in pick-and-place robot hands (material injection)

- easy to assemble and space-saving design
- two HEU 16 can be adapted to an XY stroke unit
- angle of the X-stroke can be infinitely adjusted by an integrated centering +/- 45 °
- both stroke units are connected positively and form locking to the adapter
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material

Artikelnr.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	W [°]	Weight [g]
1-753-12-00	HEU 16 A XY	67	25	14,5	18	M5	+/- 45	159

## AE HEU / Mounting Adapter for HEU Stroke Unit



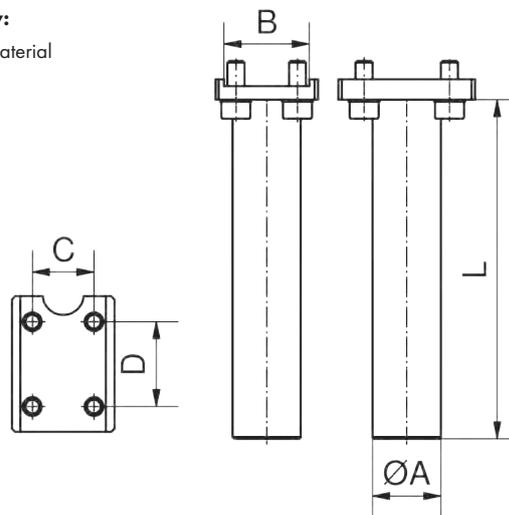
**Remarks:**

**Application:** e.g. for flexible mounting of stroke units

- adapter is mounted form-fitting on the body of the HEU and offers various adjustment options
- this adapter fits all HEU and HEU L stroke units
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material



Artikelnr.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-753-03-00	AE 20 - 100 HEU 16	20	25	18	25	100	Aluminium	65
1-753-23-00	AE 30 - 80 HEU 25	30	40	30	35	80	Aluminium	133

## AU HEU / Mounting Adapter for HEU Stroke Unit

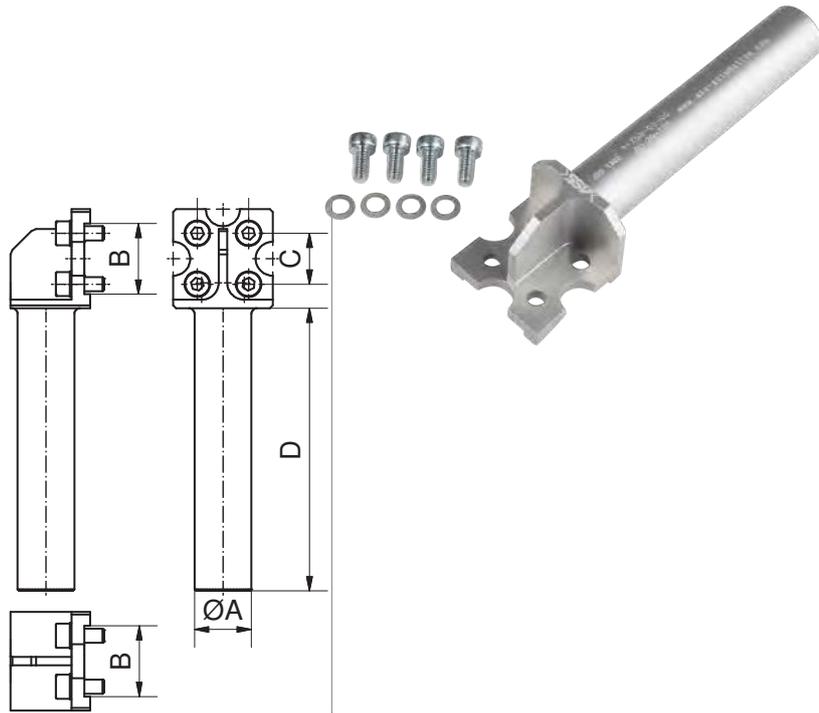
**Remarks:**

**Application:** e.g. for flexible mounting of HEU Stroke Units

- Adapter can be mounted lengthwise or crosswise (90 °) to the axis of the stroke unit with form locking
- clamping diameter allow several mounting options
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-753-00-00	AU 20 - 100 HEU 16	20	25	18	100	Aluminium	72
1-753-22-00	AU 30 - 80 HEU 25	30	40	30	80	Aluminium	324

## AP HEU / Mounting Adapter for Stroke Units to a Profiles

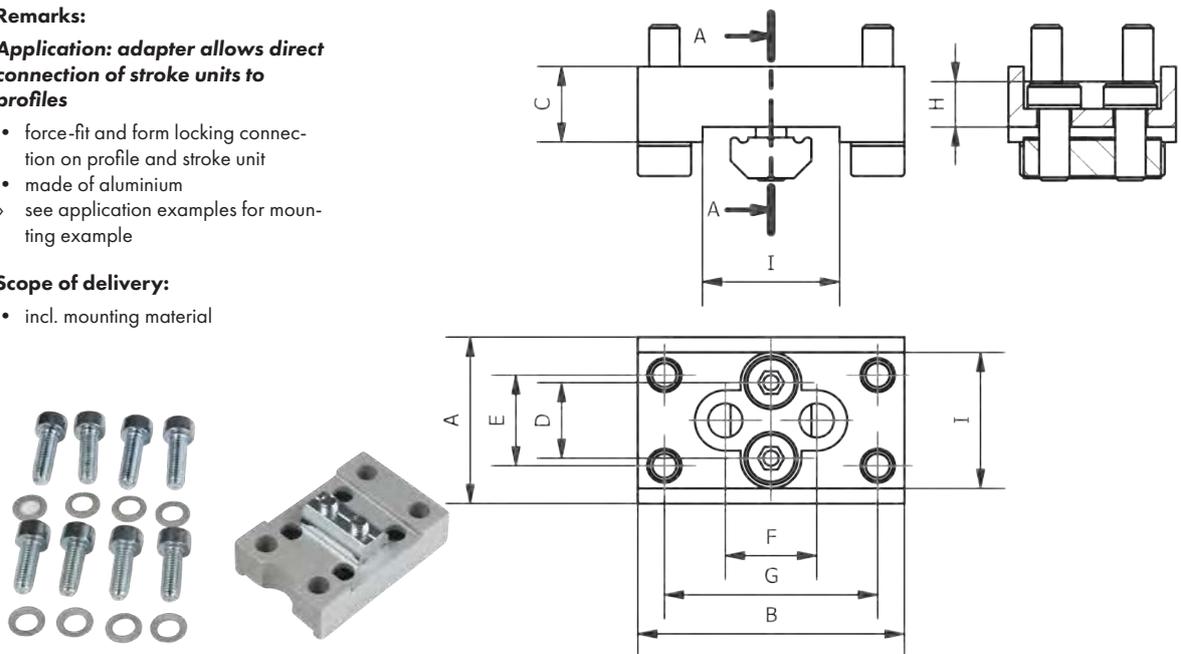
**Remarks:**

**Application:** adapter allows direct connection of stroke units to profiles

- force-fit and form locking connection on profile and stroke unit
- made of aluminium
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Dimension I form locking to profile	Weight [g]
1-753-40-00	AP HEU 10	22	35	10	10	12	10	28	6	18	L 18-10 or L 18-18	23
1-753-10-00	AP HEU 16	30	45	12	10	18	18	35	8	25	X 25-25 or X 50-25	64
1-753-20-00	AP HEU 25	30	120	20	-	30	32	105	11	25	X 25-25 or X 50-25	314

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
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**300**  
Gripper Arms

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Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## A3 HEU 10 / Mounting Adapter for HEU 10 with 3 Mounting Options



**Remarks:**

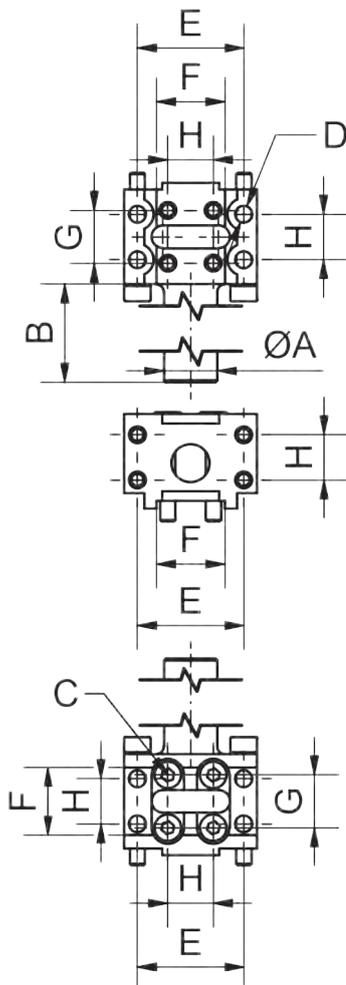
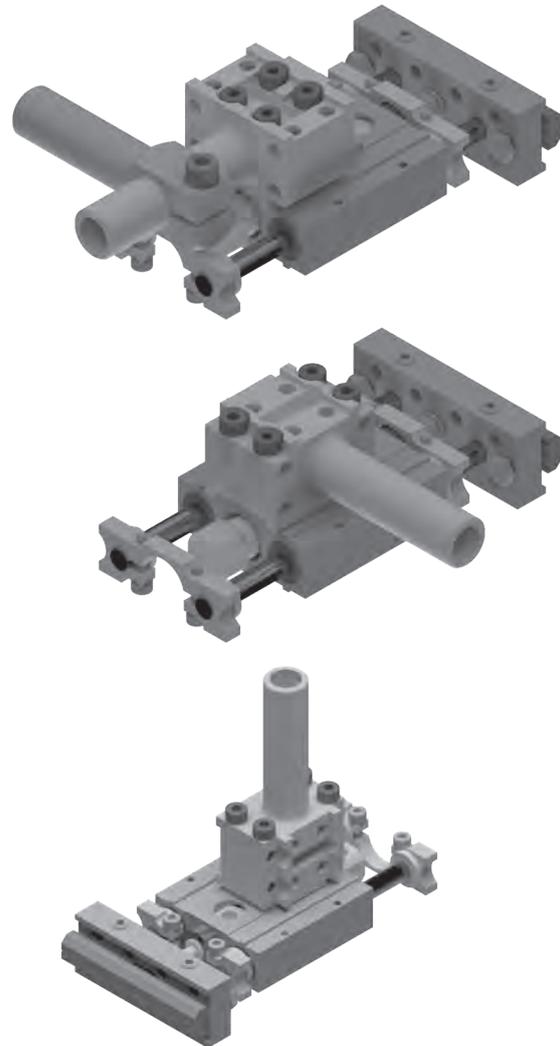
**Application: for more flexible assembly options of stroke units HEU 10**

- clamping can be placed in all three axes, see application examples
- clamping diameter allow several mounting options
- » see application examples for mounting example

**Scope of delivery:**

- incl. mounting material

Application examples



Part No.	Description	A Ø [mm]	B [mm]	C [mm]	D Ø [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Material	Weight [g]
1-753-41-00	A3 HEU 10	14	50	M4	4,5	28	18	14	12	Aluminium	74

## ADU / Universal Mounting Bracket

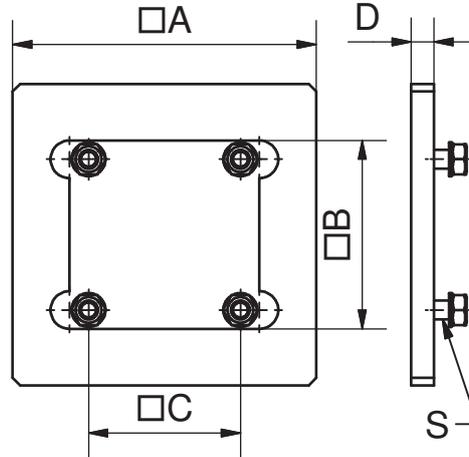
**Remarks:**

**Application:** active elements (e.g. stroke units, rotating units, grippers, etc.) can be mounted and integrated into the EOAT

- » individual hole pattern needed
- » see application examples

**Accessories e.g.:**

- Adapter AP ADU



Part No.	Description	A [mm]	B [mm]	C [mm]	S	D [mm]	Material	Weight [g]
1-437-00-00	ADU 60	60	40	30	M4x12	5	Aluminium	49
1-437-03-00	ADU 80	80	50	40	M5x14	6	Aluminium	106
1-437-06-00	ADU 120	120	60	50	M6x16	6	Aluminium	232

## AP ADU / Flange for Adapter Plate ADU

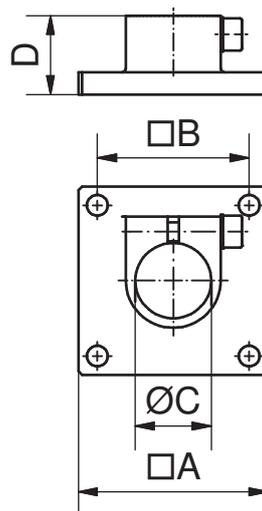
**Remarks:**

**Application:** with this flange plate e.g. the adapter plate ADU can be connected to an extension tube VLR

- » see application examples

**Accessories e.g.:**

- Adapter Plate ADU
- Extension Tube VLR



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-436-80-00	AP ADU 60	40	30	14	17	Aluminium	24
1-436-83-00	AP ADU 80	50	40	20	21	Aluminium	50
1-436-86-00	AP ADU 120	60	50	30	25	Aluminium	83

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Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Manifold

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Adapters for  
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**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

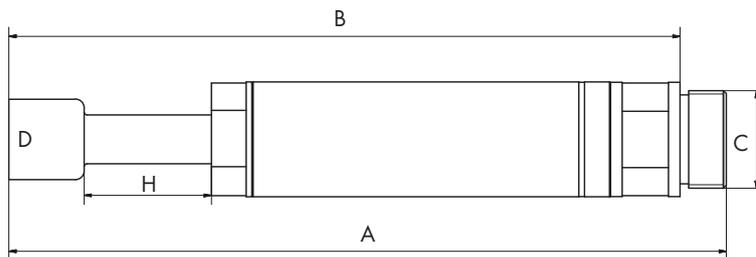
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## VHE 20 / Vacuum-Stroke Unit

### VHE 20 VG / Vacuum-Stroke Unit, non-rotating



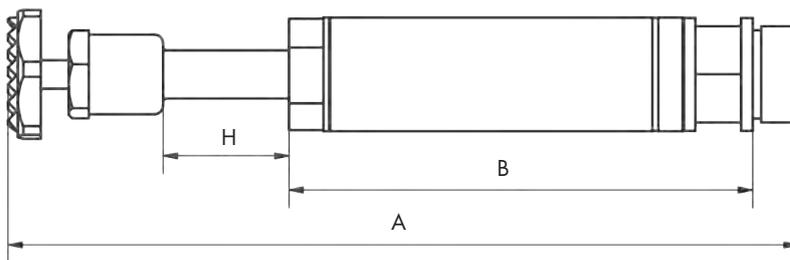
Part No.	Description	A [mm]	B [mm]	C [mm]	D Air Connection	Stroke H [mm]	Material	Weight [g]	
1-775-00-00	VHE 20	124	116	M17x1	1/8"	20	48		
1-775-00-00-1	VHE 20 VG	124	116	M17x1	1/8"	20	20	48	<b>New</b>

**Remarks:**

**Application: e.g. for extracting of layers**

- VG = non-rotating version
- two functions:
  1. suction
  2. back stroke
- just one vacuum circle needed
- clamp diameter 20mm
- spring-loaded slipping forward
- return stroke by pressure difference
- holding force is depending on vacuum and diameter of vacuum cup
- return stroke depends on the vacuum level
  - » maximum air pressure is 6 bar, use dry and filtered air only
  - » see application example

## SF 20 / Stacking Guide



Part No.	Description	A [mm]	B [mm]	Stroke H [mm]	Material	Weight [g]
1-771-00-00	SF 20	138	81	20	20	68

**Remarks:**

**Application: e.g. for „probing“ on tool (ejector side) or magazine**

- increases the security of the robot hand
- for precise work
- easy to use
- clamping diameter 20mm

**Accessories:**

- Sensor MFS T2 (Part No. 1808-30-00)
- Sensor Bracket GRF SH 20 AL

## SFP / Stacking Guide Specific

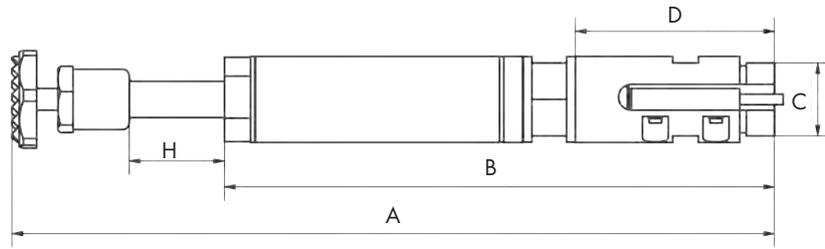
### Bemerkungen:

**Application:** e.g. for monitored „probing“ on tool (ejector side) or magazine

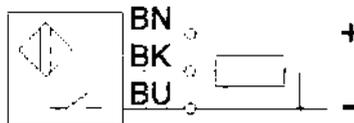
- inductive monitoring
- increases the safety of the robot hand
- sensor (3-pin, with 2m cable) included
- for precise work
- easy to use
- clamp diameter 20mm
- up to three positions can be monitored:
  - 1x via inductive sensor (included)
  - 2x via magnetic field sensor (see accessories)
- » endurance test: two million cycles completed without any error
- » see application example

### Accessories:

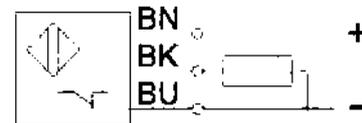
- Sensor MFS T2 (Part No. 1-808-30-00)
- Sensor Bracket GRF SH 20 AL



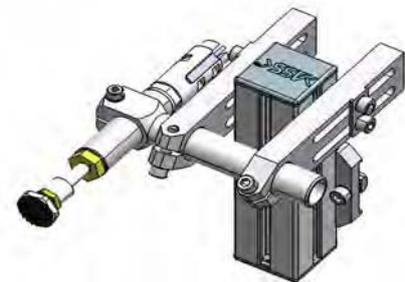
Normally opened:



Normally closed:



Application example:  
Stacking Guide with additional sensors



Application example:  
Robot hand with integrated Stacking Guide

Part No.	Description	A [mm]	B [mm]	C	D [mm]	Stroke H [mm]	Electrical contacts	Weight [g]
1-770-00-00	SFP 20	176	127	M17x1	46	20	normally opened	129
1-772-00-00	SFP 20 NC	176	127	M17x1	46	20	normally closed	129

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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Vacuum Cup  
Connectors

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Vacuum Cups

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Special  
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Vacuum Cups

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Gripper Arms

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Gripper  
Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

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Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 700 | Special Elements

## ZTE V / Docking Finger, Pneumatic



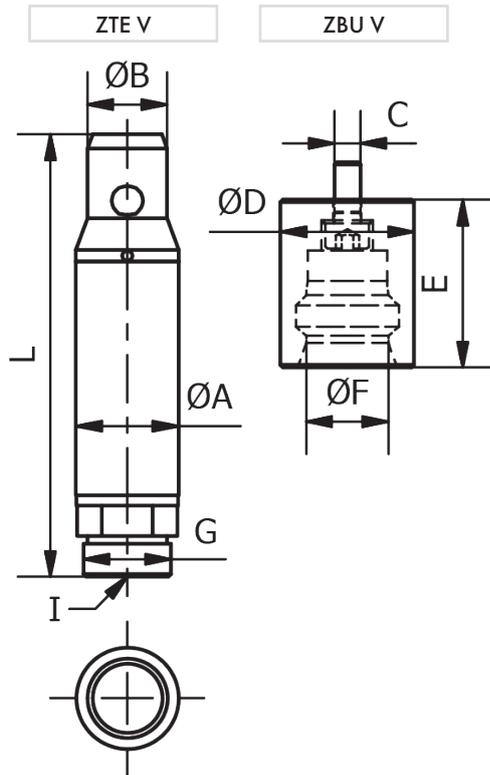
**Remarks:**

**Application: e.g. for safe and positionally accurate centering of the EOAT in the tool**

- for absolute accuracy
- high holding force
- powerful, pneumatic centering unit (ZTE V + ZBU V)
- compact design
- use H7-tolerance for inserting ZBU V into tool
- with a teachable sensor, the locked and unlocked position can be monitored
- single-acting
  - » maximum air pressure is 6 bar, use dry and filtered air only
  - » see application example

**Accessories:**

- Docking Connector ZBU V
- Sensor MFS T2 (Part No. 1-808-30-00)
- Sensor Bracket GRF SH AL



### ZTE V / Docking Finger

Part No.	Description	A [mm]	B [mm]	L [mm]	I ["]	G [mm]	holding force at 6 bar [N]	Weight [g]
1-747-20-00	ZTE 20 V	20	15.5	91	G1/8	M17x1	750	81
1-747-30-00	ZTE 30 V	30	25.5	133.5	G1/8	M27x1	1500	314

### ZBU V / Docking Connector

Part No.	Description	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-747-21-00	ZBU 20 V	M5	26h7	33	16	91
1-747-31-00	ZBU 30 V	M6	40h7	43,5	26	267

**App. example GGE-F + LES-6**



**Application example LRS-18**



**Application example SH**



**App. example SEO-10 + GEO-10**



**Application example KK**



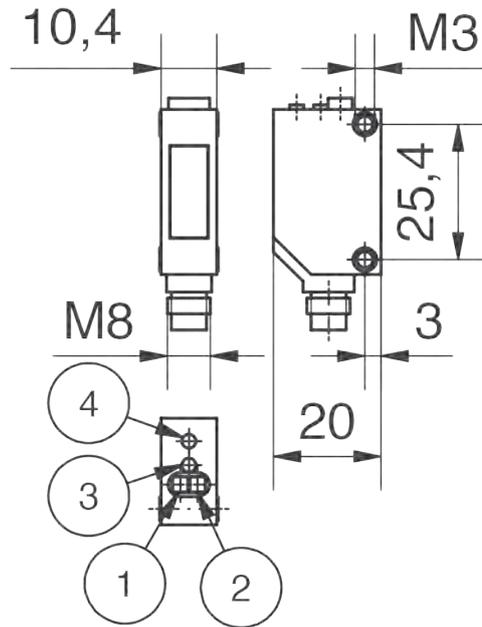
**Application example RPLG**



- 000**  
Quick Change Systems
- 050**  
Profiles  
Channel Nuts
- 100/115**  
Clamps
- 120**  
Profile  
Connectors
- 190**  
Profile  
Accessories
- 200**  
Vacuum Cup  
Connectors
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Vacuum Cups
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Special  
Vacuum Cups
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Manifold
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Adapters for  
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- 300**  
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Parallel Gripper
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Special Elements
- 800**  
Electrics and  
Sensors
- 850**  
Pneumatics
- 990**  
Tubular System  
Micro System
- 990**  
PA-Forming  
Others

# 800 | Electrics and Sensors

## LES 6 / Photoelectric Sensor - Compact



**Remarks:**

- optical part present control
- with plug connection
- connection M8x1, 4-pin
- NPN version on demand

**Drawing:**

- 1 status (orange)
- 2 ready (green)
- 3 sensitivity adjustment
- 4 switch light/dark

**Scope of Delivery:**

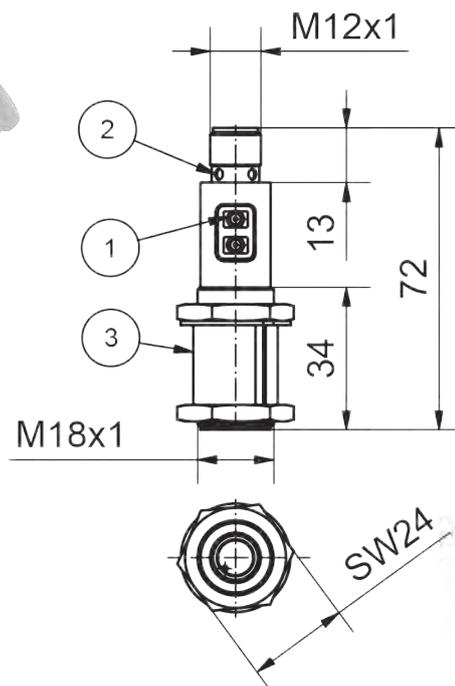
- without cable

**Accessories e.g.:**

- Gripper Arms for Sensor GGE 14 F
- connector with cable KG 8-4
- elbow connector KW 8-4

Part No.	Description	U [V] DC	I [mA] DC	Range [mm]	Output	Weight [g]
1-802-02-00-1	LES 6	10-36	200	20-1000	PNP	21

## LRS 18 / Photoelectric Sensor - Cylindric



**Remarks:**

- optical part present control
- mounting diameter 20mm
- connection M12 4-pin

**Drawing:**

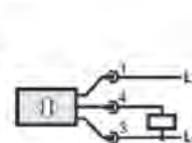
- 1 LED program button
- 2 LED 4x90 detection
- 3 sleeve (RMB sleeve Ø 20 mm Part No. 1-116-00-05)

**Scope of Delivery:**

- without cable

**Accessories e.g.:**

- connector with cable KG 18
- elbow connector KW 18



Part No.	Description	U [V] DC	I [mA] DC	Range [mm]	Output	Switch type	Weight [g]
1-802-04-00	LRS 18	10-24	200	2-800	PNP	Light or Dark	48

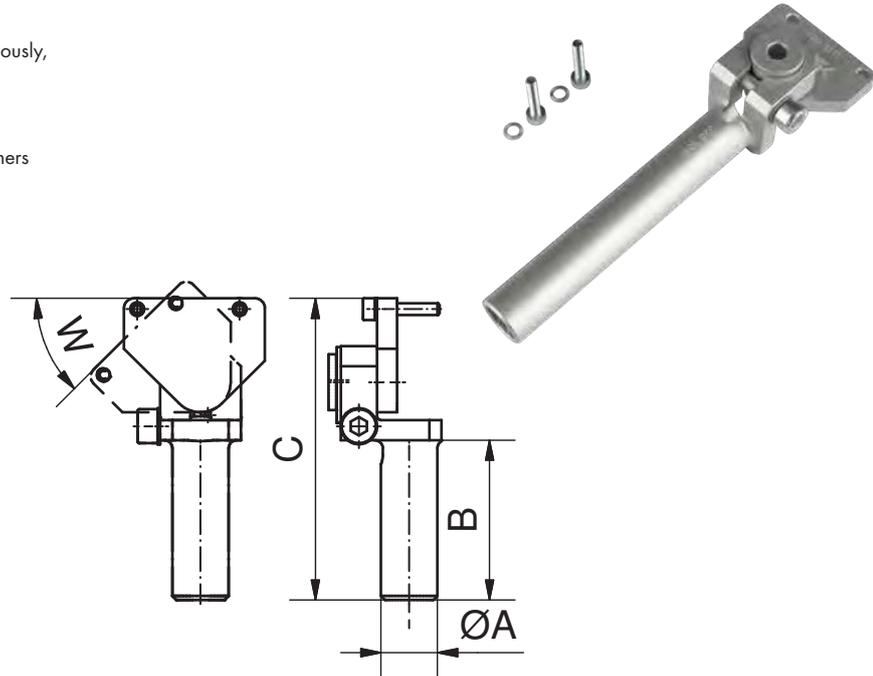
## GGE 14...F / Gripper Arm for Photoelectric Sensor LES - 6

**Remarks:**

- sensor can be adjusted continuously, at any angle W, see table

**Scope of Delivery:**

- including screws and lock washers
- LES 6 not included

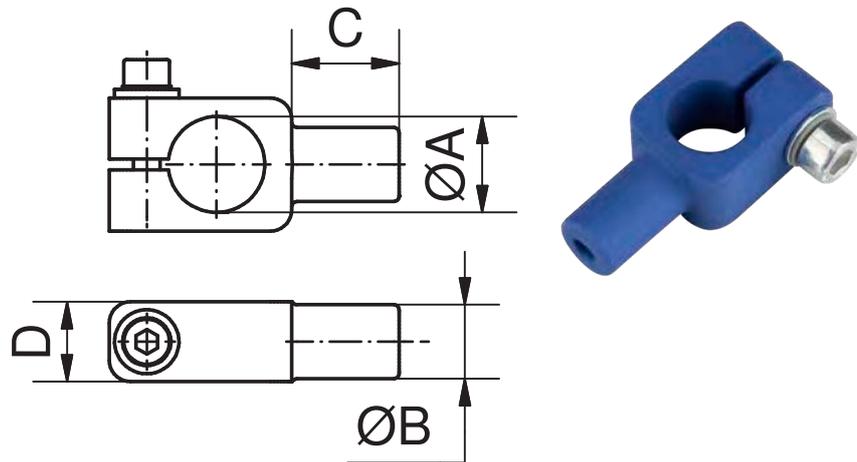


Part No.	Description	A [mm]	B [mm]	C [mm]	W [°]	Material	Weight [g]
1-315-60-00	GGE 14-40 F	14	40	75.5	+/- 45	Aluminium	38
1-315-63-00	GGE 14-80 F	14	80	117.5	+/- 45	Aluminium	46
1-315-66-00	GGE 14-120 F	14	120	155.5	+/- 45	Aluminium	54

## SH / Sensor Bracket for round sensors

**Remarks:**

- made with of Polyamide
- » custom design on request



Part No.	Description	for sensor Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-804-02-00	SH4-10	4	4	10	16	12	Polyamide	6
1-804-03-00	SH5-10	5	5	10	16	12	Polyamide	6
1-804-04-00	SH6.5-10	6.5	6.5	10	16	12	Polyamide	6
1-804-05-00	SH8-10	8	8	10	16	12	Polyamide	7
1-804-06-00	SH12-10	12	12	10	16	13	Polyamide	10
1-804-07-00	SH18-14	18	18	14	20	15	Polyamide	16
1-804-08-00	SH20-14	20	20	14	20	15	Polyamide	20
1-804-09-00	SH30-20	30	30	20	26	20	Polyamide	36

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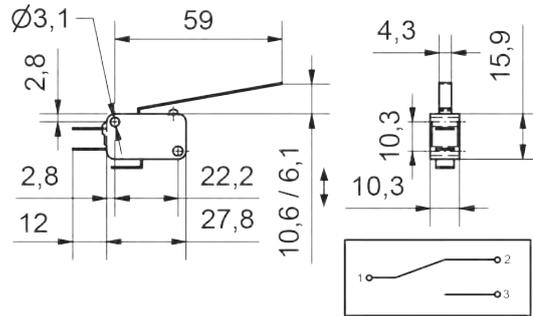
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## SEO 5 / Mechanical Switch without Cable



**Remarks:**

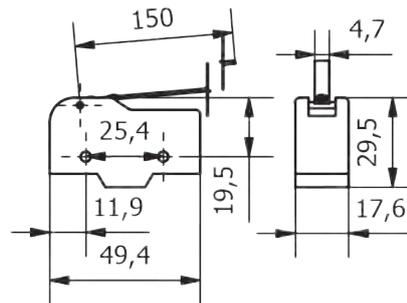
- changeover switch with switching flag
- 3 plug connections for cable lugs

**Scope of Delivery:**

- switch without cable

Part No.	Description	U [V] DC	I [A] DC	Weight [g]
1-806-02-00	SEO 5	24	1	7

## SEO 10 / Mechanical Switch without Cable



**Remarks:**

- changeover switch with switching flag
- 3 screw connections

**Scope of Delivery:**

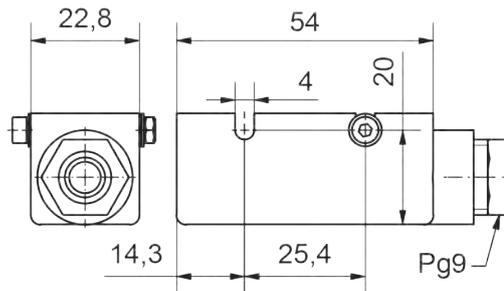
- switch without cable

**Accessories e.g.:**

- housing GEO 10

Part No.	Description	U [V] DC	I [A] DC	Weight [g]
1-806-04-00	SEO 10	24	1	40

## GEO 10 / Housing for Mechanical Switch SEO 10



**Remarks:**

- SEO 10 can be mounted using the GEO 10 housing
- » see application examples

**Scope of Delivery:**

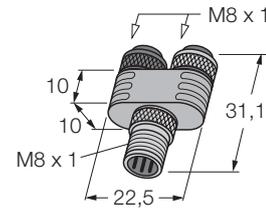
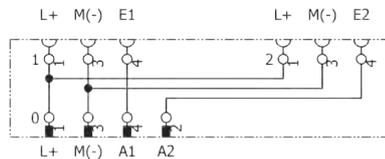
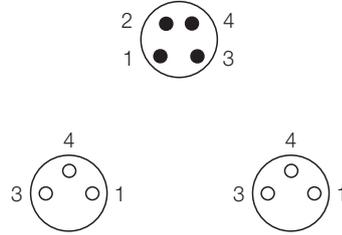
- including screws

Part No.	Description	Weight [g]
1-806-06-00	GEO 10	19

## VTY / Splitter Y-Form

### Remarks:

- 2 way splitter in Y-form, screw-on
- 1 x male, 4-pins, M8x1 (plug with external thread), straight
- 2 x female, 3-pins, M8x1 (union nut with internal thread), straight
- space saving
- up to 12 inputs in 1 EVM 8-6-4
- » see application example

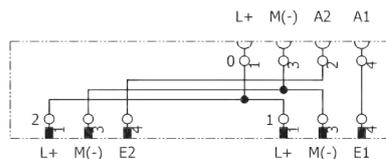
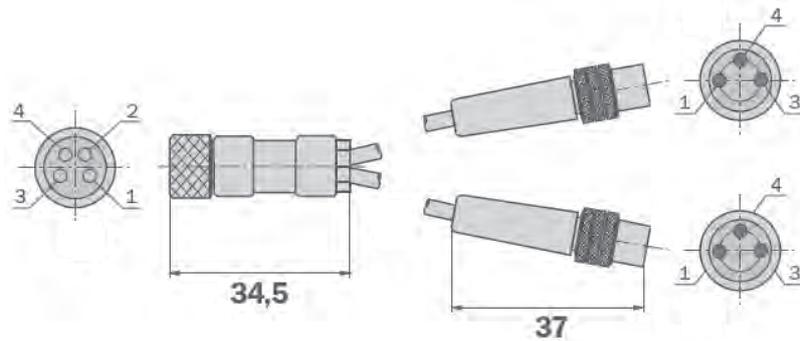


Part No.	Description	Wire	Thread	compatible with	Weight [g]
1-803-15-00	VTY-4-3-3	4-2x3	M8x1	EVM-8-6-4	10

## ASY / Adapter Y-Form

### Remarks:

- Y-adapter with one female socket connector (4 pins) and two male plug connectors (3 pins)
- 1 x M8 4-pin female, socket
- 2 x M8 3-pin male, plug
- the signals of a sensor (4-pin) with two output signals can be divided into two individual signals (3-pin), e.g. MFS T2 3.7



Part No.	Description	Cable length [mm]	Thread	Number of pins female	Number of pins male	Weight [g]
1-803-16-00	ASY-3-3-4	250	M8	1x4	2x3	30

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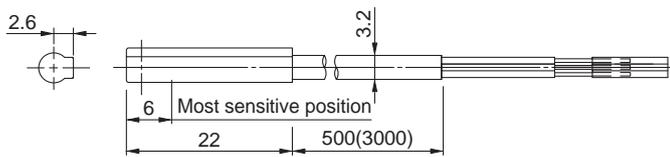
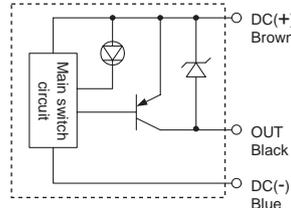
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# 800 | Electrics and Sensors

## ICS 8 / Sensor, C-Nut, Plug, M8



### Remarks:

- 3-pin proximity switch for monitoring an end-position at short stroke cylinders
- suitable for C-nut
- connection M8 3-pin
- suitable for e.g.:
  - Short Stroke Cylinder KHZ
  - Special Cylinder SZD
  - Grippers with Stroke HUZ / HUP P
  - Sliding Units HUE

### Accessories e.g.:

- connector KG 8-3

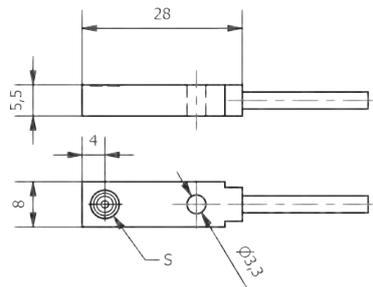
Part No.	Description	U [V] DC	function	Cable length [m]	Output	Weight [g]
1-808-36-00	ICS 8	4,5 - 28	Closer	0,5	PNP	11
1-808-37-00	ICS 8 NPN	4,5 - 28	Closer	0,5	NPN	11

## IEK 8 / IES 8 / Sensor

IEK 8 (with cable)



IES 8 (with plug)



### Remarks:

- inductive proximity switch
- sensor is used e.g. for standard monitoring on ASS grippers (GRZ 20-16, GRZ 32, GRZ 10-12) and stroke units (HEU / HEU-L)
- PNP and NPN switching available
- Initiator can be fixed with an M3 screw
- connection M8 3-pin

### Drawing:

- S sensor

### Scope of delivery:

- M3 hexagon socket screw not included

Part No.	Description	Cable length [mm]	Plug	Output	U [V] DC	I [mA] DC	Number of pins	Weight [g]
1-808-12-00	IEK 8 PNP	3000		PNP	10-30	150	3	32
1-808-14-00	IEK 8 NPN	3000		NPN	10-30	150	3	32
1-808-16-00	IES 8 PNP	160	x	PNP	10-30	150	3	6
1-808-18-00	IES 8 NPN	160	x	NPN	10-30	150	3	6

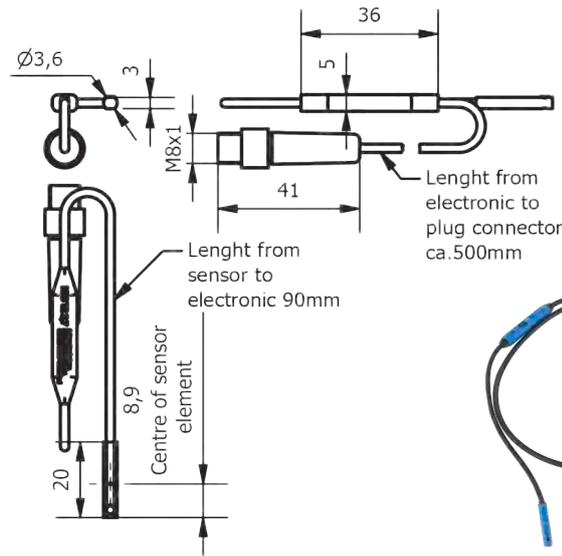
## MFS T2 3,7 / Sensor with two Acting Points „Teachable“

### Remarks:

- 2 teach points / acquisition of 2 end positions
- depending on magnetic field, stroke up to 50 mm ascertainable
- compact configuration
- easy clamping with stud screw
- for roundslot-cylinders, gripper fingers and other actuators

### Accessories e.g.:

- Connector KG 8-4
- Sensor Bracket GRF SH
- Adapter ASY



Part No.	Description	Ambient temperature [°C]	Output	U [V] DC	I [mA] DC	Number of pins	Weight [g]
1-808-30-00	MFS T2 3,7	-20 up to +75	PNP	12-30	100	4	11

## IRK 4 / Proximity Switch for Parallel Gripper PGR-P and PGR

### Remarks:

- inductive proximity switch with a 0.8/1.0 mm range
- it senses the open/close positions of gripper jaws
- » IRK 4 suitable for:
  - PGR-P/PGR 32, 40, 50, 64
- » IRK 4.4 suitable for:
  - PGR 20, 25
- » see chapter 400



Part No.	Description	A [mm]	B [mm]	Z [mm]	U [V] DC	Switching function	Cable length [m]	Pins	Output	Weight [g]
1-808-02-00	IRK 4	4	25	0.8	24	Closer	2	3	PNP	30
1-808-03-00	IRK 4.4	4	15,2	1,0	24	Closer	2	3	PNP	21

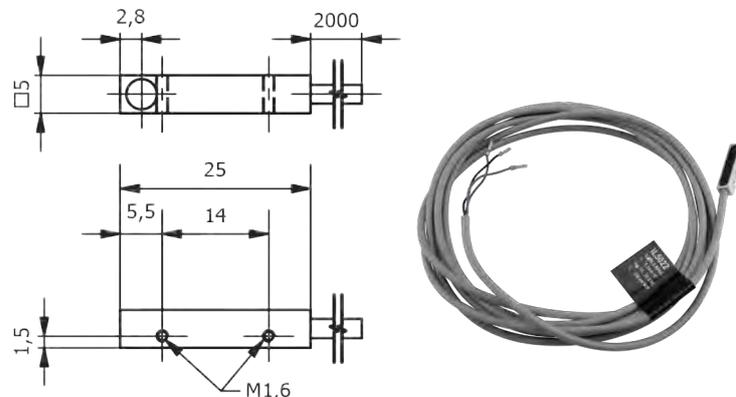
## IE AL K / Proximity Switch

### Remarks:

- inductive proximity switch with a 0.8mm range
- e.g. is used for monitoring tasks with parallel grippers (PGR-P) and Stacking Guide (SFP)
- particularly compact rectangular design for usage in confined spaces
- compact design
- good visibility of signals
- high switching frequency

### Scope of Delivery:

- 1 x sensor
- 2 x slotted screw M1.6x10



Part No.	Description	I [mA] DC	U [V] DC	Switching function	Cable length [m]	Pins	Output	Weight [g]
1-808-38-00	IE AL K	100	10-30	Closer	2	3	PNP	28
1-808-39-00	IE AL K NPN	100	10-30	Closer	2	3	NPN	28

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# 800 | Electrics and Sensors

## KK / Junction Box

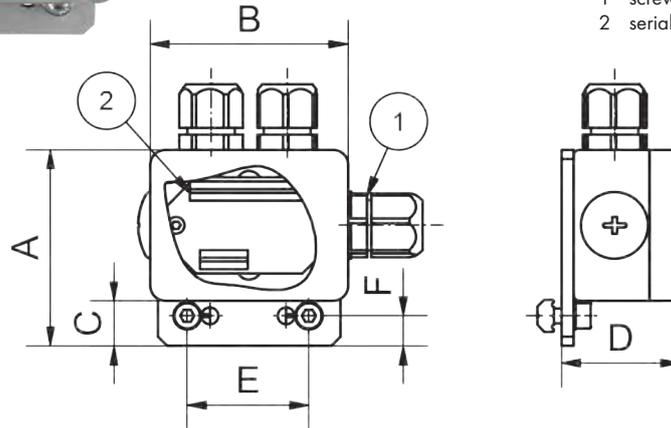


**Remarks:**

- this compact junction box is for connecting up to 4 sensors in a series or individually (observe manufacturer instructions of the sensor!)
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)

**Drawing:**

- 1 screwed connections
- 2 serial terminals



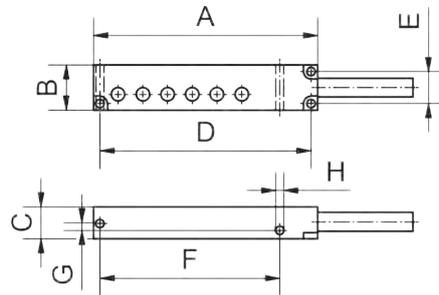
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Number of electric terminals	Number of insertion	Weight [g]
1-805-20-00	KK 1	65	65	16	38.9	40	10	9	3	140

## EVM / Bus Module



**Remarks:**

- passive distributor
- 4, 6, 8, 10 or 12 inputs
- for connecting initiators or part controls
- flexible cable
- with M8 3-pin connections
- » Expection: EVM 8-6-4 M8 4-pin

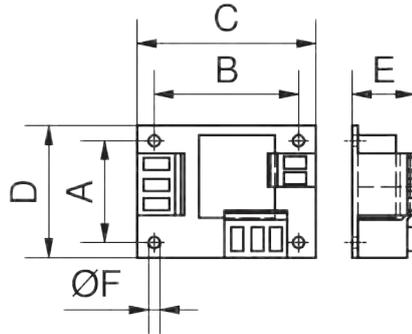


Part No.	Description	Number of inputs	3-pin	4-pin	Cable length [m]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Weight [g]
1-808-20-00	EVM 8-4	4	x		10	92	24	17	85	17	68.5	4.1	4.3	624
1-808-22-00	EVM 8-6	6	x		10	118	24	17	111	17	94.6	4.1	4.3	787
1-808-24-00	EVM 8-8	8	x		10	144	24	17	138	17	121.5	4.1	4.3	872
1-808-26-00	EVM 8-10	10	x		10	170	24	17	163	17	146.5	4.1	4.3	963
1-808-28-00	EVM 8-12	12	x		10	196	24	17	189	17	172	4.1	4.3	1031
1-808-42-00	EVM 8-6-4	6		x	5	118	24	17	110	17	93.5	4.1	4.3	776

## RPL / Relay Board

### Remarks:

- for summarizing signals
- voltage 22–24V
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)
- 2 exits
- 1 output sum signal
- 1 output < 1



Part No.	Description	Number of inputs	Number of Outputs	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-805-02-00	RPL 2	2	2	27	38	47	37	20	3	22
1-805-04-00	RPL 4	4	2	38	48	47	57	20	3	39
1-805-06-00	RPL 6	6	2	38	69	47	80	20	3	57
1-805-08-00	RPL 8	8	2	38	90	47	100	20	3	74

## RPLG / Relay Board with Enclosure

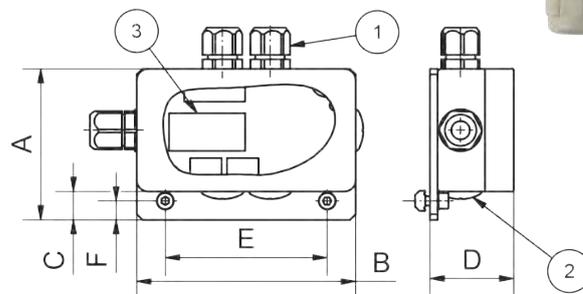
### Remarks:

- for summarizing signals
- voltage 22–24V
- PNP switching, also suitable for NPN
- for NPN, simply swap the supply voltage (+/-)
- 2 exits
- 1 output sum signal
- 1 output < 1



### Drawing:

- 1 cable insertion
- 2 blind plug
- 3 relays



Part No.	Description	Number of inputs	Number of Outputs	Number of cable entries	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [g]
1-805-10-00	RPLG 2	2	2	3	65	65	15	40	25	10	148
1-805-12-00	RPLG 4	4	2	5	80	115	15	44	85	10	318
1-805-14-00	RPLG 6	6	2	7	80	115	15	44	85	10	346
1-805-16-00	RPLG 8	8	2	9	80	115	15	44	85	10	359

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## LPL / Logical Board, LPL-G(-S) / Logical Board with Box

LPL 8



LPL-G 8



LPL-G-S 8



**Remarks:**

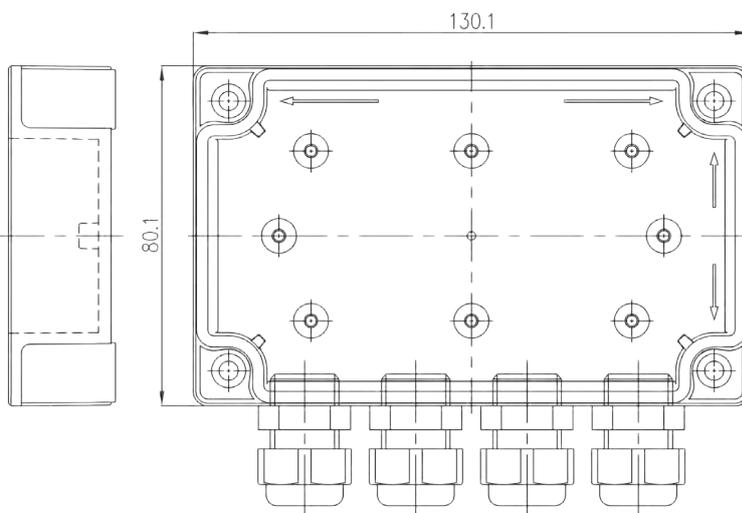
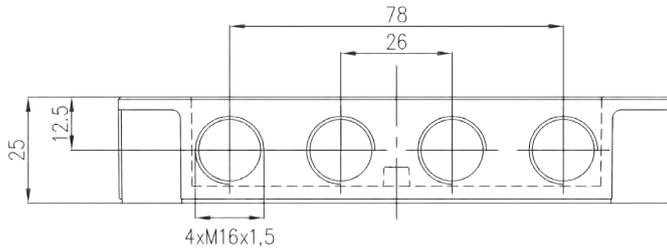
**Application: Logical Board for summarizing input signals**

- up to 8 inputs and 4 outputs can be assigned
  - inputs can be controlled with +24V driven (for initiators with PNP output) or 0V (for initiators with NPN output)
  - outputs can be used as PNP output (active + 24V, otherwise open) or NPN output (active 0V, otherwise open)
  - the state of the inputs and outputs as well as the normal state of the board are indicated by LEDs; this allows a permanent overview of the operation state of the system
  - by default, there are 4 functions programmed and selectable via DIP switch (other functions on request)
- » see following page

**Accessories e.g.:**

- connector KG 12-8
- plug 3-pin UCR-SEA-3GS-M8-S

4 x M16 cable glands mounted



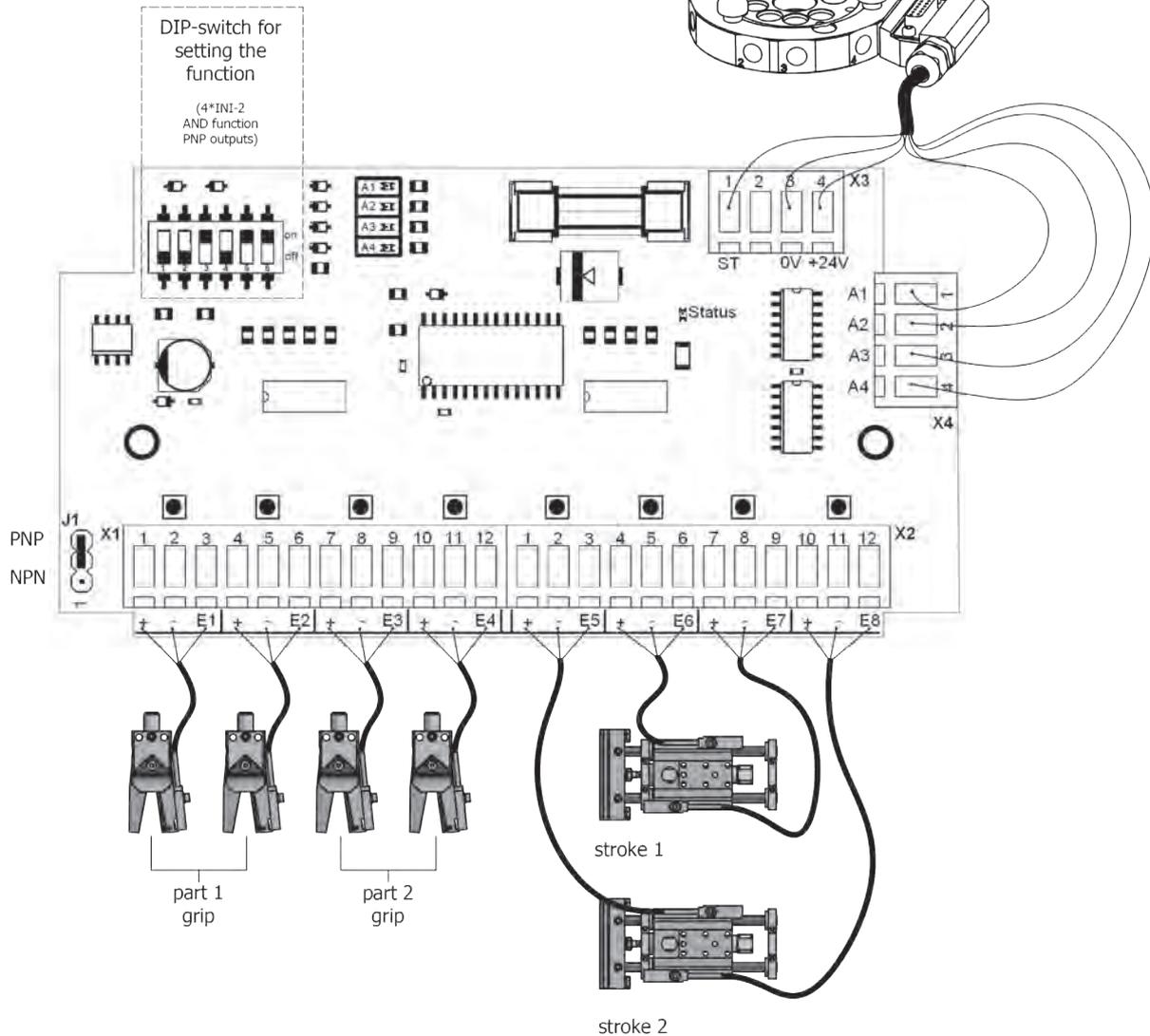
Part No.	Description	Type	Weight [g]
1-805-17-00	LPL 8	Logical Board	45
1-805-18-00	LPL-G 8	Logical Board with Box	378
1-805-19-00	LPL-G-S 8	Logical Board with Box and Plugs	392

**Application example LPL**

**Output:**

- A1**= PNP NO, part 1 gripped (E1, E2 series connection\*)
- A2**= PNP NO, part 2 gripped (E3, E4 series connection\*)
- A3**= PNP NO, stroke 1 and 2 extended (E5, E6 series connection\*)
- A4**= PNP NO, stroke 1 and 2 retracted (E7, E8 series connection\*)

\* AND function



**Programm 1x8**

Input	Logical Function*	Output
1-8	AND	1 u. 2
1-8	OR	3 u. 4
1-8	NOR	3 u. 4

**Programm 1x6 and 1x2**

Input	Logical Function*	Output
1-6	AND	1
7-8	AND	2
1-6	OR/NOR	3
7-8		4

**Programm 2x4**

Input	Logical Function*	Output
1-4	AND	1
5-8	AND	2
1-4	OR/NOR	3
5-8		4

**Programm 4x2**

Input	Logical Function*	Output
1-2	AND/OR	1
3-4		2
5-6		3
7-8		4

\* = selectable via dip switch

The inputs and outputs can be used as PNP or NPN by switching a dip-switch.

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**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

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**220**  
Vacuum Cups

**224**  
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Parallel Gripper

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Special Elements

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Electrics and  
Sensors

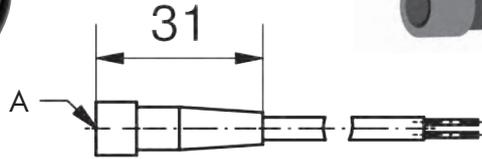
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 800 | Electrics and Sensors

## KG / Connector with Cable 3, 4 or 8 Pin Female

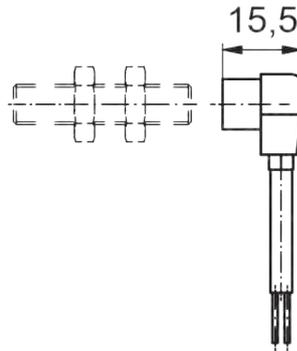


**Remarks:**

- connector for sensors, see table

Part No.	Description	Wire	Union Nut A	suitable for	Cable length [m]	Weight [g]
1-803-02-00	KG 8-4	4	M8x1	LES 6/MFS T	5	125
1-803-04-00	KG 8-3	3	M8x1	IES 8/ICS 8/IE AL K	5	107
1-803-05-00	KG 12-8	8	M12x1	LPL-G-S-8	5	230
1-808-06-00	KG 18-4	4	M12x1	LRS 18	5	154

## KW 18 / Elbow Connector 3 or 4 pin Female with Cable

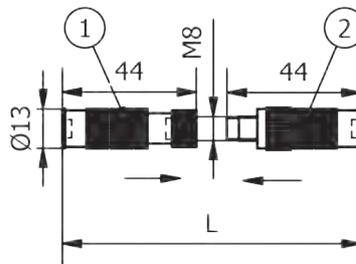


**Remarks:**

- connector for sensors, see table

Part No.	Description	Wire	Union Nut	suitable for	Cable length [m]	Weight [g]
1-803-06-00	KW 8-3	3	M8x1	IES 8/ICS 8/IE AL K	5	107
1-803-07-00	KW 8-4	4	M8x1	MFS T/LES 6	5	150
1-808-08-00	KW 18-4	4	M12x1	LRS 18	5	158

## VRS 8 / Plug and Socket Connection 3 and 4 Pin



**Remarks:**

- allows an easy exchange of sensors
- table: L = installed length

**Drawing:**

- 1 socket
- 2 plug



Part No.	Description	U [V] DC	I [A] DC	Cable diameter [mm²]	L [mm]	Weight [g]
1-808-10-00	VRS 8-3	24	1	0.14 - 1.0	82	16
1-808-11-00	VRS 8-4	24	1	0.14 - 1.0	82	16

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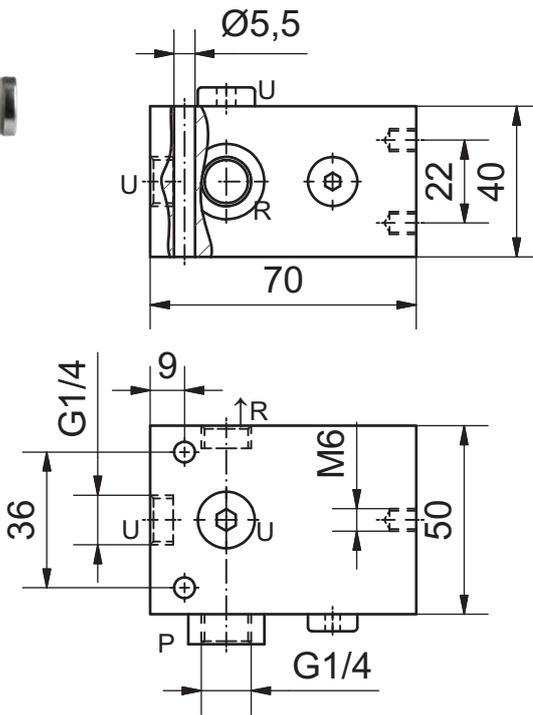
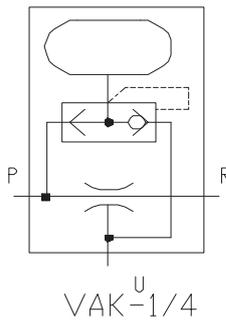
**850**  
Pneumatics

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Micro System

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PA-Forming  
Others

# 850 | Pneumatics

## VAE 10 / Vacuum Producer with Blow-Off



**Remarks:**

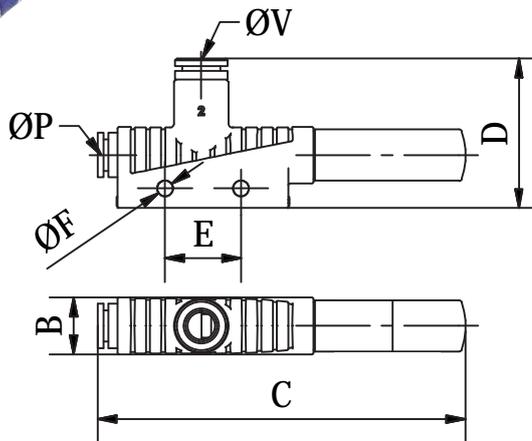
- the intergrated blow-off feature sends a short impulse of air through the vacuum line after supply air is shot off

**Drawing:**

- P compressed air connection
- U vacuum connection
- R exhaust

Part No.	Description	Air Pressure [bar]	Vacuum at 6 bar	Pumping speed [NI/min]	Material	Weight [g]
1-866-02-00	VAE 10	1.5 - 10	-0.85	ca. 35	Aluminum	257

## VEL / Vacuum Producer - Lightweight



**Remarks:**

- vacuum ejector made of plastics
- pipe connection with push/pull principle
- open absorbing duct
- directly mounting on a profile with channel nut GWP 4 U

Part No.	Description	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	P [mm]	V [mm]	Pumping speed [l/min]	Air Pressure [bar]	Weight [g]
1-866-10-00	VEL 10	15	97	40	20	4.2	6	8	37.7	3 - 6	22
1-866-11-00	VEL 15	15	97	40	20	4.2	6	8	71.0	3 - 6	22
1-866-12-00	VEL 20	20	168	45	20	4.2	8	10	127.0	3 - 6	51
1-866-13-00	VEL 25	20	168	45	20	4.2	8	10	215.0	3 - 6	51

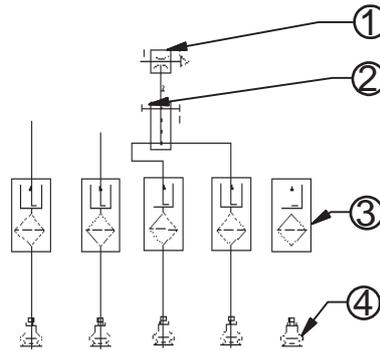
## STV / Smart Flow Valve

### Remarks:

- when several vacuum cups are used, but not all are used, this flow valve is used
- closes the line of the inactive vacuum suction cup

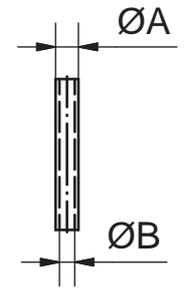
### Drawing:

- 1 vacuum generator
- 2 manifold
- 3 smart flow valve
- 4 vacuum cups



Part No.	Description	A ["]	B ["]	Weight [g]
1-852-20-00	STV 1/8	G1/8	G1/8	9
1-852-22-00	STV 1/4	G1/4	G1/4	15

## PSS / Pneumatic Hose



Part No.	Description	Colour	A [mm]	B [mm]	Hose Ø [mm]	Length [m]
1-852-01-00	PSS 3-0,5	silver	3	2	3/0,5	10
1-852-02-00	PSS 4-3	silver	4	2.6	4/3	20
1-852-02-01	PSS 4-3 ro	red	4	2.6	4/3	10
1-852-02-02	PSS 4-3 gr	green	4	2.6	4/3	10
1-852-02-03	PSS 4-3 ge	yellow	4	2.6	4/3	10
1-852-02-04	PSS 4-3 bl	blue	4	2.6	4/3	10
1-852-02-06	PSS 4-3 sw	black	4	2,6	4/3	10
1-852-04-01	PSS 6-4 ro	red	6	4	6/4	10
1-852-04-00	PSS 6-4	silver	6	4	6/4	25
1-852-04-02	PSS 6-4 gr	green	6	4	6/4	10
1-852-04-03	PSS 6-4 ge	yellow	6	4	6/4	10
1-852-04-04	PSS 6-4 bl	blue	6	4	6/4	10
1-852-04-06	PSS 6-4 sw	black	6	4	6/4	10
1-852-06-00	PSS 8-6	silver	8	6	8/6	20

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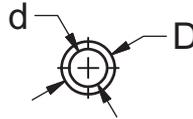
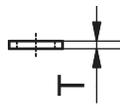
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 850 | Pneumatics

## PDA / Seal Ring



**Remarks:**

- sold in 100 pcs bags

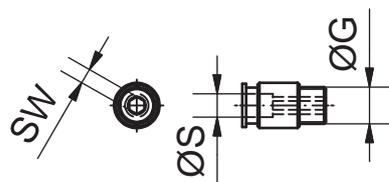
Part No.	Description	D [mm]	d [mm]	T [mm]	for thread [mm] ["]	Items per unit [pcs]	Material
1-857-10-00	PDA M5	7.5	5	1	M5	100	Aluminum
1-857-12-00	PDA 1/8	14	10	2	1/8	100	Aluminum
1-857-14-00	PDA 1/4	18	13.3	2	1/4	100	Aluminum

## STA / Straight Quick Hose Connector



**Remarks:**

- self-sealing screw thread
- metric size threads have a rubber seal ring
- sold in bags of 10 pcs

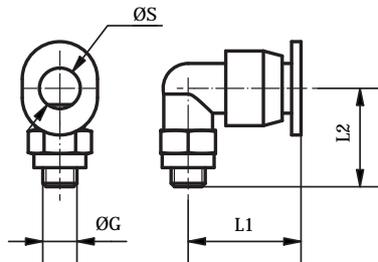


Part No.	Description	compatible with hose	G [mm] ["]	Ø S [mm]	Weight [g]	Items per unit [pcs]
1-852-30-00	STA M3-3-0,5	PSS 3-0,5	M3	3	2	10
1-852-32-00	STA M3 4-3	PSS 4-3	M3	4	2	10
1-852-34-00	STA M5 4-3	PSS 4-3	M5	4	3	10
1-852-36-00	STA M5 6-4	PSS 6-4	M5	6	4	10
1-852-38-00	STA 1/8 4-3	PSS 4-3	R 1/8	4	6	10
1-852-40-00	STA 1/8 6-4	PSS 6-4	R 1/8	6	5	10
1-852-42-00	STA 1/8 8-6	PSS 8-6	R 1/8	8	8	10

## VSL, PSL / Quick Hose Connector L-90°

### Remarks:

- quick hose connector can rotate 360° when installed
- G threads are self sealing
- connectors with metric thread have a rubber seal ring
- sold in bags of 10 pcs



### VSL / Quick Hose Connector L-90°

Part No.	Description	G [mm] ["]	S [mm]	L1 [mm]	L2 [mm]	compatible with hose	Weight [g]	Items per unit [pcs]
1-852-44-00	VSL M3 4-3	M3	4	15.7	14	4/3	3	10
1-852-46-00	VSL M5 4-3	M5	4	15.7	13.5	4/3	3	10
1-852-48-00	VSL M5 6-4	M5	6	16.3	14.5	6/4	4	10
1-852-50-00	VSL 1/8 4-3	R1/8	4	16	16	4/3	10	10
1-852-52-00	VSL 1/8 6-4	R1/8	6	16.5	17	6/4	11	10
1-852-54-00	VSL 1/8 8-6	R1/8	8	22.7	24	8/6	14	10
1-852-56-00	VSL 1/4 6-4	R1/4	6	21.8	28	6/4	19	10
1-852-58-00	VSL 1/4 8-6	R1/4	8	23.7	28	8/6	20	10

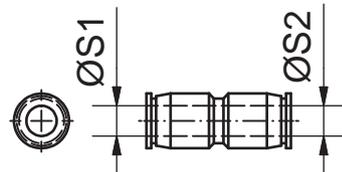
### PSL / Quick Hose Connector L-90°

Part No.	Description	G [mm] ["]	S [mm]	L1 [mm]	L2 [mm]	compatible with hose	Weight [g]	Items per unit [pcs]
1-852-60-00	PSL 1/8 4-3	R1/8	4	15.5	28.5	4/3	11	10
1-852-62-00	PSL 1/8 6-4	R1/8	6	16.5	29.5	6/4	13	10
1-852-64-00	PSL 1/8 8-6	R1/8	8	22.7	40.5	8/6	16	10
1-852-66-00	PSL 1/4 6-4	R1/4	6	21.8	42.5	6/4	20	10
1-852-68-00	PSL 1/4 8-6	R1/4	8	23.7	44.5	8/6	22	10

## STG / Straight Quick Connector

### Remarks:

- push-pull-principle
- sold in bags of 10 pcs



Part No.	Description	Ø S1 for hose [mm]	Ø S2 for hose [mm]	Weight [g]	Items per unit [pcs]
1-851-01-01	STG 4	4/3	4/3	2	10
1-851-01-02	STG 6	6/4	6/4	3	10
1-851-01-03	STG 8	8/6	8/6	9	10
1-851-01-04	STG 6-4	6/4	4/3	3	10
1-851-01-05	STG 8-6	8/6	6/4	8	10

**000**  
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**050**  
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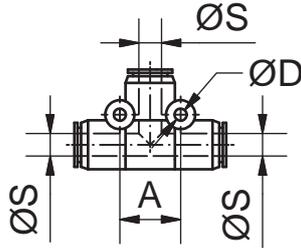
**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

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## STT / T Hose Quick Connector

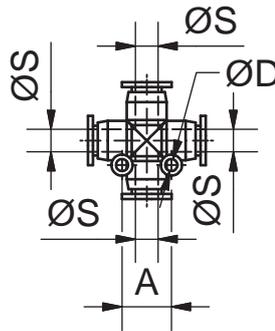


**Remarks:**

- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	ØS for hose [mm]	A [mm]	D [mm]	Material	Weight [g]	Items per unit [pcs]
1-851-02-01	STT 4	4/3	11	3.2	CuZn/Kunst.	3	10
1-851-02-02	STT 6	6/4	13	3.2	CuZn/Kunst.	5	10
1-851-02-03	STT 8	8/6	18	3.2	CuZn/Kunst.	15	10

## STX / X Hose Quick Connector

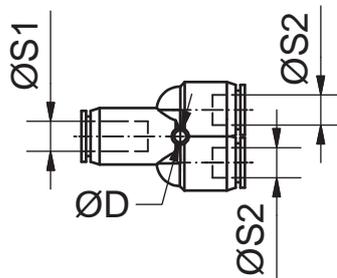


**Remarks:**

- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	ØS for hose [mm]	A [mm]	Ø D [mm]	Weight [g]	Items per unit [pcs]
1-851-03-01	STX 4	4/3	11	3.2	4	10
1-851-03-02	STX 6	6/4	13	3.2	7	10
1-851-03-03	STX 8	8/6	18	3.2	20	10

## STY / Y Hose Connector



**Remarks:**

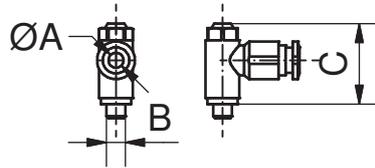
- push-pull-principle
- sold in bags of 10 pcs

Part No.	Description	Ø S1 for Hose	Ø S2 for Hose	Ø D [mm]	Weight [g]	Items per unit [pcs]
1-851-04-01	STY 4	4/3	4/3	3.2	3	10
1-851-04-02	STY 6	6/4	6/4	3.2	5	10
1-851-04-03	STY 8	8/6	8/6	3.2	15	10
1-851-04-04	STY 6-4	6/4	4/3	3.2	10	10
1-851-04-05	STY 8-6	8/6	6/4	3.2	12	10

**DRV / One Way Restrictor**

**Remarks:**

- push-pull-principle
- cross-category can be adjusted by a screwdriver
- seals are included
- accessory for:  
HEU, HEU-L, KHZ, SZD, HUZ

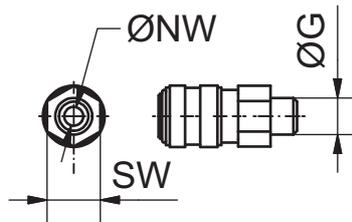


Part No.	Description	A [mm]	B [mm] ["]	C [mm]	Weight [g]
1-851-05-00	DRV-M5-4-3	4	M5	21,5	11
1-851-05-01	DRV-M5-6-4	6	M5	21,5	13
1-851-05-02	DRV-1/8-6-4	6	1/8	31,5	19

**PSK / Quick Release Coupling**

**Remarks:**

- accessories for quick change system SWM (see category 000)
- sold in bags of 10 pcs
- seals are included

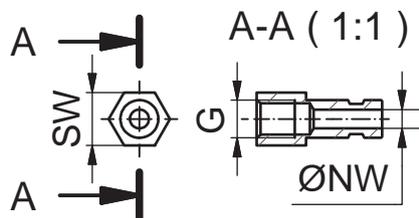


Part No.	Description	Ø G [mm] ["]	SW [mm]	Ø NW [mm]	compatible with	Accessory for SWM	Material	Weight [g]	Items per unit [pcs]
1-862-02-00	PSK M5	M5	9	2.5	STN M5	0+1	CuZn	8	10
1-862-04-00	PSK 1/8	G 1/8	14	5	STN 1/8	2	CuZn	26	10
1-862-06-00	PSK 1/4	G 1/4	22	7	STN 1/4	3	CuZn	72	10

**STN / Plug-In Nipple**

**Remarks:**

- the STN is an accessory to the SWM quick change system
- it fits into the PSK quick release coupling (see category 000)
- the threads must be sealed with teflon tape or liquid thread seal



Part No.	Description	ØG [mm] ["]	NW [mm]	SW [mm]	compatible with	Accessory for SWM	Material	Weight [g]	Items per unit [pcs]
1-862-10-00	STN M5	M 5	2.5	7	PSK M5	0+1	CuZn	3	10
1-862-12-00	STN 1/8	G 1/8	5	14	PSK 1/8	2	CuZn	16	10
1-862-14-00	STN 1/4	G 1/4	7	17	PSK 1/4	3	CuZn	24	10

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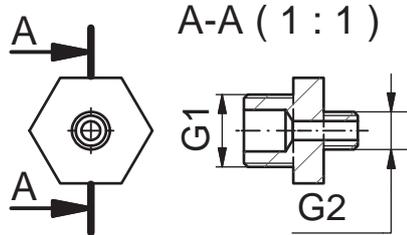
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## PDN / Double Union with Hex

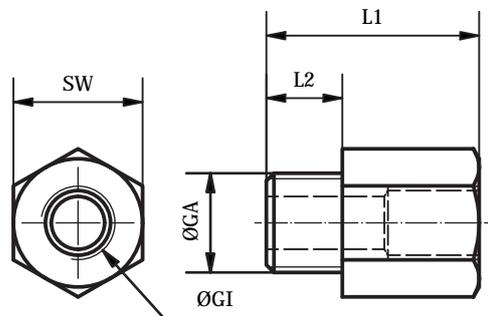


**Remarks:**

- use of teflon tape or liquid seal is recommended
- sold in bags of 10 pcs

Part No.	Description	G1 [mm] ["]	G2 [mm] ["]	Weight [g]	Items per unit [pcs]	Material
1-858-08-00	PDN M5-M5	M5	M5	2	10	CuZn
1-858-10-00	PDN 1/8-1/8	G1/8	G1/8	11	10	CuZn
1-858-12-00	PDN 1/4-1/4	G1/4	G1/4	20	10	CuZn
1-858-14-00	PDN 1/8-M5	G1/8	M5	8	10	CuZn
1-858-16-00	PDN 1/4-1/8	G1/4	G1/8	19	10	CuZn
1-858-18-00	PDN 3/8-1/4	G3/8	G1/4	29	10	CuZn

## RNL / Reducing Union Long



**Remarks:**

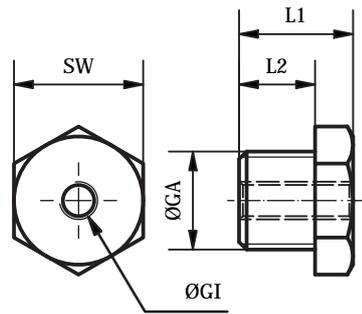
- sold in bags of 10 pcs
- threads must be sealed

Part No.	Description	ØGI ["]	ØGA ["]	L1 [mm]	L2 [mm]	SW [mm]	Items per unit [pcs]	Material	Weight [g]
1-858-20-00	RNL 1/8-1/8	G1/8	G1/8	23	8	14	10	CuZn	17
1-858-22-00	RNL 1/8-1/4	G1/8	G1/4	28	10	17	10	CuZn	35
1-858-24-00	RNL 1/4-1/4	G1/4	G1/4	28	10	17	10	CuZn	28
1-858-26-00	RNL 1/4-1/8	G1/4	G1/8	25.5	7.5	17	10	CuZn	23

## RNK / Reducing Union Short

**Remarks:**

- sold in bags of 10 pcs
- threads must be sealed

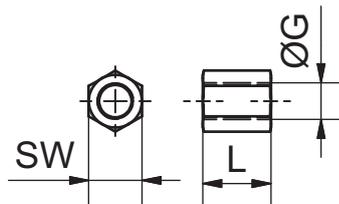


Part No.	Description	ØGI ["] [mm]	ØGA ["] [mm]	L1 [mm]	L2 [mm]	SW [mm]	Items per unit [pcs]	Material	Weight [g]
1-858-28-00	RNK M3-M5	M3	M5	7.5	4.5	8	10	CuZn	2
1-858-30-00	RNK M5-1/8	M5	G1/8	10	6,5	14	10	CuZn	7
1-858-32-00	RNK M5-1/4	M5	G1/4	15	10	17	10	CuZn	16
1-858-34-00	RNK 1/8-1/4	G1/8	G1/4	14	10	17	10	CuZn	10

## PMM / Thread Coupling

**Remarks:**

- sold in bags of 10 pcs
- use of thread seal is recommended
- threads must be sealed

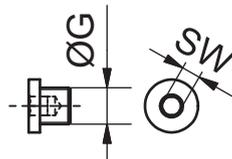


Part No.	Description	L [mm]	SW [mm]	G [mm] ["]	Items per unit [pcs]	Weight [g]	Material
1-858-38-00	PMM M5	9	8	M5	10	3	CuZn
1-858-40-00	PMM 1/8	18	14	G1/8	10	16	CuZn
1-858-42-00	PMM 1/4	26	17	G1/4	10	28	CuZn

## PVS / Hex Plug

**Remarks:**

- use with PDA Seal Ring (see category 850)
- sold in bags of 10 pcs
- threads must be sealed



Part No.	Description	SW [mm]	G ["]	fitting seal	Items per unit [pcs]	Material	Weight [g]
1-858-44-00	PVS M5	8	M5	PDA M5	10	CuZn	2
1-858-46-00	PVS 1/8	5	G1/8	PDA 1/8	10	CuZn	7
1-858-48-00	PVS 1/4	6	G1/4	PDA 1/4	10	CuZn	15

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**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

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Manifold

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

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Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

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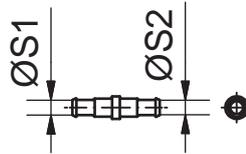
**850**  
Pneumatics

**990**  
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Micro System

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PA-Forming  
Others

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## SVG / Straight Hose Connector

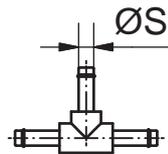
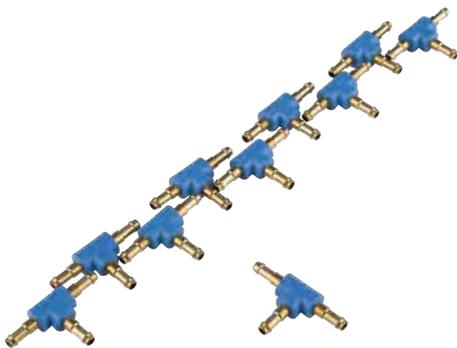


**Remarks:**

- sold in bags of 10 pcs

Part No.	Description	Ø S1 for Hose	Ø S2 for Hose	Weight [g]	Items per unit [pcs]	Material
1-860-02-00	SVG 4-3-4-3	4/3	4/3	1	10	CuZn
1-860-04-00	SVG 4-3-6-4	4/3	6/4	1	10	CuZn
1-860-06-00	SVG 6-4-6-4	6/4	6/4	1	10	CuZn
1-860-08-00	SVG 6-4-8-6	6/4	8/6	4	10	CuZn
1-860-10-00	SVG 8-6-8-6	8/6	8/6	3	10	CuZn

## SVT / T Hose Connector

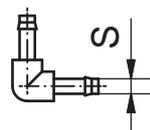
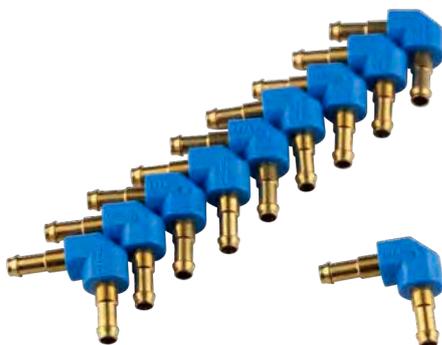


**Remarks:**

- sold in bags of 10 pcs

Part No.	Description	Ø S for Hose	Weight [g]	Items per unit [pcs]	Material
1-860-12-00	SVT 4-3	4/3	2	10	CuZn
1-860-14-00	SVT 6-4	6/4	3	10	CuZn

## SVL / L Hose Connector



**Remarks:**

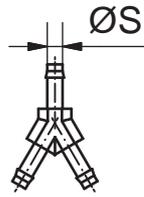
- sold in bags of 10 pcs

Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-18-00	SVL 4-3	4/3	1	10	CuZn/plastic
1-860-20-00	SVL 6-4	6/4	2	10	CuZn/plastic

**SVY / Y Hose Connector**

**Remarks:**

- sold in bags of 10 pcs

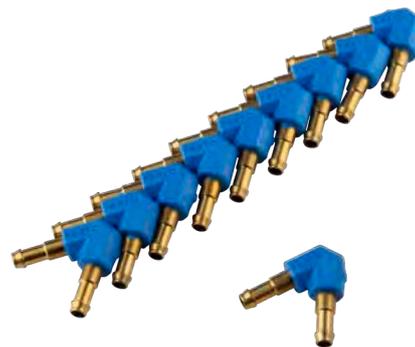
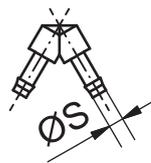


Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-24-00	SVY 4-3	4/3	2	10	CuZn/Plastics
1-860-26-00	SVY 6-4	6/4	4	10	CuZn/Plastics

**SVV / V Hose Connector**

**Remarks:**

- sold in bags of 10 pcs

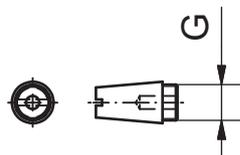


Part No.	Description	Ø S for hose	Weight [g]	Items per unit [pcs]	Material
1-860-30-00	SVV 4-3	4/3	1	10	CuZn
1-860-32-00	SVV 6-4	6/4	2	10	CuZn

**PSD / Silencer**

**Remarks:**

- made of bronze
- sold in bags of 10 pcs
- no seal necessary



Part No.	Description	Ø G [mm] ["]	Weight [g]	Items per unit [pcs]	Material
1-864-02-00	PSD M5	M5	6	10	Bronze
1-864-04-00	PSD 1/8	G1/8	7	10	Bronze
1-864-06-00	PSD 1/4	G1/4	14	10	Bronze

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Profile Accessories

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Pneumatics

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**990**  
PA-Forming Others

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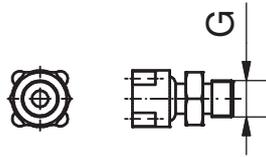
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Others

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## ADS / Exhaust Throttle-Silencer

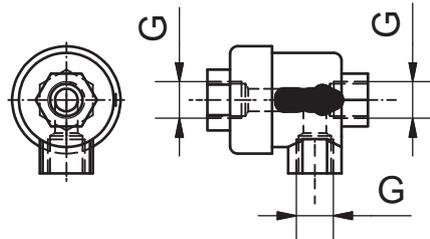


**Remarks:**

- double nipple silencer made of brass
- ADS 1/8 with WS = 14mm
- ADS 1/4 with WS = 17mm

Part No.	Description	G ["]	Weight [g]
1-864-10-00	ADS 1/8	G1/8	18
1-864-12-00	ADS 1/4	G1/4	28

## SEV / Quick Exhaust Valve

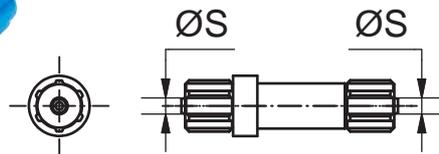


**Remarks:**

- for example for venting cylinders

Part No.	Description	G ["]	Weight [g]
1-864-16-00	SEV 1/8	G1/8	84
1-864-18-00	SEV 1/4	G1/4	162

## FSL / Particle Filter for Vacuum or Pneumatic Lines

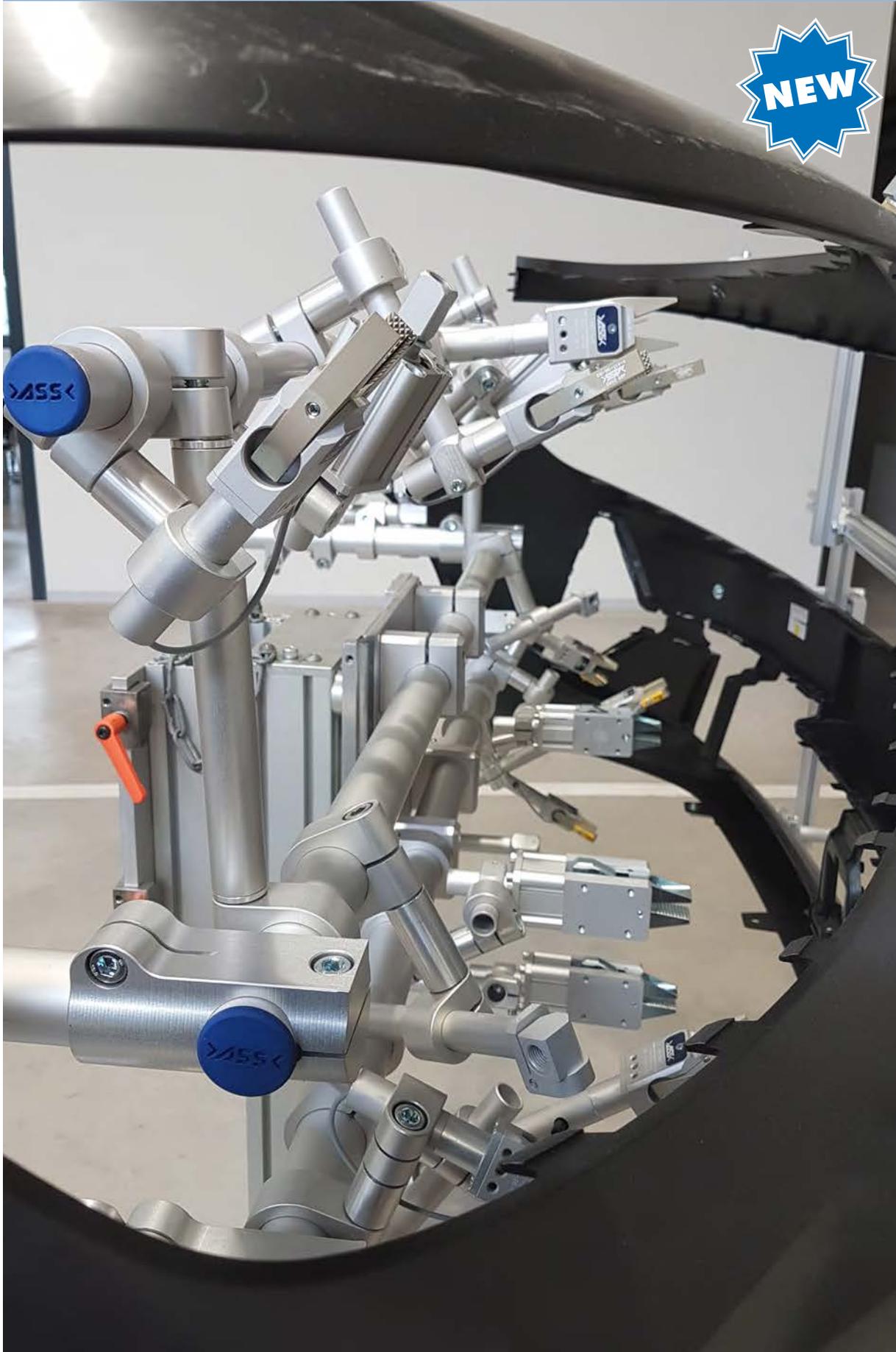


**Remarks:**

- recommended for use with the IGP ID-Gripper

Part No.	Description	ØS for hose [mm]	Weight [g]
1-852-26-00	FSL 4	4/3	6
1-852-27-00	FSL 6	6/4	10

**Tubular-System EOAT Baseframe Kit**



**NEW**

**EOAT connectors in milled design for highest dynamic loads.**

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# 990 | Tubular- and Micro-System

## GPM R / EOAT (Robot Hand) Base Plate, Tubular-System

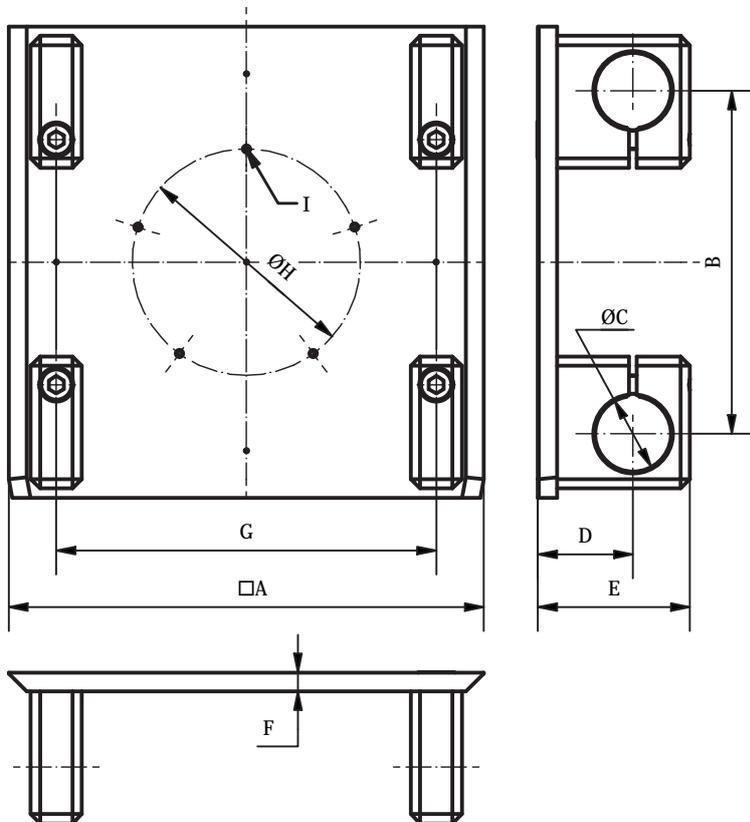


**Remarks:**

**Application: with the GPM R you can continue building directly with the tubular system**

- 2 round tubes Ø 40 can be clamped horizontally aligned
- for example for the removal of bumpers, spoilers etc.
- GPM are provided with drilling pattern for SWH G 150 (size I)
- see application example
- SWH G 150 is not included in the scope of delivery

Application example



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Weight [g]
3-005-01-00	GPM 3-40 R	250	182	40	50	80	10	200	120	5x M6	2809

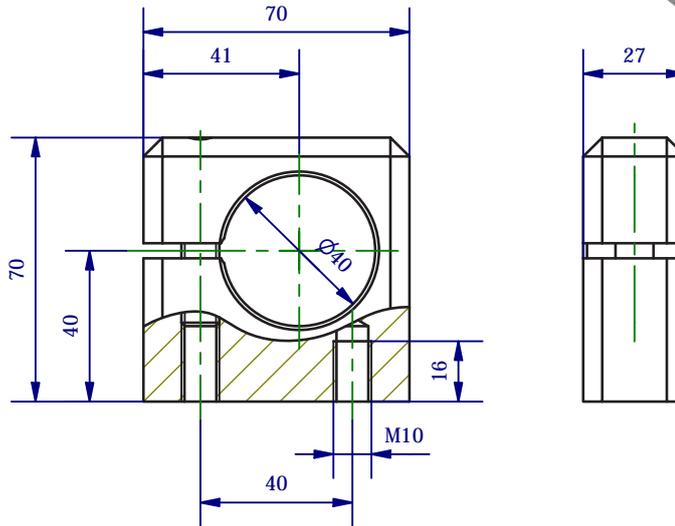
## RVG / Connector for Base-Plate GPM

### Remarks:

- for connecting round tube profiles to GPM base plates

### Scope of Delivery:

- clamping screw included
- mounting screws for base plate not included; screws of strength class at least 10.9 are recommended

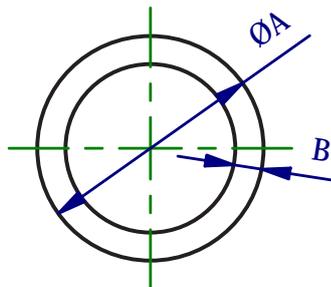


Part No.	Description	Material	Weight [g]
3-020-40-00	RVG 40	Aluminium	260

## R-Profile / Tubular-System

### Remarks:

- for the construction of grippers in round tube design
- minimum length of the round tube profiles 50 mm
- special lengths over 2000 mm on request



Part No.	Description	A [mm]	B [mm]	Länge [mm]	Werk-stoff	Weight [g]
3-050-20-01	R 20-2,5-1000	20	2,5	1000	Al	390
3-050-20-02	R 20-2,5-2000	20	2,5	2000	Al	780
3-050-20-06	R 20-2,5-0001	20	2,5	1	Al	0.39
3-050-25-01	R 25-5-1000	25	5	1000	Al	885
3-050-25-02	R 25-5-2000	25	5	2000	Al	1770
3-050-25-06	R 25-5-0001	25	5	1	Al	0.89
3-050-30-01	R 30-3-1000	30	3	1000	Al	710
3-050-30-02	R 30-3-2000	30	3	2000	Al	1420
3-050-30-06	R 30-3-0001	30	3	1	Al	0.71
3-050-40-01	R 40-4-1000	40	4	1000	Al	1270
3-050-40-02	R 40-4-2000	40	4	2000	Al	2540
3-050-40-06	R 40-4-0001	40	4	1	Al	1.27

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Electrics and  
Sensors

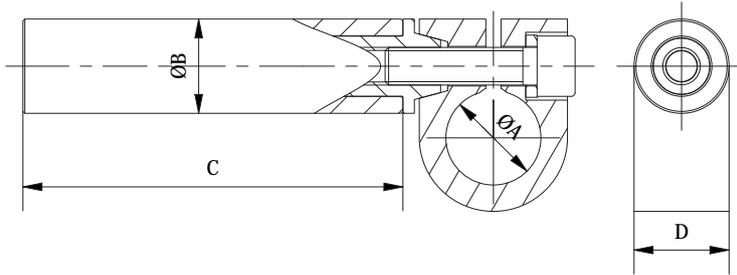
**850**  
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Others

# 990 | Tubular- and Micro-System

## RV 1 / Connector, round



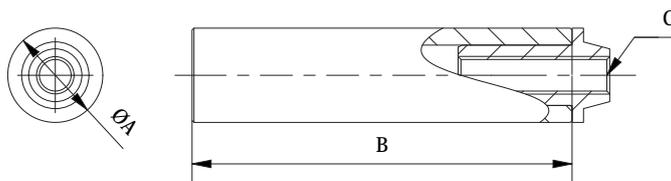
**Remarks:**

- universally applicable connector to continue building e.g. from RV 2
- alternatively, a WKA angle arm or a GLA articulated gripper arm can also be used for an RV 2 with clamping diameters of 20 or 30 mm, e.g. see photo



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
3-103-03-00	RV 1-25-20-100	20	25	100	25	Aluminium	194
3-103-06-00	RV 1-25-20-200	20	25	200	25	Aluminium	280
3-103-09-00	RV 1-25-20-300	20	25	300	25	Aluminium	366
3-103-12-00	RV 1-25-25-100	25	25	100	25	Aluminium	200
3-103-15-00	RV 1-25-25-200	25	25	200	25	Aluminium	286
3-103-18-00	RV 1-25-25-300	25	25	300	25	Aluminium	372
3-103-21-00	RV 1-25-30-100	30	25	100	25	Aluminium	210
3-103-24-00	RV 1-25-30-200	30	25	200	25	Aluminium	296
3-103-27-00	RV 1-25-30-300	30	25	300	25	Aluminium	382
3-103-30-00	RV 1-25-40-100	40	25	100	25	Aluminium	253
3-103-33-00	RV 1-25-40-200	40	25	200	25	Aluminium	339
3-103-36-00	RV 1-25-40-300	40	25	300	25	Aluminium	425

## VLK 1 / Extension, single-cone



**Remarks:**

- for assembling individual Round-Connectors RV 1

**Accessories e.g.:**

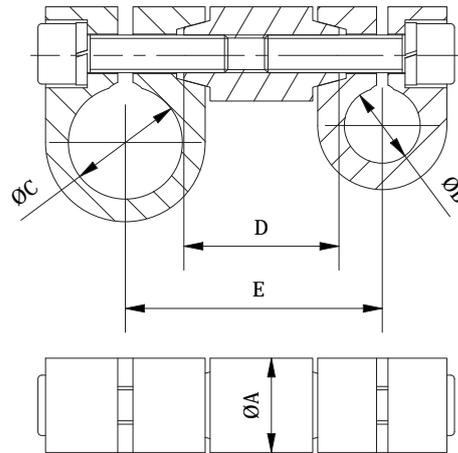
- RK K / Mounting Adapter cone

Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-100-10-00	VLK 1 25-100 Extension, single-cone, Ø25, length 100	25	100	M10	Al	100
3-100-20-00	VLK 1 25-200 Extension, single-cone, Ø25, length 200	25	200	M10	Al	186
3-100-30-00	VLK 1 25-300 Extension, single-cone, Ø25, length 300	25	300	M10	Al	272

## RV 2 / Double-Connector, round

### Remarks:

- universally applicable round connector with clamping on both sides
- for connecting various round tube elements with each other to mount a tubular base frame
- allows the connection of the round tube construction kit with gripper elements from the ASS robot hand construction kit which have a clamping diameter of 20 or 30 mm



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
3-104-01-00	RV 2-25-25-25-40	25	25	25	40	69	Aluminium	237
3-104-02-00	RV 2-25-20-30-40	25	20	30	40	68	Aluminium	241
3-104-03-00	RV 2-25-20-25-40	25	20	25	40	66	Aluminium	231
3-104-11-00	RV 2-25-20-25-66	25	20	25	66	92	Aluminium	264
3-104-12-00	RV 2-25-20-40-66	25	20	40	66	100	Aluminium	317
3-104-13-00	RV 2-25-40-40-66	25	40	40	66	111	Aluminium	376

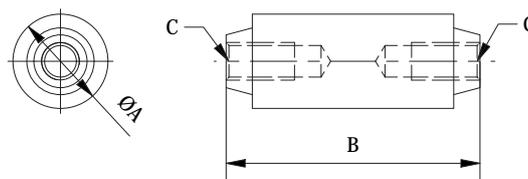
## VLK 2 / Extension, double-cone

### Remarks:

- for assembling individual Round-Connectors RV 2

### Accessories e.g.:

- RK K / Mounting Adapter cone



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-102-27-01	VLK 2 25-40 Extension, double-cone, Ø25, distance 40	25	40	M10	Aluminium	37
3-102-53-01	VLK 2 25-66 Extension, double-cone, Ø25, distance 66	25	66	M10	Aluminium	70

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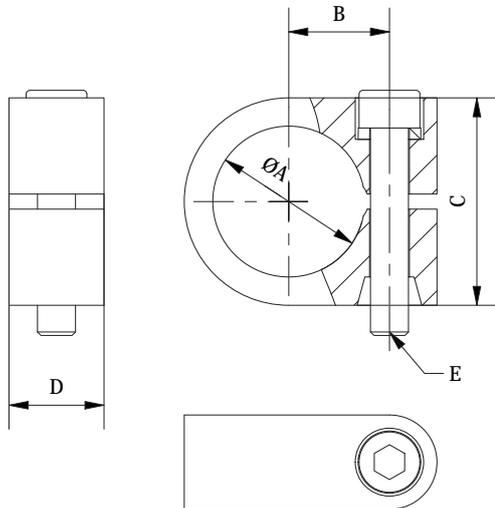
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## RK K / Mounting Adapter Cone



**Remarks:**

- for assembling individual Round-Connectors RV 1 or RV 2

**Scope of Delivery:**

- mounting material included

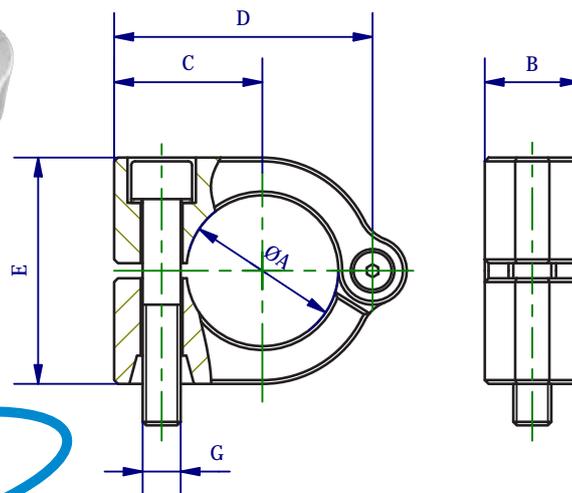
**Accessories e.g.:**

- VLK 1 / Extension, single-cone
- VLK 2 / Extension, double-cone



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
3-101-20-00	RK K25-20 Mounting Adapter cone25, clamping Ø20	20	19	34	25	M10	Al	94
3-101-25-00	RK K25-25 Mounting Adapter cone25, clamping Ø25	25	19	39	25	M10	Al	100
3-101-30-00	RK K25-30 Mounting Adapter cone25, clamping Ø30	30	23.5	42	25	M10	Al	110
3-101-40-00	RK K25-40 Mounting Adapter cone25, clamping Ø40	40	26.5	55	25	M10	Al	153

## RKN K / Mounting Adapter for VLK



**Remarks:**

- for subsequent expansion of the EOAT
- no disassembly necessary
- clamping piece is attached to the tubular gripper and then the desired VLK 1 or VLK 2 is mounted

**Scope of Delivery:**

- mounting material included

**Accessories e.g.:**

- VLK 1 / Extension, single-cone
- VLK 2 / Extension, double-cone

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	Material	Weight [g]
3-107-25-00	RKN K25-25	25	25	33	55.5	48	M10	Aluminium	159
3-107-40-00	RKN K25-40	40	25	39	68	60	M10	Aluminium	191

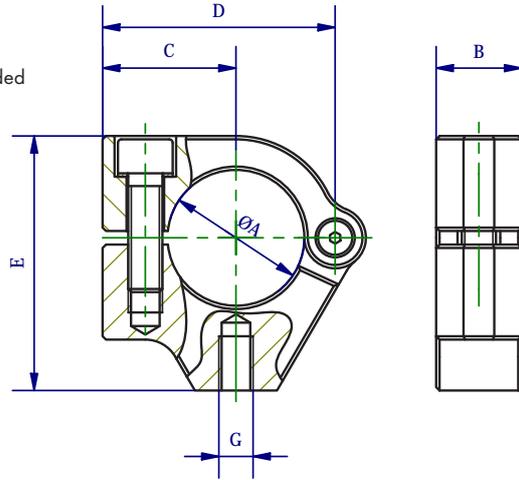
## RKN G / Mounting Adapter for panels

**Remarks:**

- for mounting tubular systems e.g. to plates

**Scope of Delivery:**

- mounting material included



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	Material	Weight [g]
3-108-25-00	RKN G8-25	25	25	33	55.5	60	M8	Aluminium	174
3-108-40-00	RKN G10-40	40	25	39	68	75	M10	Aluminium	225

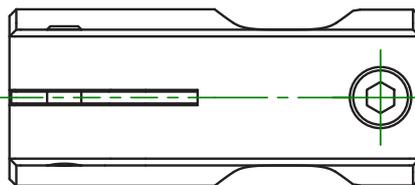
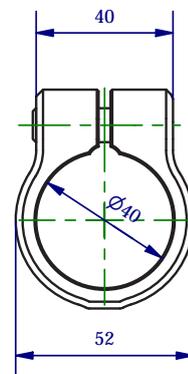
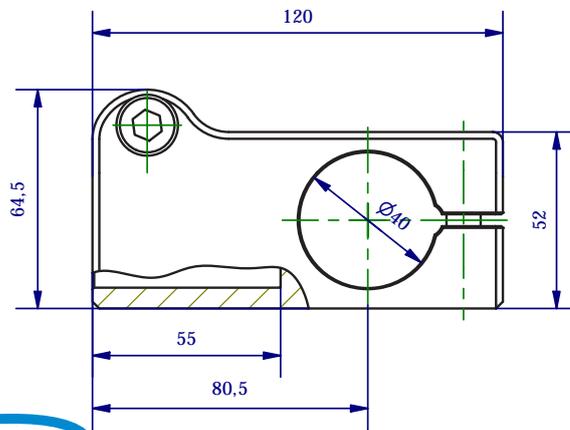
## RKT / Connector, round, T-style

**Remarks:**

- for connecting tubular profiles at an angle of 90°
- T-style: one profile is attached to the head side, the other side can be pushed through
- no additional work such as drilling or thread cutting required

**Scope of Delivery:**

- mounting material included



Part No.	Description	Material	Weight [g]
3-120-40-00	RKT 40 Connector, round, T-style, $\phi_{40}$	Aluminium	413

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Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

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Special  
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**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

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PA-Forming  
Others

# 990 | Tubular- and Micro-System

## RKW / Connector, round, angle 45°

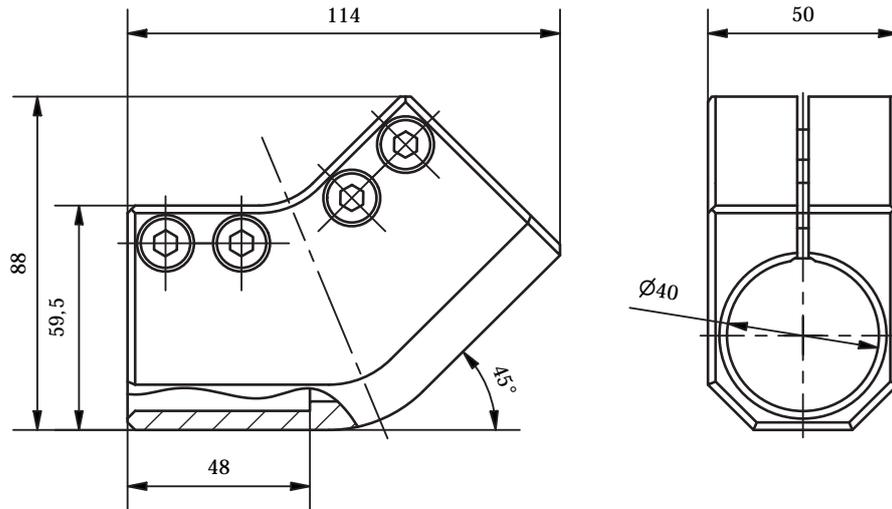


**Remarks:**

- for connecting tubular profiles at an angle of 45°
- no additional work such as drilling or thread cutting required

**Scope of Delivery:**

- mounting material included



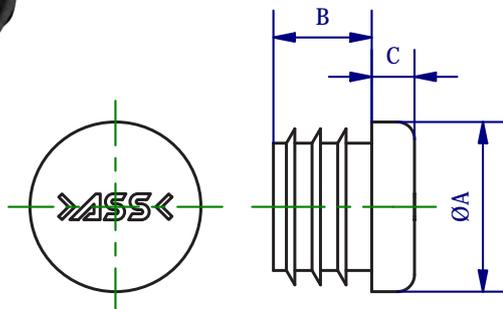
Part No.	Description	Material	Weight [g]
3-121-40-00	RKW 45-40 Connector, round, angle 45°, Ø40	Aluminium	508

## ADK R / Profile End Cap, round



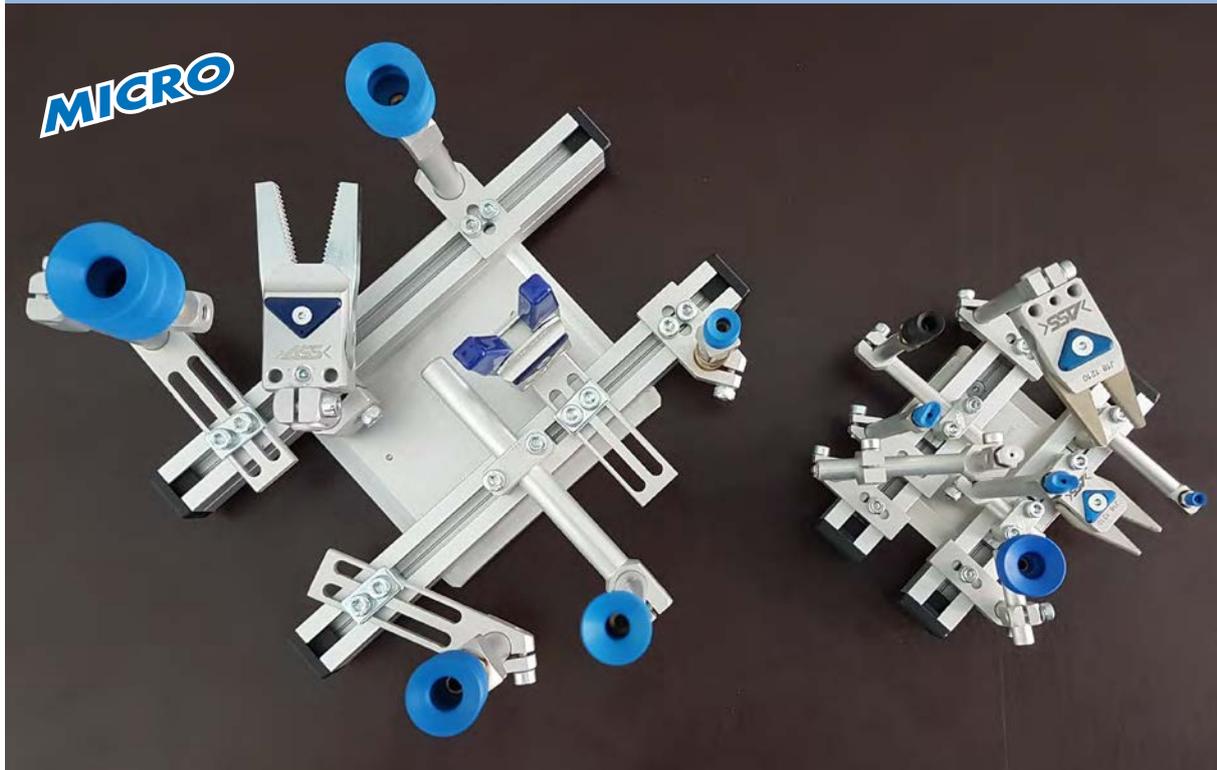
**Remarks:**

- for closing tubular profile ends
- holes for holding the tread caps should be deburred
- caps are simply inserted with a rubber hammer



Part No.	Description	A [mm]	B [mm]	C [mm]	Material	Weight [g]
3-190-20-00	ADK R 20 Profile End Cap, round Ø20	20	11.5	5	Plastics	1
3-190-25-00	ADK R 25 Profile End Cap, round Ø25	25	11.5	5	Plastics	3
3-190-30-00	ADK R 30 Profile End Cap, round Ø30	30	11.5	5	Plastics	4
3-190-40-00	ADK R 40 Profile End Cap, round Ø40	40	11.5	5	Plastics	5

## Micro Series EOAT Kit



### A gripping system for the niche: Micro System for tight spaces and the smallest components

The innovative Micro System for tight spaces and the smallest components from ASS closes the gap: With a clamping diameter of 6 millimeters, the Micro System is significantly smaller and lighter than the previous smallest system with a 10 millimeter clamping diameter. The Micro System is used wherever small injection molding machines or small linear handlings and other micro machines are in use and there is little space in the tool. With the new system, even the smallest components, which were previously case parts, can now be handled easily and cleanly in the tightest of spaces.

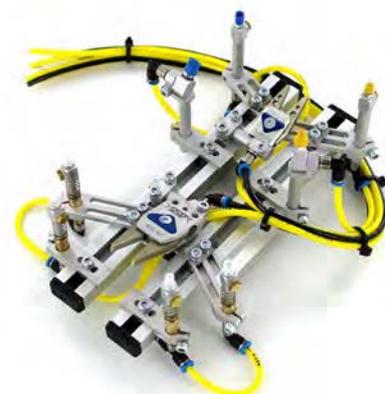
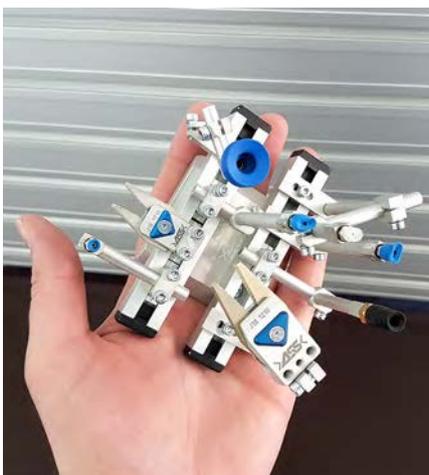
The Micro System was awarded the „RHEINLAND GENIAL“ innovation prize.

#### Remarks:

**For use in small injection moulding machines, linear handling machines or other miniature machines where space is limited or only a low handling weight is allowed.**

#### For an example comparison:

- Micro System: 239g, B85xH70xT75 (right side on top image)
- 10mm clamping diameter: 436g, B125xH110xT115 (left side on top image)
- Particularly for setting up a micro gripper the small quick change systems SWM in sizes 0 or 01 and the semi-automatic quick change system SWH 50 are suitable.
- L-profile + GPM => When using a base plate with the L-profile, it is recommended to countersink the screw head in the profile in order to remain the micro components displaceable.



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Quick Change  
Systems

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Profiles  
Channel Nuts

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**850**  
Pneumatics

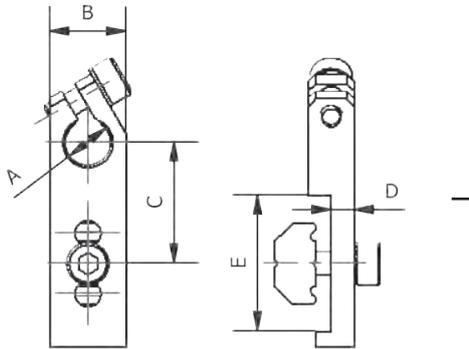
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 990 | Tubular- and Micro-System

## WST L 6 U / Universal Angle Clamp „Micro Series“

**MICRO**



**Remarks:**

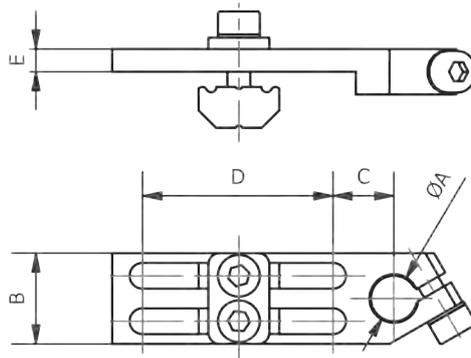
**Application: has the advantage of many possible applications: can be mounted form fit or adjustable**

- just one tool needed: hexagon socket screw key
- mounted directly on profile
- allows compact gripper design

Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-103-01-00	WST L 6 U	6	10	16	3	18	Aluminium	7

## WSL L 6-25 U / Universal Long Angle Clamp „Micro Series“

**MICRO**



**Remarks:**

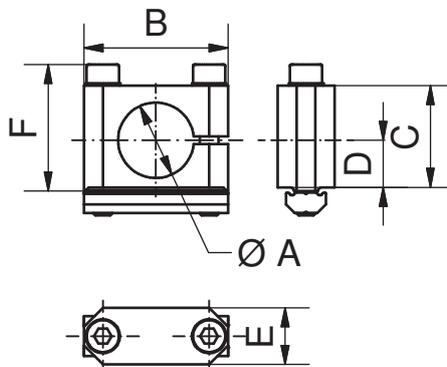
**Application: universal Long Angle Clamp e.g. for mounting Gripper GRZ or other components with 6mm connection to profiles**

- same allen screw size for clamping and channel nuts
- can be mounted directly on profiles
- allows compact gripper design

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-105-06-00	WSL L 6-25 U	6	12	8	25	3	Aluminium	11

## KVB L 6 / Cross Connector „Micro Series“

**MICRO**



**Remarks:**

**Application: gripper arms, adapters, etc. with 6mm connection can be clamped at an angle of 90 ° to the profile**

- Cross Connector is mounted directly to the profile
- exact positioning through an additional positive connection
- by loosening a screw, various settings can be made without changing the position of the KVB

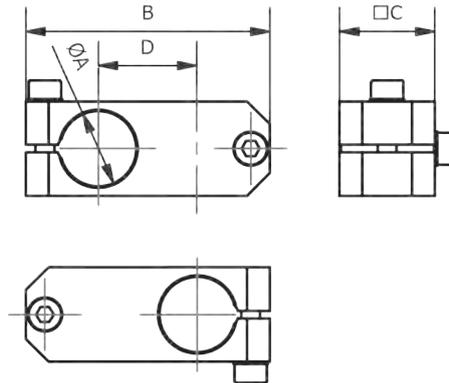
Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-115-01-00	KVB L 6	6	15	9	4,5	8	12,5	Aluminium	11

## KKS 6-6-10 / Cross Connector „Micro Series“

**Remarks:**

**Application:** connects two components with clamping diameter 6mm at a 90° angle

- both clamps can be set independently



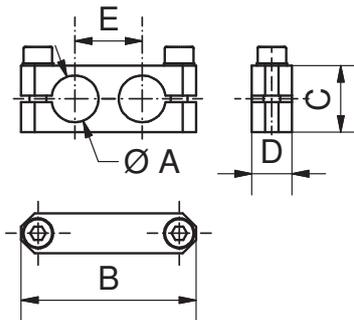
Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	Material	Weight [g]
1-115-39-00	KKS 6-6-10	6	25	10	10	Aluminium	6

## PKS / Parallel Connector „Micro Series“

**Remarks:**

**Application:** connects two components with clamping diameter 6mm at parallel arrangement

- both clamps can be set independently

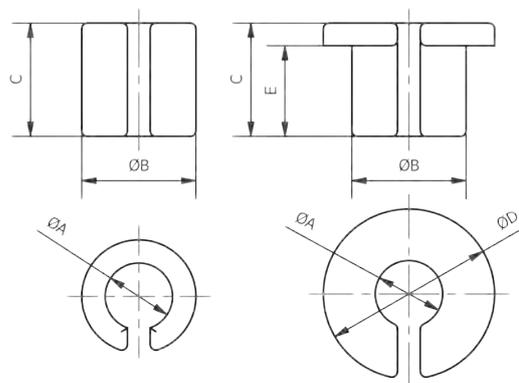


Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-115-59-00	PKS 6-6-10	6	25	10	8	10	Aluminium	5

## RMB-ROB / Reduction with and without collar „Micro Series“

**Remarks:**

**Application:** to connect the Micro Series (6mm clamping diameter) to clamping diameter 10mm



Part No.	Description	ØA [mm]	ØB [mm]	C [mm]	D [mm]	E [mm]	Material	Weight [g]
1-116-00-16	RMB 0610-10	6	10	10	15	8	Polyamide	<1
1-116-00-17	ROB 0610-10	6	10	10	-	-	Polyamide	<1

**000**  
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**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
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**190**  
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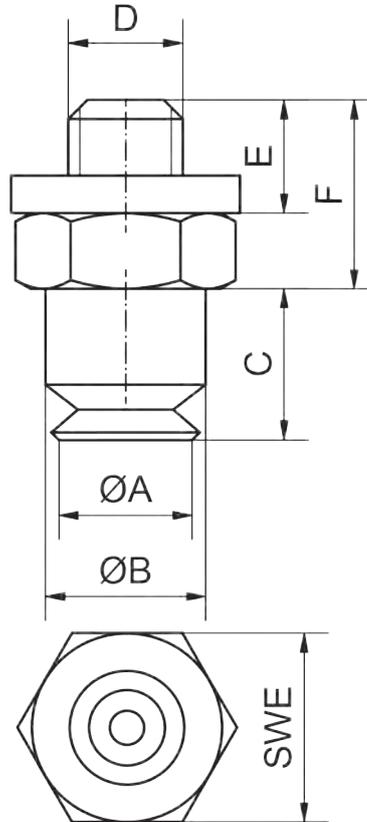
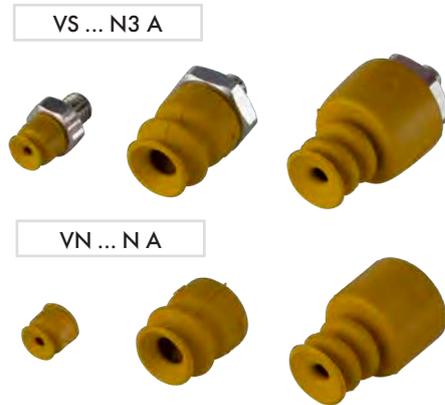
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 990 | Tubular- and Micro-System

## VS N3 A / VN N3 A / Vacuum Cups Nitril, antistatic „Micro Series“

MICRO



**Remarks:**

**Application: antistatic Vacuum Cups for the Micro Series**

- to avoid electrical charging and rapid discharge
- Versions with 1, 2 and 3 bellows available
- VS ... N3 A:  
complete vacuum cup: suction cup with mounted adapters
- VN ... N3 A:  
suction cup without adapter
- VSA ...:  
Adapter for suckers
- other matching vacuum cups suitable for the Micro Series can be found in category 220 (VS 2, VN 2, VS 3 and VN 3)

**Vacuum Cup VS N3 A, complete (suction cup with adapter)**

**Suction Cup VN N3 A (suction cup without adapter)**

**Adapter VSA for suction cup VN**

Part No.	Description	Part No.	Description	Part No.	Description
1	1-226-12-00 VS 1-2 N3 A	1-226-12-01	VN 1-2 N A	1-290-05-00	VSA 5
2	1-226-14-00 VS 1-3,5 N3 A	1-226-14-01	VN 1-3,5 N A	1-290-05-00	VSA 5
3	1-226-15-00 VS 1-5 N3 A	1-226-15-01	VN 1-5 N A	1-290-04-00	VSA 4
4	1-226-26-00 VS 2-6 N3 A	1-226-26-01	VN 2-6 N A	1-290-04-00	VSA 4
5	1-226-27-00 VS 2-11 N3 A	1-226-27-01	VN 2-11 N A	1-290-16-00	VSA 16
6	1-226-35-00 VS 3-5 N3 A	1-226-35-01	VN 3-5 N A	1-290-17-00	VSA 17
7	1-226-37-00 VS 3-7 N3 A	1-226-37-01	VN 3-7 N A	1-290-16-00	VSA 16
8	1-226-39-00 VS 3-9 N3 A	1-226-39-01	VN 3-9 N A	1-290-16-00	VSA 16

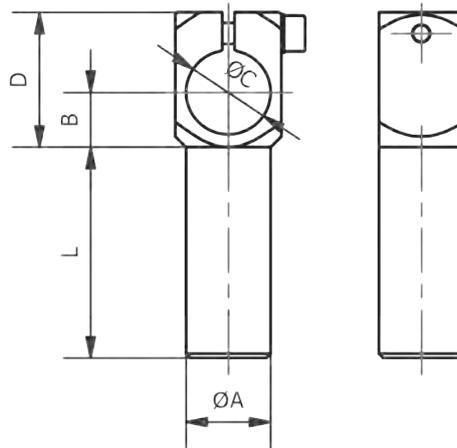
	Material	Working Area [mm]	Operating [cm <sup>2</sup> ]	Holding Force [N]	Push fit	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	SWE [mm]
1	Nitril antistatic	1	0.007	0.05	x	2	4.2	4	M3	3	5	5
2	Nitril antistatic	1	0.007	0.05	x	3.5	4.2	4	M3	3	5	5
3	Nitril antistatic	1.5	0.02	0.1	x	5	7.7	6.5	M3	3	5	5
4	Nitril antistatic	3	0.07	0.4	x	6	7.2	9	M3	3	5	5
5	Nitril antistatic	4.5	0.16	0.9	x	11	10	16	M3	3	5	5
6	Nitril antistatic	2.6	0.05	0.3	x	5	7	14	M3	3	5	5
7	Nitril antistatic	1.8	0.03	0.15	x	7	9	14	M3	3	5	5
8	Nitril antistatic	3.8	0.11	0.7	x	9	9	15	M3	3	5	5

## WKA 6-6 / Angle Arm „Micro Series“

**Remarks:**

**Application: e.g. for easy mounting of components with clamping diameter 6mm**

- easy to handle
- secure connection by cylinder screw



**MICRO**



Part No.	Description	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]	Material	Weight [g]
1-320-63-00	WKA 6-6-20	6	4.5	6	12	20	Aluminium	3
1-320-66-00	WKA 6-6-40	6	4.5	6	12	40	Aluminium	4
1-320-69-00	WKA 6-6-60	6	4.5	6	12	60	Aluminium	6

## GSE U 6 / Gripper Arm for Suction Cups with air duct „Micro Series“

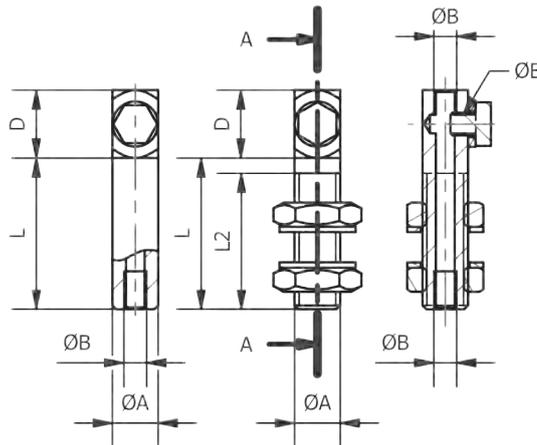
**Remarks:**

**Application: for mounting vacuum cups to the micro EOAT**

- vacuum connection sideways or air duct

**Scope of delivery:**

- sealing screw included



**MICRO**

1-311-30-00  
1-311-31-00  
1-311-32-00

1-311-35-00  
1-311-36-00  
1-311-37-00



Artikelnummer	Bezeichnung	ØA [mm]	B	D [mm]	L [mm]	L2 [mm]	Material	Weight [g]
1-311-30-00	GSE U 6-M3-M3-20	6	M3	9	20	-	Aluminium	3
1-311-31-00	GSE U 6-M3-M3-40	6	M3	9	40	-	Aluminium	4
1-311-32-00	GSE U 6-M3-M3-60	6	M3	9	60	-	Aluminium	6
1-311-35-00	GSE U M6x1-M3-M3-20	M6	M3	9	20	18	Aluminium	5
1-311-36-00	GSE U M6x1-M3-M3-40	M6	M3	9	40	38	Aluminium	6
1-311-37-00	GSE U M6x1-M3-M3-60	M6	M3	9	60	58	Aluminium	7

**000**  
Quick Change Systems

**050**  
Profiles  
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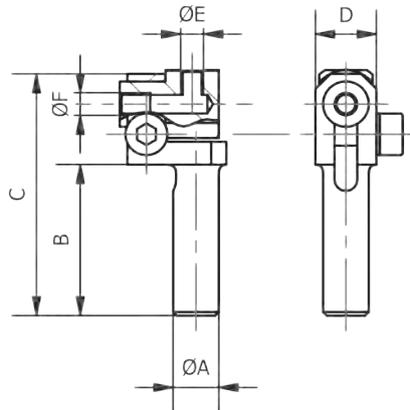
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 990 | Tubular- and Micro-System

## GGE 6 / Swivel Head Gripper Arm for Vacuum Cups „Micro Series“

**MICRO**



**Remarks:**

**Application: for mounting vacuum cups at an angle**

- swivel head can be clamped separately by cylinder screw
- air connection (F) on the side

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Material	Weight [g]
1-315-00-00	GGE 6-M3-M3-20	6	20	32	8	M3	M3	Al	4
1-315-01-00	GGE 6-M3-M3-40	6	40	52	8	M3	M3	Al	6
1-315-02-00	GGE 6-M3-M3-60	6	60	72	8	M3	M3	Al	8

## GAF U 6 / GAF U 6 M / Spring Comp. Grip. Arm f. Vac.Cups, air duct „Micro“

**MICRO**

1-355-01-00

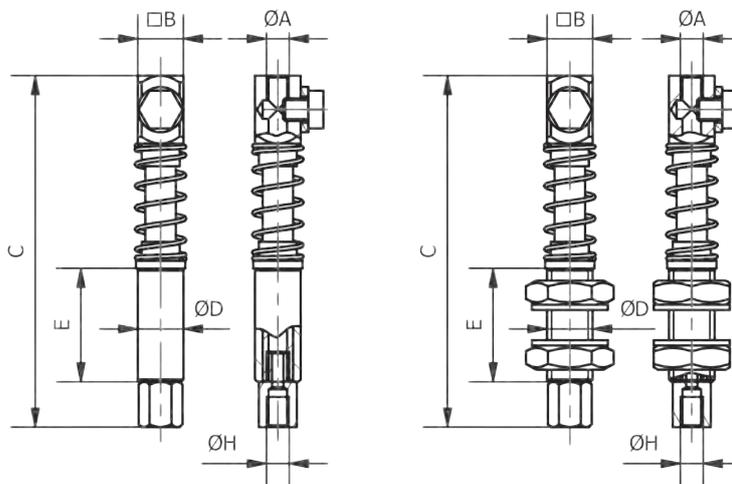
1-355-02-00



**Remarks:**

**Application: for mounting vacuum cups in the robot hand**

- for rotationally symmetrical vacuum cups
- vacuum cup can rotate relative to the clamping piece
- for best positioning of vacuum cups to the part to be removed
- spring travel to compensate for the ejector stroke
- gripper arm is guided with rotation enabled
- high quality stainless steel spring



Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	Spring travel [mm]	Material	Weight [g]
1-355-01-00	GAF U 6-M3-M3-10	M3	6	46.5	6	15	M3	10	Al/CuZn	6
1-355-02-00	GAF U M6-M3-M3-10	M3	6	46.5	M6	15	M3	10	Al/CuZn	9

## GRZ 06-06 / Gripper Size 06-06 „Micro Series“

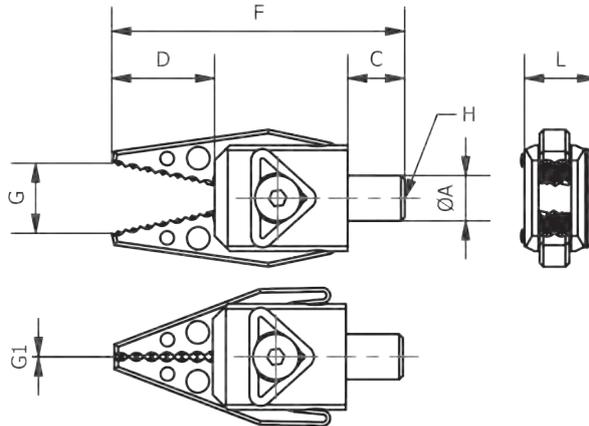
**Remarks:**

**Application: micro sized gripper GRZ**

- very lightweight
- very small and compact design
- single-acting gripper
- gripper jaws chequered
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



**MICRO**



Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-00-00	GRZ 06-06	6	7.5	13.5	39	10	0	M3	10	6	6.5

## GRZ 06-06 / Gripper Size 06-06 with EP Coating „Micro Series“

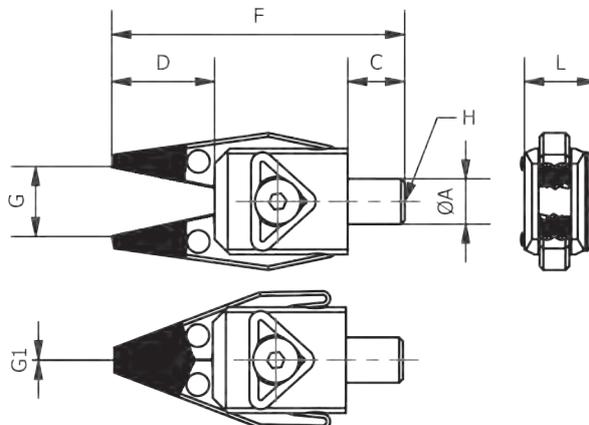
**Remarks:**

**Application: micro sized gripper GRZ with soft EP Coating, Shore 60**

- very smooth gripping with more friction
- very lightweight
- very small and compact design
- single-acting gripper
- gripper jaws with EP coating Shore 60, colour black
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only



**MICRO**



Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-02-00	GRZ 06-06 EP	6	7.5	13.5	39	10	0	M3	10	6	6.5

The EP-coating is an elastomer, so all dimensions are nominal.

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
Connectors

**220**  
Vacuum Cups

**224**  
Special  
Vacuum Cups

**230**  
Manifold

**290**  
Adapters for  
Vacuum Cups

**300**  
Gripper Arms

**400**  
Gripper  
Parallel Gripper

**450**  
Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

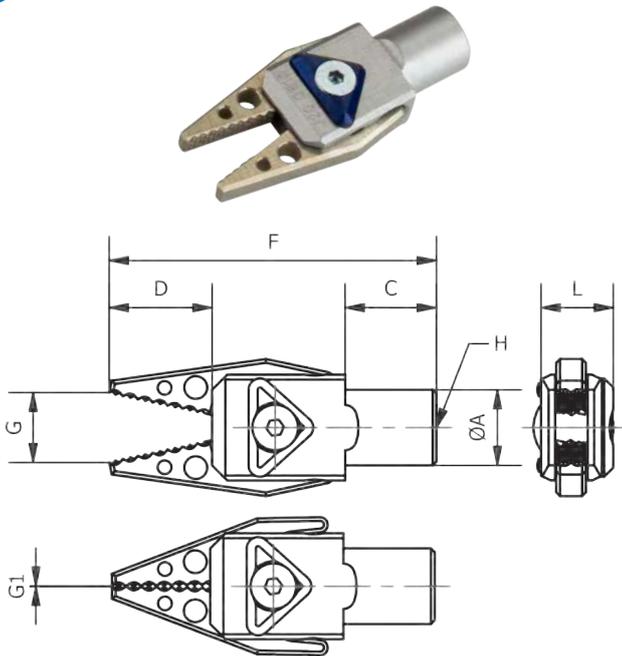
**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

# 990 | Tubular- and Micro-System

## GRZ 10-06 / Gripper Size 10-06 „Micro Series“

**MICRO**



**Remarks:**

**Application: micro sized gripper GRZ with clamping diameter 10mm**

- lightweight
- small and compact design
- single-acting gripper
- gripper jaws chequered
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories for example:**

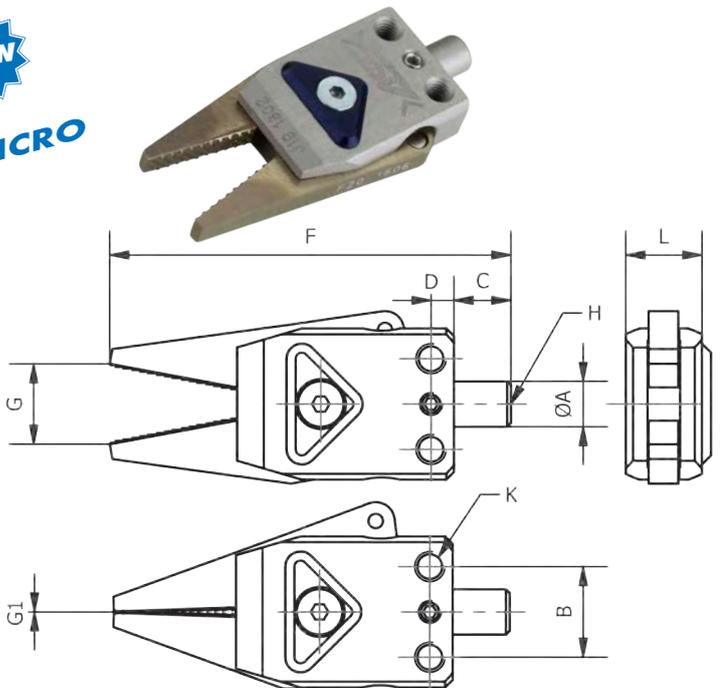
- extension with air duct VL U

Part No.	Description	ØA [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	L [mm]	Closing force max. [N]	Weight [g]
1-406-01-00	GRZ 10-06	10	12	13.5	43	10	0	M5	10	6	8

## GRZ 06-08 / Gripper Size 06-08 „Micro Series“

**NEW**

**MICRO**



**Remarks:**

**Application: gripper GRZ in miniature design suitable for the Micro System, known from the series GRZ 10-08**

- CM: chequered jaws
- BSG: chequered and hardened jaws
- ideal when a higher closing force is required for small robot hands (EOAT)
- lightweight
- small and compact design
- single-acting gripper
- gripper jaws chequered
- two pistons, Ø 8mm
- optionally equipped sensor mounting bracket and initiator
- » closing force measured at point of jaws at 6 bar
- » maximum air pressure is 6 bar, use dry and filtered air only

**Accessories for example:**

- Sensor Bracket SH GRZ 10-08
- adapter for board mounting AGP GRZ

Part No.	Description	ØA [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	G1 [mm]	H	K	L [mm]	Closing force max. [N]	Weight [g]
1-408-01-00	GRZ 06-08 CM	6	12	7.5	3	52.8	10	0	M3	M4	10	19	15
1-408-05-00	GRZ 06-08 CM BSG	6	12	7.5	3	52.8	10	0	M3	M4	10	19	15

**NEW**

## EOAT Training in our facility

Bring your sample part and build an robot hand (End-of-Arm-Tool) under the supervision of our application engineers. You will receive a customized training to meet your application needs. After the training you have a finished robot hand ready for setting-up in your injection moulding machine.

The training is for free, you just have to pay the components of the robot hand you take with you.

The training lasts approximately 6-8 hours. It consists a theoretical introduction and hands-on training on our gripper components in combination with your sample part.

**For your custom EOAT-Training date please contact us.**

## Robot gripper installation at your facility

Our service vehicles carry all components needed to build a standard robot hand (End-of-Arm-Tool).

**For your individual training please contact us.**

## Starter Kit

**Remarks:**

**Application: for starting to build EOAT based on ASS components**

- ASS Starter Kits are customized regarding your needs



Part No.	Description
Startbox L	Startbox L
Startbox X	Startbox X

## KUG / Glue and Polyurethane Pad

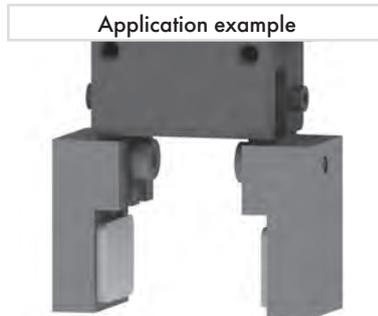
**Remarks:**

**Application: for bonding polyurethane to the jaws of parallel grippers (PGR-P), gripper fingers (GRF) or gripping (GRZ)**

- Polyurethane increases the friction between jaw and article and supports a better demoulding
- PU allows gentle and low-pressure gripping
- image can deviate
- » see application example

**Scope of Delivery:**

- incl. glue



Part No.	Description	Dimension polyurethane pad LxWxH [mm]
1-990-04-00	KUG 250-4	250x250x4
1-990-05-00	KUG 250-5	250x250x5

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
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Parallel Gripper

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Gripper Fingers

**460**  
Needle Gripper

**600**  
Nipper Bodies

**610**  
Nipper Blades

**700**  
Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

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Pneumatics

**990**  
Tubular System  
Micro System

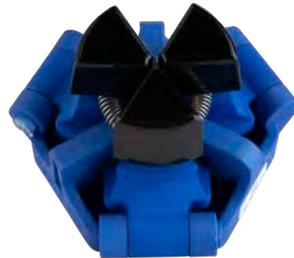
**990**  
PA-Forming  
Others

# 990 | Other / PA-Forming

## EP / Elastomeric Polyurethan Coating



Standardized gripping components with EP coating that are in stock: e.g. Gripper GRZ, Gripper Fingers GRF, ID Gripper IGP or Pressure Plates DST.



### Remarks:

- EP: Elastomere Polyurethane
- coating consists of a high strength Elastomere Polyurethane
- two types
- Shore A Hardness (+/- 5): 90
  - colour blue
- Shore A Hardness (+/- 5): 60
  - colour black

### Material Properties:

- there is a laboratory test certificate for lacque compatibility (LABS) of the EP Coating Shore Hardness 90 (color blue)
- abrasion resistant
- slip resistant
- silicone free
- Tensile Strength: 29 N/mm<sup>2</sup>
- Fracture Strain: 320%
- Wear Resistance: 3,5 mg (H 22 Rad)

### Advantages:

- secure grip
- reducing wear and tear
- electrically insulated
- surface protecting
- non marking
- energy absorbing
- temperature range -50°C to +90°C
- partial or full surface coating available

### Suitable for e.g.:

- Gripper jaws
- Gripper Finger
- Contour piece
- Brackets
- any component with part contact

Individual contours or adapted gripper jaws for GRZ Grippers, PGR-P Parallel Grippers or IGP ID Grippers can be provided with the non-marking EP coating. It is almost irrelevant what material the surface to be coated is made of.

We are at your disposal as a contact person for solving your tasks for a non-binding consultation.

Part No.	Description
ASS Robot Hand Kit (EOAT) Components	about all ASS Robot Hand Kit (EOAT) components can be partly or full-faced coated depending for individual functions
ASS PA-Forming (SLS Laser Sinter)	special components made of Polyamide can be partly or full-faced coated

**PA-Forming / 3D Printing made by SLS Laser Sinter**

**Remarks:**

- sintered gripper components in special design can be manufactured on request, for example:
  - jaws for parallel gripper PGR-P (for positive gripping)
  - jaws for grippers GRZ with adapter jaws, so that the article or sprue can be gripped in a form-fitting manner (GRZ 10-12 A, GRZ 10-12 A1, GRZ 14 D A, GRZ 20-16 A)
  - contour pieces for grippers, for exact positioning
  - contour reception for workpiece carriers, cutting stations, etc.
  - complete grippers made of polyamide
- 3D CAD data of the plastic workpiece can be used to produce precisely contoured parts
- sintered components can be coated with e.g. the EP coating or flock
- » see application examples

**Advantages:**

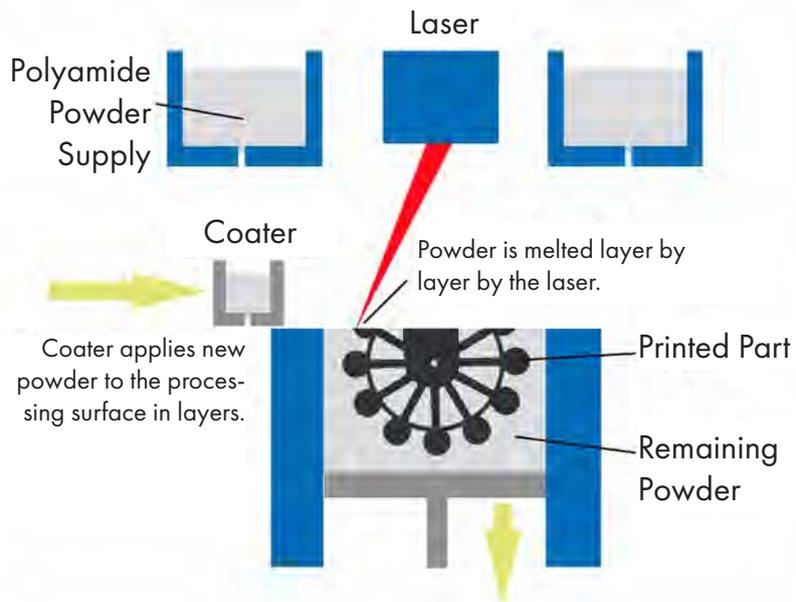
- very low weight
- combination of functions
- integration of internal air ducts or vacuum channels
- integration of functional components, such as movable ID gripper or structures
- time and cost savings
- geometric freedom of design
- multifunctional applications that are not possible with standard components
- combination of mechanical and vacuum gripping with sensors

**Material:**

- Fine Polyamide PA 2200
- PA 2200 is a powder based on Polyamide-12
- Working temperature range -40°C to +80°C, higher temperature for a short time period is possible

PA-Forming / Select Laser Sintering / 3D Printing technology allows our engineers to custom design EOAT components or even complete End-of-Arm-Tooling. Our engineers design is based upon 3 D CAD data of the part that needs to be handled.

The cost is not influenced by the complexity of the design. The finished gripper will weigh less than any traditional alternative and can include process relevant options like ID gripping and internal channels eliminating the need for pneumatic hose. The material used is Polyamide and has similar properties as Nylon or Delrin.



*Schematic representations SLS method*

**000**  
Quick Change Systems

**050**  
Profiles  
Channel Nuts

**100/115**  
Clamps

**120**  
Profile  
Connectors

**190**  
Profile  
Accessories

**200**  
Vacuum Cup  
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Special Elements

**800**  
Electrics and  
Sensors

**850**  
Pneumatics

**990**  
Tubular System  
Micro System

**990**  
PA-Forming  
Others

**000**  
Quick Change  
Systems

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Micro System

**990**  
PA-Forming  
Others

# 990 | Other / PA-Forming

## Application examples / 3D Printing



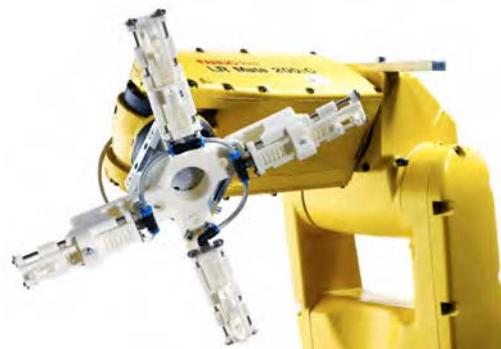
*Lightweight Needle Gripper NGR including Polyamide party:  
reduced weight: 37%*



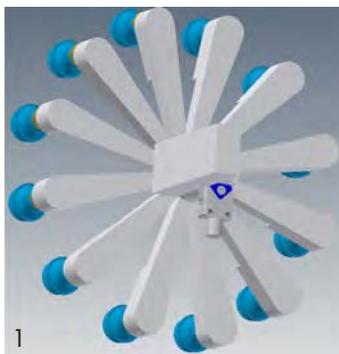
*ID Gripper IGP with integrated expansion-bellow*



*Flocked counter piece for a very soft discard for sensible parts*



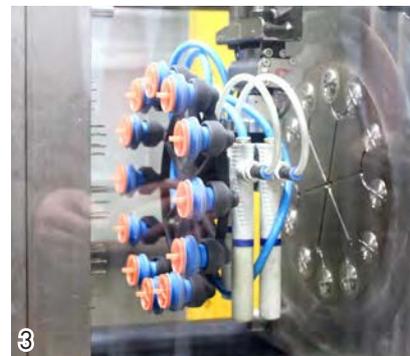
*Lightweight EOAT with parallel grippers made of Polyamide*



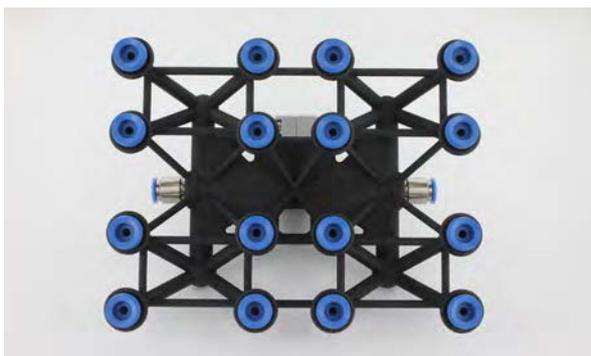
*1 First theoretical CAD modell...*



*2 ...assembled EOAT with Polaymide body,  
Gripper and Vacuum Cups...*



*3 ...finished EOAT in injection moulding  
machine.*



*Lightweight EOAT with integrated air ducts*



*EP-coated counter piece for specialised handling*

## PGR-E / Parallel Gripper, electrical

**Remarks:**

**Application: electrical Parallel-gripper with up to nine teachable positions**

- load-bearing and low-play T-slot guide for safe and precise handling with high load ratings
- drive concept step motor
- housing made of high-strength aluminum alloy for minimum weight and high stiffness
- can be used as external or internal gripper
- centering possibilities on the gripping jaws
- easy to mount
- clamping diameter 14mm
- » external control unit is required

**Special component:**

**Price and current delivery time on request!**



## NGR 16-18 EE / Needle Gripper, adjustable, electrical

**Remarks:**

**Application: electrical Needlegrripper with up to nine teachable positions**

- extra-thin needles with a diameter of 0.7 mm
- needle depth is teachable
- easy-exchanging needle package
- sensor option integrated
- easy to mount
- clamping diameter 20mm
- » external control unit is required

**Special component:**

**Price and current delivery time on request!**



**000**  
Quick Change Systems

**050**  
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Channel Nuts

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Clamps

**120**  
Profile  
Connectors

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Nipper Blades

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Pneumatics

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Tubular System  
Micro System

**990**  
PA-Forming  
Others

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Micro System

**990**  
PA-Forming  
Others

# 990 | Other / PA-Forming

## Bin Picking

**Bin-Picking ...works!**

**Aim**

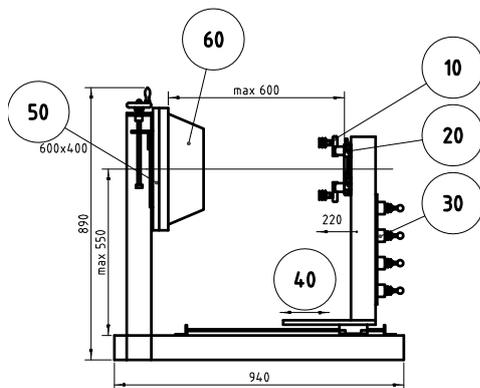
- ready-to-go system
- user-friendly
- suitable even for small bulk material

**Approved on customer´s part**

- Aluminium-tube for engine cooling
- feasibility study, conception, designing and planning und integration by ASS



## Assembly Fixture / Table Top

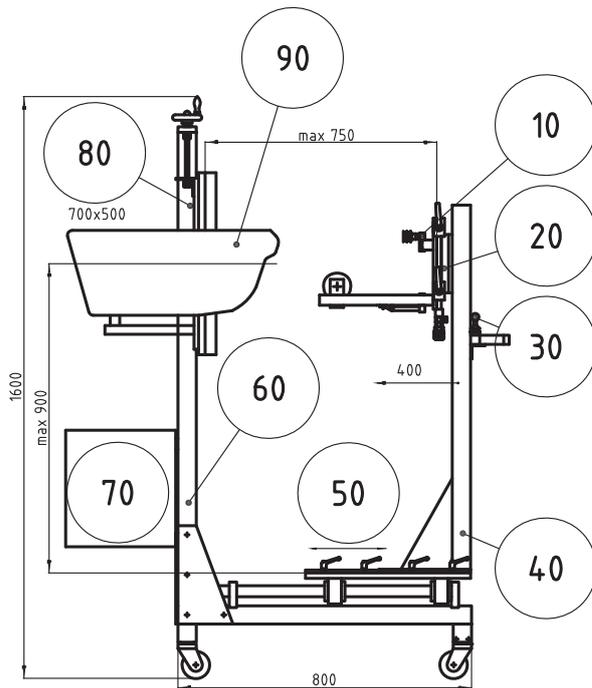


For simple assembly of ASS gripper parts

**Procedure**

1. mount the plastic parts on the clamping plate in a right position (same way as injection mould)
2. mount the profile on the gripper base plate and push it into the quick change system
3. bring the gripper's movable side to the plastic part
4. assemble all other necessary ASS gripper parts and find out the right position of the elements with moving the base frame to the plastic part several times
5. now check the vacuum and grip functions using the function valves

Part No.	Description
1-082-12-00	Assembly fixture / table top



For simple assembly of ASS gripper parts

Procedure

1. mount the plastic parts on the clamping plate in a right position (same way as injection mould)
2. mount the profile on the gripper base plate and push it into the quick change system
3. bring the gripper's movable side to the plastic part
4. assemble all other necessary ASS gripper parts and find out the right position of the elements with moving the base frame to the plastic part several times
5. now check the vacuum and grip functions using the function valves

- 10 - Robot hand
- 20 - Quick change system robot hand
- 30 - Function valve (compressed air and vacuum)
- 40 - movable side
- 50 - Channel unit (stroke 240 mm)
- 60 - fix side
- 70 - filling box
- 80 - clamping plate
- 90 - plastic part

**000**  
Quick Change  
Systems

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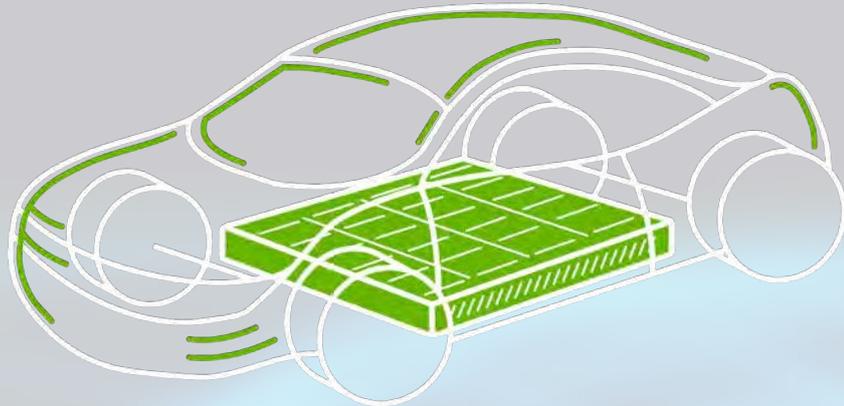
**990**  
PA-Forming  
Others

Part No.	Description
1-083-00-00	Assembly fixture / mobile

## Components & solutions for E-Mobility

From individual cells to the finished battery pack, from the plug to the complete charging station or from the smallest plastic parts to complex interior and exterior parts.

With our mechatronic components, we offer you solutions that have been tried and tested in practice. A lot is possible for full performance in all areas of e-mobility.



As a German manufacturer with almost 40 years of experience, we produce climate-neutrally and supply you with customer-oriented and high-quality products and solutions for handling your products. The modular system enables gripping solutions to be adapted to all product areas and production processes.

As a contact person for your individual tasks, we are at your disposal for a non-binding consultation.

### HEAT RESISTANT

Gripping components and insulators that come into contact with components with heat-resistant properties enable process-reliable handling of hot materials. Organo sheets or pultruded components can be safely moved even in heating fields.



### NON-MARKING

Special coatings and adapted or adjustable force regulations enable parts with sensitive surfaces to be handled. For example, painted or thin-walled parts can be moved safely without restrictions.

### SCALABLE

The large selection of standardized mechatronic components of different sizes enables a pronounced variety of variants.

The spectrum that can be grasped ranges from the smallest plugs to body parts - regardless of the material, be it parts made of solid or flexible materials.



## COMPACT

Flat components and their possible combinations allow gripping solutions in the tightest of spaces, for example when inserting electronic components, cell modules or cell stacks in battery housings.

Our award-winning and innovative Micro System is also available for the smallest parts.

## FLEXIBILITY

Semi-automatic quick-change systems and combinable gripping components enable a quick product change within your automation and thus offer a high degree of adaptability to your processes.

## CONNECTION

Our extensive modular system contains numerous cross-system connections to enable you to integrate the components economically and easily.

## ABILITY TO DELIVER

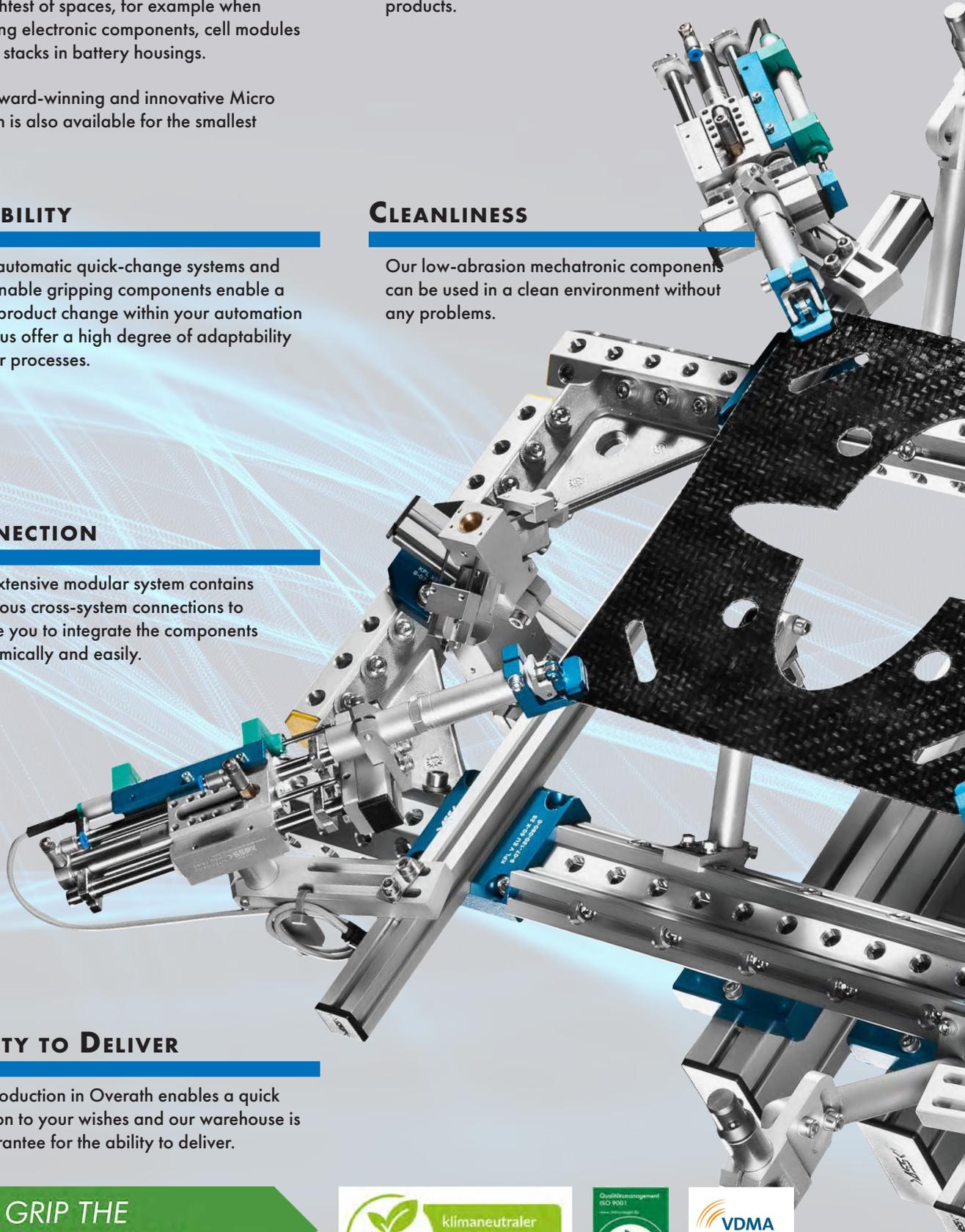
The production in Overath enables a quick reaction to your wishes and our warehouse is a guarantee for the ability to deliver.

## SOLUTION ORIENTED

Solutions for individual tasks are one of our core competencies - from prototypes to series products.

## CLEANLINESS

Our low-abrasion mechatronic components can be used in a clean environment without any problems.



**GRIP THE  
GREEN TURN.**

CO<sub>2</sub> NEUTRAL PRODUCTION



## Solutions for Flexible Materials

Increasingly lighter construction methods require the use of components made of fiber composite materials. Every gram of material saved counts, and not only in electromobility. A wide variety of flexible materials often have to be moved in a process-reliable manner.

With our mechatronic needle grippers, we offer you solutions that have been tried and tested in practice - with excellent properties!

Small and precise piercing depths for safe gripping and lifting of stacks, inserting parts to be back-injected into the injection molding machine, picking up high-temperature masses and organo sheets, through to handling foam and felt mats with extra-long needles.

Regardless of whether functional insulation materials, sensitive interior materials or other materials are being handled: We at ASS Maschinenbau GmbH offer you the needle gripper that suits your requirements directly from stock or develop a tailor-made and process-reliable solution for you in the shortest possible time.

As a German manufacturer with almost 40 years of experience, we produce climate-neutrally and supply you with customer-oriented and high-quality products and solutions for handling your products. The modular system enables gripping solutions to be adapted to all product areas and production processes.

We are at your disposal as a contact person for solving your tasks for a non-binding consultation.



### METHODICALLY

A needle gripper solution is available for every handling task.

Flexible materials and components made of fiber composite or foam materials and textiles of all kinds can be handled reliably.

### TESTING & FIELD TRIALS

Material tests are particularly important for limp or adhesive materials.

We would be happy to advise you on site or carry out tests at our site in Overath. We will find solutions for you and your handling tasks - regardless of whether they are prototypes or series production.

## EXCERPT OF THE ASS NEEDLE GRIPPERS

The examples of our needle grippers show the diversity of variants. Further special versions with, for example, individual piercing angles or depths can be realized at short notice thanks to our own development and production - and this is usually at a price level similar to that in a catalogue.

Each needle gripper has its individual advantages and our technical advice will work with you to determine the needle gripper that suits your application.

Part No.	Description	Number of needles	Penetration depth [mm]	Penetration angle [°]	Needle Ø [mm]	Contact area	Span, max. ca. [mm]	limp/flexible	tempered	sticky	voluminous	others
1-460-03-00	NGR X 16-10	4	0-5	30	2	Aluminium	65	x				
1-460-06-00	NGR 12	4	0-4	45	2	Aluminium	58	x				* 1
1-460-08-00	NGR 12-6	6	0-4	45	2	Aluminium	55	x				
1-460-09-00	NGR 12 D	4	0-2,5	30	2	Aluminium	116	x				* 2
1-460-10-00	NGR 12-10 D	10	0-2,8	20	2	PTFE	130	x	x	x		* 3
1-460-12-00	NGR 12 DL	4	0-2,5	30	2	Polyamide	121	x				* 2, 7
1-460-13-00	NGR 12-8 DK	8	0-2,5	30	2	Aluminium	120	x				* 2, 7
1-460-14-00	NGR 12-8 D	8	0-2,5	30	2	Aluminium	116	x				* 2
1-460-19-00	NGR 16-18 EZ	18	0-1,8	30	0,7	Steel	36	x				* 4, 8
1-460-25-00	NGR 20-6-25 D	6	0-25	45	1,5	PTFE	233	x	x	x	x	* 5, 8
1-460-30-00	NGR 16-10-7 D	10	0-7	30	1,5	PTFE	123	x	x	x		* 6, 8
1-460-33-00	NGR 16-10-15 D	10	0-15	30	1,5	PTFE	177	x	x	x	x	* 6, 8
1-460-70-00	NGR 12-6 DS A	6	0-5	30	2	Aluminium	100	x	x			* 6, 8
9-07-460-060-0	NGR 12-10 D EST	10	0-4,5	20	2	PTFE	130	x	x	x		* 3
9-07-460-157-0	NGR 12-6 DS A TP	6	0-5	30	2	PTFE	100	x	x	x		* 6, 8
9-07-460-200-0	NGR 25-6-88 D	6	0-88	45	4	PTFE	555	x	x	x	x	* 5, 8
9-07-460-210-0	NGR 32-36-50 D	36	0-55	24	4	PTFE	755	x	x	x	x	* 5, 8

- \* 1 - magazine rod, centering mandrel or similar can dip into it
- \* 2 - magazine rod, centering pin or similar can dive trough completely
- \* 3 - specially designed contact surface to wipe off buildup
- \* 4 - additional cover for very thin fabrics included
- \* 5 - also suitable for SMC materials, for example
- \* 6 - can be bundled, needles additionally coated with PTFE
- \* 7 - weight-optimized lightweight construction
- \* 8 - Basic and working position can be queried as an option

## NON-STICKING

Special coatings enable handling of sticky and adhesive materials. For example, sheet mold compound (SMC) and other sticky fiber matrix semi-finished products can be handled without leaving any residue.

## HEAT RESISTANT

Needle grippers and insulators with heat-resistant properties that come into contact with components enable process-reliable handling of temperature-controlled materials. Even in heating fields, organo sheets or tough compound masses can be moved safely. Components such as heat-resistant vacuum cups are also available.



**A**

A3 HEU 10 / Mounting Adapter for HEU 10 with 3 Mounting Options	314
<b>AAE / Sprue Shifter for gripper GRZ</b>	<b>175</b>
AD 20 GRZ 20 / AD 14 GRZ 20 U / Adapter	186
AD GRZ 14 U / Adapter with Air Duct	174
<b>AD GRZ 20 S / Adapter, sidewise connection</b>	<b>187</b>
<b>AD GRZ 32 S / Adapter for mounting GRZ 32 sidewise</b>	<b>194</b>
AD IGB / Adapter for IGB	204
ADK / Profile End Caps	96
ADK R / Profile End Cap, round	350
ADP / Profile Channel Cover	67
ADS / Exhaust Throttle-Silencer	342
ADU / Universal Mounting Bracket	315
ADZ / Adapter for Short Stroke Cylinder KHZ and SZD	301
AE HEU / Mounting Adapter for HEU Stroke Unit	312
AGP GRZ / Adapter for GRZ Board Mounting	166
ANS 20 PA EP / Gripper Holding Bracket, with EP coating	220
<b>ANS AL EP CS / Holding Bracket with EP coating and monitoring</b>	<b>219</b>
ANS PA / Gripper Holding Bracket	218
ANS PA K / Gripper Holding Bracket, convex	220
AP ADU / Flange for Adapter Plate ADU	315
AP HEU / Mounting Adapter for Stroke Units to a Profiles	313
AP PGR / Mounting Bracket for PGR-P and PGR	198
<b>AP-P PGR / Adapter for PGR-P and PGR for mounting to profiles</b>	<b>198</b>
Application examples / 3D Printing	362
Application examples 000	18
Application examples 050	56
Application examples 100/115	69
Application examples 120	79
Application examples 190	96
Application examples 200	98
Application examples 220	101
Application examples 224	119
Application examples 230	127
Application examples 290	129
Application examples 300	133
Application examples 400	156
Application examples 450	206
Application examples 460	221
Application examples 600	234
Application examples 700	269
Application examples 800	319
Application examples Tubular-System	343
ASN AQ / Automatic – Square	239
ASN AR / Automatic-Round-Single Action	237
ASN AR VS / Nipper Body, Automatic-Round-Strengthened	241
ASN ARD / Automatic–Round–Double Action	239
ASN ARK / Automatic–Round–Power Booster	238
ASN ARKS / Nipper Body, Automatic-Round-Power Boost-Durable	240
ASN ARKS KS / Mounting Bracket for Nipper Body ASN ARKS	246
ASN G / Stationary Cutting Unit „Guillotine“	247
ASN HP / Mounting Bracket for ASN SE	242
ASN HR / Manual-Round	237
ASN HRK / Manual-Round with Power Booster	238
ASN SB / Swivel Bracket for Nipper Body	245
ASN SE / Nipper Bodies 90° with Stroke	242
ASN SH / Sensor Mounting Bracket for Nipper Bodies	246
AS-P PGR-P / Sensor Bracket Precise for PGR-P	197
Assembly Fixture / Mobile	365
Assembly Fixture / Table Top	364
ASY / Adapter Y-Form	323
ASZ AH / Sprue Gripper for Nipper Bodies ASZ and ASN	243
ASZ HS / Mounting Bracket for Nipper Body ASN	244
ASZ KA / Combination Clamp for Sprue Gripper + Nipper ASZ / ASN	243
ASZ KF / Spring Loaded Mounting Bracket for ASN	245
ASZ KS / Mounting Bracket for Nipper Bodies ASN	244
<b>ASZ KS BS / Mounting Bracket for Nipper Bodies ASN, Blue Scale</b>	<b>244</b>
AU HEU / Mounting Adapter for HEU Stroke Unit	313
AU HUZ-P / Adapter for HUZ-P	287
AVA / Adapter, male	130
AVL / Adapter, female	130
AVS / Adapter for VAS-SBR	130

**B**

Bin Picking	364
-------------	-----

**C**

Category 000	18
Category 050	56
Category 100/115	69
Category 120	79
Category 190	96

Category 200	96
Category 220	101
Category 224	119
Category 230	127
Category 290	129
Category 300	133
Category 400	156
Category 450	206
Category 460	221
Category 600	234
Category 610	248
Category 700	269
Category 800	319
Category 850	332
Category 990	343
Category 990	359
Cutting abilities Nipper Blades	248

**D**

DB / Stroke Reducer	299
DKS / 90° Mounting Bar	76
DKZ / Mounting Bar, central	297
DPL / Pressure Plate for Short Stroke Cylinder	305
DPL PU / Pressure Plate for Short Stroke Cylinder	305
Draw Tube 20x100 NGR 12-10 D	230
DRV / One Way Restrictor	337
DST / Pressure Plate	305

**E**

EOAT Starter Kit	359
EOAT Training in our facility	359
EP / Elastomeric Polyurethan Coating	360
<b>EPL / End Plate for Profiles</b>	<b>89</b>
EVB / Corner Joint Plate	85
EVM / Bus Module	326
Exchange Bellows for ID Gripper IGB	205

**F**

FSL / Particle Filter for Vacuum or Pneumatic Lines	342
---	-----

**G**

G6A-GPM 3 / Robot Hand Base Frame based on GPM	54
<b>G6A-SWH G / Robot Hand Base Frame based für SWH</b>	<b>55</b>
GAF / Spring Compensated Gripper Arm for Vacuum Cups	148
GAF U / Spring Comp. Gripper Arm for Vacuum Cups, with air duct	149
GAF U 6 / GAF U 6 M / Spring Comp. Grip. Arm f. Vac.Cups, air duct „Micro Series“	356
GAZ / Gripper Arm for Short Stroke Cylinder KHZ and SZD	301
GAZ S / Gripper Arm for Short Stroke Cylinder with Swivel	302
<b>GAZ SK / Gripper Arm for Short Stroke Cylinder with Swivel, conical clamping</b>	<b>303</b>
GB / Tap Drill	97
GB PGR / Unmachined Jaws for Parallel Gripper	197
GEO 10 / Housing for Mechanical Switch SEO 10	322
GFD 90 / Double Action, Cam Locking Gripper Finger	213
GFV U / Gripper Arm, spring comp., lock. ag. rotation, w. air duct	150
GG-20-NGR / Spring compensated Gripper Arm for NGR 12-10 D	230
GGE / Swivel Head Gripper Arm for Vacuum Cups	147
GGE 14...F / Gripper Arm for Photoelectric Sensor LES – 6	321
GGE 6 / Swivel Head Gripper Arm for Vacuum Cups „Micro Series“	356
<b>GGG / Gripper Arm, spring comp., locked against rot., for GRZ</b>	<b>143</b>
GGG 90 / Gripper Arm, spring comp., lock against rot., for GRZ, 90°	143
GGK / Gripper Arm, spring compensated, with a Linear Guidance	153
<b>GGK A / Gripper Arm, linear guidance, spring comp., lock.ag.rot., axial</b>	<b>154</b>
<b>GGK A R / Gripper Arm, linear guidance, rotation free, axial</b>	<b>155</b>
<b>GGO / Gripper Arm for Oval Vacuum Cups</b>	<b>144</b>
GGs / Gripper Arm, spring comp., lock. ag. rot., for Vacuum Cups	152
GGs W / Gripper Arm, spring comp., lock. against rotation, +/-90°	142
GGW / Gripper Arm, +/-90 degree	141
G-HUS 32-20 / Stroke Unit for Vacuum Cups, locked against rotation	290
<b>GHV ND / EOAT (Robot Hand) Holding Fixture, new design</b>	<b>36</b>
GHV SWH / Holding Fixture for SWH	50
<b>GIF U T / Gripper Arm, internal spring, telescope</b>	<b>151</b>
GLA / Elbow Gripper Arm	137
GLA BS / Elbow Gripper Arm, Blue Scale	137
<b>GLA K / Elbow Gripper Arm, conical clamping</b>	<b>138</b>
GLA V / Elbow Gripper Arm, heavy duty	139
GLA V BS / Elbow Gripper Arm, heavy duty, Blue Scale	139
GLA VM / Elbow Gripper Arm, heavy duty, mirrored	140
<b>GP HEU / Adapter Plate for Stroke Unit</b>	<b>311</b>
GP SWH G / EOAT Base Plate for SWH	44
GPG / EOAT (Robot Hand) Base Plate features Ball Bushings	37

GPG-P / EOAT (Robot Hand) Base Plate, pneumatic	38	<b>IGB H/ Innengreifer, Bellow, Lifting</b>	<b>203</b>
GPM / EOAT (Robot Hand) Base Plate	26	IGP 14 / ID Gripper	200
GPM / EOAT (Robot Hand) Base Plate	27	IGP 20 / ID Gripper	201
<b>GPM BP / EOAT Base Plate with Adapter</b>	<b>28</b>	IRK 4 / Proximity Switch for Parallel Gripper PGR-P and PGR	325
GPM E / EOAT (Robot Hand) Base Plate, Extruded	34	JU-Profile / „JU-System“	61
<b>GPM R / EOAT (Robot Hand) Base Plate, Tubular-System</b>	<b>344</b>		
<b>GPM-SWH / EOAT Base Plate for SWH</b>	<b>29</b>		
GPR / Adapter GPM to SWM	36	<b>K</b>	
GRF 35° / Gripper Finger	210	KAS / Cable Plug for SWS 011	52
<b>GRF 35° P2 / Gripper Finger with Precision Monitoring</b>	<b>212</b>	KBV / Square Joint Connector	83
GRF 90° / Gripper Finger	210	KG / Connector with Cable 3, 4 or 8 Pin Female	330
<b>GRF 95° P2 / Gripper Finger with Precision Monitoring</b>	<b>211</b>	KHR / Blade Holder	297
GRF 95° / Gripper Finger	209	KHR-S / Blade Holder, swivelling	298
<b>GRF 95° EP P2 / Gripper Finger w. EP covering and Precision Monitoring</b>	<b>211</b>	KHZ / Short Stroke Cylinder	299
	209	KK / Junction Box	326
GRF 95° EP / Gripper Finger with EP covering	209	KKB / X-JU: Twist on Cable and Hose Saddle	68
GRF SH AL / Sensor Mounting Bracket	217	KKP / Cable and Hose Channel	68
GRF SH AL and GRF SH ICS / Positioning of Sensor Clamp	214	<b>KKS / Cross Clamp</b>	<b>78</b>
GRF SH MFS + ICS / Sensor Mounting Bracket	217	KKS 6-6-10 / Cross Connector „Micro Series“	353
GRW 35° / Gripper Finger	212	KLB / Hook-and-Loop Tape	68
GRZ 06-06 / Gripper Size 06-06 „Micro Series“	357	KN HEU / Mounting Adapter for Needle Gripper on Stroke Units	311
GRZ 06-06 / Gripper Size 06-06 with EP Coating „Micro Series“	357	<b>KPL / Cross Joint Connector</b>	<b>82</b>
<b>GRZ 06-08 / Gripper Size 06-08 „Micro Series“</b>	<b>358</b>	KPL / Cross Joint Connector X/JU to Europrofile	84
GRZ 10-06 / Gripper Size 10-06 „Micro Series“	358	KPL D / Cross Joint Connector, form-locking, swiveling	83
<b>GRZ 10-08 / Gripper Size 10-08</b>	<b>164</b>	KPL F / Cross Joint Connector Flat	82
GRZ 10-12 / Gripper Size 10-12	167	KPL V / Cross Joint Connector X/JU to Europrofile, Strong Version	84
GRZ 14 Body	172	K-Profile / Construction Profile	62
GRZ 14 D A / Gripper, double acting	171	KUG / Glue and Polyurethane Pad	359
<b>GRZ 14 Gripper Jaws / Gripper Jaws Size 14</b>	<b>172</b>	KV / Cable Plug for SWS 040, 040Q, 071	53
GRZ 14 R / Gripper with Chequered Jaws	170	KV / Clinch Nut	89
GRZ 14 R,CS,I / Gripper with Chequered Jaws and Sensor with Plug	170	<b>KVB / Cross Connector</b>	<b>77</b>
GRZ 20 / Body	183	KVB G / Cross Connector with Ball Joint	77
<b>GRZ 20 Gripper Jaws / Gripper Jaws Size 20</b>	<b>184</b>	KVB L 6 / Cross Connector „Micro Series“	352
GRZ 20-16 / Gripper Size 20-16	176	KVB S / Cross Connector, front side	78
GRZ 20-16 K / Gripper Size 20-16, boosted	179	KW 18 / Elbow Connector 3 or 4 pin Female with Cable	330
GRZ 20-20 AS / Gripper with adapted Scissors	182		
GRZ 20-20 R / Gripper with hard coated Aluminium Jaws	181	<b>L</b>	
GRZ 20-20 R,CS,I / Gripper with Sensor, inductive	181	LES 6 / Photoelectric Sensor - Compact	320
GRZ 25 / Grippers Size 25	188	LPL / Logical Board, LPL-G(-S) / Logical Board with Box	328
GRZ 25 Body	189	L-Profile / „Light System“ 18x10 and 18x18	58
<b>GRZ 25 Gripper Jaws / Gripper Jaws Size 25</b>	<b>190</b>	LR5 18 / Photoelectric Sensor - Cylindric	320
<b>GRZ 32 / Grippers Size 32</b>	<b>192</b>	LVT / Light Weight Manifold Block	128
GRZ AD 20-16 / Gripper Extension Adapter	180		
GRZ-20-16 HW / Jaw Hook for GRZ 20-16	180	<b>M</b>	
GSE / Gripper Arm for Suction Cups with air connection	145	MFS T2 3,7 / Sensor with two Acting Points „Teachable“	325
GSE U / Gripper Arm for Vacuum Cups, with air duct	146	Micro Series EOAT Kit	351
GSE U 6 / Gripper Arm for Suction Cups with air duct „Micro Series“	355		
GWP EX U / Channel Nut with Swivel-in-Function	66	<b>N</b>	
GWP1/GPF / Channel Nut with one Thread	64	NGR 12 / Needle Gripper	226
GWP2 / Channel Nut with two Threads	64	NGR 12 D / Needle Gripper with Through Hole	224
GWP3 / Channel Nut with three Threads	66	NGR 12 DL / Needle Gripper with Through Hole, Light Weight Version	224
		NGR 12-10 D / Needle Gripper with covered Contact Area	229
<b>H</b>		NGR 12-6 / Needle Gripper with 6 Needles, adjustable	227
HEU / Stroke Unit with Piston-Ø 16 mm	307	NGR 12-6 DS A / Nadelgreifer doppeltwirkend, extra-schlank, einstellbar, 6 PTFE-beschichtete Nadeln	231
HEU 10 / Stroke Unit with Piston-Ø 10 mm	306	NGR 12-8 D / Needle Gripper, 8 Needles, with Through Hole	226
HEU 16 A XY / Adapter for XY-Stroke Unit	312	<b>NGR 12-8 DK / Needle Gripper, 8 Needles, with Through Hole, compact design</b>	<b>225</b>
HEU 20 / Stroke Unit with Piston-Ø 20 mm	309	NGR 16-18 EE / Needle Gripper, adjustable, electrical	363
HEU 25 / Stroke Unit with Piston-Ø 25 mm	310	NGR 16-18 EZ / Needle Gripper, compact, adjustable	228
HEU L 16 / Stroke Unit Light Weight with Piston-Ø 16 mm	308	NGR 20-6-25 D / NGR for SMC (Sheet Molding Compound) Parts	232
HUE / Slide Unit	292	NGR X 16-10 / Needle Gripper for X-Profile	233
HUE G / Slide Unit with Sliding Guide	293		
HUE G Profile / Slide Unit with Sliding Guide on Profile	295	<b>P</b>	
HUE X / Slide Unit for adapting X-Profile	294	PA-Forming / 3D Printing made by SLS Laser Sinter	361
<b>HUS / Double Stroke Unit for Vacuum Cups</b>	<b>289</b>	PDA / Seal Ring	334
<b>HUS DUV 32-30 / Stroke Unit for Vacuum Cups, locked against rotation, double acting, with air duct</b>	<b>291</b>	PDN / Double Union with Hex	338
HUZ / Gripper with Stroke	276	PGR / Parallel Gripper	199
HUZ 25 / GRZ 25 with Stroke	278	PGR-E / Parallel Gripper, electrical	363
HUZ 25 D / GRZ 25 with Double Stroke	279	<b>PGR-P / Parallel Gripper, pneumatic</b>	<b>195</b>
HUZ D / Gripper with Double Stroke	277	PKS / Parallel Clamp	78
HUZ P / Gripper with Stroke, Precision Slide	282	<b>PKS / Parallel Connector „Micro Series“</b>	<b>353</b>
HUZ P 25 / Gripper with Stroke, Precision Slide	283	PLU / Channel Nut	67
HUZ-P 25 D / Gripper with Double Stroke, Precision Slide	281	<b>PMG / Pneumatic Magnetic Gripper</b>	<b>216</b>
HUZ-P D / Gripper with Double Stroke, Precision Slide	280	PMM / Thread Coupling	339
<b>HUZ-PL 32 / Greifzange auf Hub, Präzisionsgleitlager, Leichtbau</b>	<b>284</b>	PSD / Silencer	341
<b>HUZ-PL 32 D / Greifzange auf Doppelhub, Präzisionsgleitlager, Leichtbau</b>	<b>285</b>	PSK / Quick Release Coupling	337
		PSL / Quick Hose Connector L-90°	335
		PSS / Pneumatic Hose	333
		PVS / Hex Plug	339
<b>I/J</b>			
ICS 8 / Sensor, C-Nut, Plug, M8	324	<b>Q</b>	
IE AL K / Proximity Switch	325	QGR 20 / Crosswise Gripper	215
IEK 8 / IES 8 / Sensor	324		
IGB / ID Gripper, Bellow	202		



**R**

<b>RHZ SWH R / SWH Centering Pin</b>	<b>45</b>
<b>RK K / Mounting Adapter Cone</b>	<b>348</b>
<b>RKN G / Mounting Adapter for panels</b>	<b>349</b>
<b>RKN K / Mounting Adapter for VLK</b>	<b>348</b>
<b>RKT / Connector, round, T-style</b>	<b>349</b>
<b>RKW / Connector, round, angle 45°</b>	<b>350</b>
RMB-ROB / Reduction with and without collar „Micro Series“	353
RNK / Reducing Union Short	339
RNL / Reducing Union Long	338
Robot gripper installation at your facility	359
RPL / Relay Board	327
RPLG / Relay Board with Enclosure	327
<b>R-Profile / Tubular-System</b>	<b>345</b>
<b>RV 1 / Connector, round</b>	<b>346</b>
<b>RV 2 / Double-Connector, round</b>	<b>347</b>
<b>RVG / Connector for Base-Plate GPM</b>	<b>345</b>

**S**

Safety instructions for handling manually operated nippers	236
SAS / Vacuum Cup Connector, lateral	98
SE... ARKS / Nipper Blades for ASN ARKS	267
SEF / Spare Springs for Cutter Blades	265
SEG / Nipper Blades, Straight Form	261
SEG ASN SE / Nipper Blades Straight for ASN SE	264
SEG-20 / Nipper Blades, Straight Form for ASN 20	261
SEG-3 / Nipper Blades, Straight Form for ASN 3	261
SEG-30-50 / Nipper Blades, Straight Form for ASN 30-50	262
SEG-5 / Nipper Blades, Straight Form for ASN 5	261
SEG-ASN-ARD / Nipper Blades for ASN 50 AR VS	266
SEG-ASN-ARD / Nipper Blades Straight Form for ASN ARD	265
SEK / Nipper Blades, „Pinch“	258
SEK 20-45-17 / Nipper Blade, Special Design, „Pinch“ 45°	263
SEK-10 / Nipper Blades „Pinch“ for ASN 10	258
SEK-20 / Nipper Blades „Pinch“ for ASN 20	259
SEK-30-50 / Nipper Blades „Pinch“ for ASN 30-50	259
SEK-7 / Nipper Blades „Pinch“ for ASN 7	258
SEO 10 / Mechanical Switch without Cable	322
SEO 5 / Mechanical Switch without Cable	322
SER 3-11,5-R2,5 / Nipper Blade, Special Design, Radius	263
SES / Nipper Blades Standard	249
SES 20 / Nipper Blades with Inverted Cutting Edge	254
SES-10 / Nipper Blades Standard for ASN 10	251
SES-20 / Nipper Blades Standard for ASN 20	252
SES-3 / Nipper Blades Standard for ASN 3	249
SES-30-50 / Nipper Blades Standard for ASN 30-50	253
SES-30-50 / Nipper Blades with Inverted Cutting Edge	254
SES-5 / Nipper Blades Standard for ASN 5	249
SES-7 / Nipper Blades Standard for ASN 7	250
SEV / Quick Exhaust Valve	342
SEW / Nipper Blades, 90° Angle	255
SEW-20 / Nipper Blades with 90° Angle for ASN 20	255
SEW-30-50 / Nipper Blades with 90° Angle for ASN 30-50	257
SEZ / Z-Form	260
SF 20 / Stacking Guide	316
SFP / Stacking Guide Specific	317
SH / Sensor Bracket for round sensors	321
SH GRZ 10-08 / Sensor Bracket	166
SH GRZ 14 / Sensor Mounting Bracket	174
SH GRZ 20 / Sensor Bracket	186
SH IGB / Sensor Bracket for IGB	204
SK / Nipper Blade Protectors	268
SKS / Short Angle Arm	135
Spare Needles for Needle Gripper	233
STA / Straight Quick Hose Connector	334
STB / Step Drill	97
STG / Straight Quick Connector	335
STN / Plug-In Nipple	337
STT / T Hose Quick Connector	336
STV / Smart Flow Valve	333
STX / X Hose Quick Connector	336
STY / Y Hose Connector	336
SV / Butt Connector	88
<b>SVB / Butt Connector SVB JU 40-40</b>	<b>92</b>
<b>SVB / Butt Connector SVB JU 80-40-80-40</b>	<b>92</b>
SVB / Butt Connector SVB X 25-25	90
SVB / Butt Connector SVB X 25-50-25	90
SVB / Butt Connector SVB X 50-25-50-25	91
SVB / Butt Connector SVB X 50-25-U	91
SVG / Straight Hose Connector	340
SVL / L Hose Connector	340
SVT / T Hose Connector	340

SVV / V Hose Connector	341
SVY / Y Hose Connector	341
SWH / Quick Change System, Semi-Automatic	39
SWH DS / Spacer for SWH	46
SWH ES / Electrical Interface D-SUB for SWH	47
SWH G 150 / Quick Change System, Semi-Automatic, Gripper Side, Ø150mm	43
SWH G 50 / Quick Change System, Semi-Automatic, Gripper Side, Ø50mm	40
SWH G 90 / Quick Change System, Semi-Automatic, Gripper Side, Ø90mm	41
<b>SWH RV 150 / Quick Change System, Semi-Automatic, Robot Side, Ø150mm, with locking</b>	<b>43</b>
<b>SWH RV 50 / Quick Change System, Semi-Automatic, Robot Side, Ø50mm, with locking</b>	<b>40</b>
<b>SWH RV 90 / Quick Change System, Semi-Automatic, Robot Side, Ø90mm, with locking</b>	<b>41</b>
<b>SWH RVR 90 / Quick Change System, Semi-Automatic, with locking and check valve, Ø90mm</b>	<b>42</b>
SWH SH / Sensor Bracket for Quick Change System SWH	46
<b>SWH-PG 2 90 / Pneumatic Interface Expansion, 2-times, Gripper Side</b>	<b>49</b>
SWH-PG 4 / Pneumatic Interface Expansion, 4-times, Gripper Side	48
<b>SWH-PR 2 90 / Pneumatic Interface Expansion, 2-times, Robot Side</b>	<b>49</b>
SWH-PR 4 / Pneumatic Interface Expansion, 4-times, Robot Side	48
SWM / Quick Change System	22
SWM E / EOAT (Robot Hand) Quick Change System, Extruded	31
SWM E LL / Pneumatic Connection for Quick Change System, Extruded	33
SWM E OSK / EOAT (Robot Hand) Quick Change Chuck, Extruded	32
SWM KH / Quick Change System with Lever Locking Device	30
SWM LL / Pneumatic Connection for Quick Change System	25
SWM OSK / EOAT (Robot Hand) Quick Change Chuck	24
SWO / Electric Connection for SWS 011	52
SWO / Electric Connection for SWS 040, 040Q, 071	53
SWS / Automatic Quick Change System	51
SWS 011 / Automatic Quick Change System	52
SWS 040 / Automatic Quick Change System	52
SWS 040Q / Automatic Quick Change System	53
SWS 071 / Automatic Quick Change System	53
SZD / Special Cylinder	300

**T**

Tubular-System EOAT Baseframe Kit3	43
------------------------------------	----

**U**

UVF / Universal Joint Connector, fixed	87
UVV / Universal Joint Connector, adjustable	87

**V**

Vacuum Cup properties	101
Vacuum Cup properties	119
VAE 10 / Vacuum Producer with Blow-Off	332
VAS SBR / Special Vacuum Cup, for rough surfaces, with Adapter	120
VBG / Straight Support Joint Connector	93
VBL / L-Style Support Joint Connector	93
VBT / T-Style Support Joint Connector	94
VBW 0-90 / Adjustable Support Joint Connector	95
VBW 120 / 120 Degree Support Joint Connector	95
VBW 45 / 45 Degree Support Joint Connector	94
VEL / Vacuum Producer – Lightweight	332
Versions Suction Cup Adapter	101
VHE 20 / Vacuum-Stroke Unit	316
<b>VHE 20 VG / Vacuum-Stroke Unit, non-rotating</b>	<b>316</b>
VL U / Extension with air duct for GRZ 10	166
<b>VLK 1 / Extension, single-cone</b>	<b>346</b>
<b>VLK 2 / Extension, double-cone</b>	<b>347</b>
VLR / Extension Tubes	304
VN 1 / Suction Cup - 1 Bellow, without Adapter	106
VN 1 PL / Suction Cup - 1 Bellow, Longlife, without Adapter	108
VN 2 / Suction Cup - 2 Bellows, without Adapter	112
VN 2 2K / 2-Component Suction Cup - 2 Bellows, without Adapter	123
VN 2 PL / Suction Cup - 2 Bellows, Longlife, without Adapter	113
VN 3 / Suction Cup - 3 Bellows, without Adapter	116
VN 3 2K / 2-Component Suction Cup - 3 Bellows, without Adapter	125
VN 3 PL / Suction Cup - 3 Bellows, Longlife, without Adapter	118
VN O / Suction Cup - oval, without Adapter	103
VRS 8 / Plug and Socket Connection 3 and 4 Pin	330
VS 1 / Vacuum Cup - 1 Bellow, Adapter	104
VS 1 E / Vacuum Cup made of ED	125
VS 1 NK / Vacuum Cup Natural Rubber - 1 Bellow, with Adapter	121
VS 1 PL / Vacuum Cup - 1 Bellow, Longlife, with Adapter	108
VS 1 PN / Special Vacuum Cup for sheet metal, with Adapter	121
VS 2 / Vacuum Cup - 2 Bellows, with Adapter	109
VS 2 2K / 2-Component Vacuum Cup - 2 Bellows, with Adapter	122
VS 2 PL / Vacuum Cup - 2 Bellows, Longlife, with Adapter	113
VS 3 / Vacuum Cup 3 Bellows, with Adapter	114
VS 3 2K / 2-Component Vacuum Cup - 3 Bellows, with Adapter	124

VS 3 PL / Vacuum Cup - 3 Bellows, Longlife, with Adapter	118
VS HT+ / Vacuum Cup, heat-resistant up to 300°C, with Adapter	126
VS N3 A / VN N3 A / Vacuum Cups Nitril, antistatic „Micro Series“	354
VS O / Vacuum Cup - oval, with Adapter	102
VS O 2 / Suction Cup - oval, 2 Bellows, with Adapter	126
VSA / Adapter for Suction Cups VN and Vacuum Cups VS	129
VSA 2K / Adapter for 2-Component Suction and Vacuum Cups	131
VSE / Vacuum Cup Inserts	132
VSL / Quick Hose Connector L-90°	335
VSL, PSL / Quick Hose Connector L-90°	335
VSN SBR / Special Suction Cup, without Adapter	120
VTB 1 / Manifold Block 4 Ports	127
VTB 2 / Manifold Block 8 Ports	128
VTY / Splitter Y-Form	323

**W**

WIV / Corner Reinforcement Connector 90°	86
WKA / Angle Arm	136
WKA 6-6 / Angle Arm „Micro Series“	355
WKA BS / Angle Arm, Blue Scale	136
WLS / Long Angle Connector for Vacuum Cups	99
WLS GA X / Long Angle Clamp for Vacuum Cups with Swivel Head	100
WSD / 360° Swivel Connector for Vacuum Cups	100
WSF U / WSF M U / Flat Angle Clamp	73
WSL G / Long Angle Clamp with Ball Joint	74
WSL GA / Long Angle Clamp with Swivel Head	75
WSL KG / Long Angle Clamp with Swivel and Ball Joint	75
WSL L 6-25 U / Universal Long Angle Clamp „Micro Series“	352
<b>WSL U / Universal Long Angle Clamp</b>	<b>73</b>
WSL VU / Universal Long Angle Clamp – Heavy Duty Version	74
WSS / Angle Connector for Vacuum Cups	99
<b>WST / Universal Angle Clamp</b>	<b>72</b>
WST BS / Universal Angle Clamp, Blue Scale	72
WST L 6 U / Universal Angle Clamp „Micro Series“	352
<b>WSW / WSW M / Angle Clamp and Angle Clamp, mirrored</b>	<b>76</b>

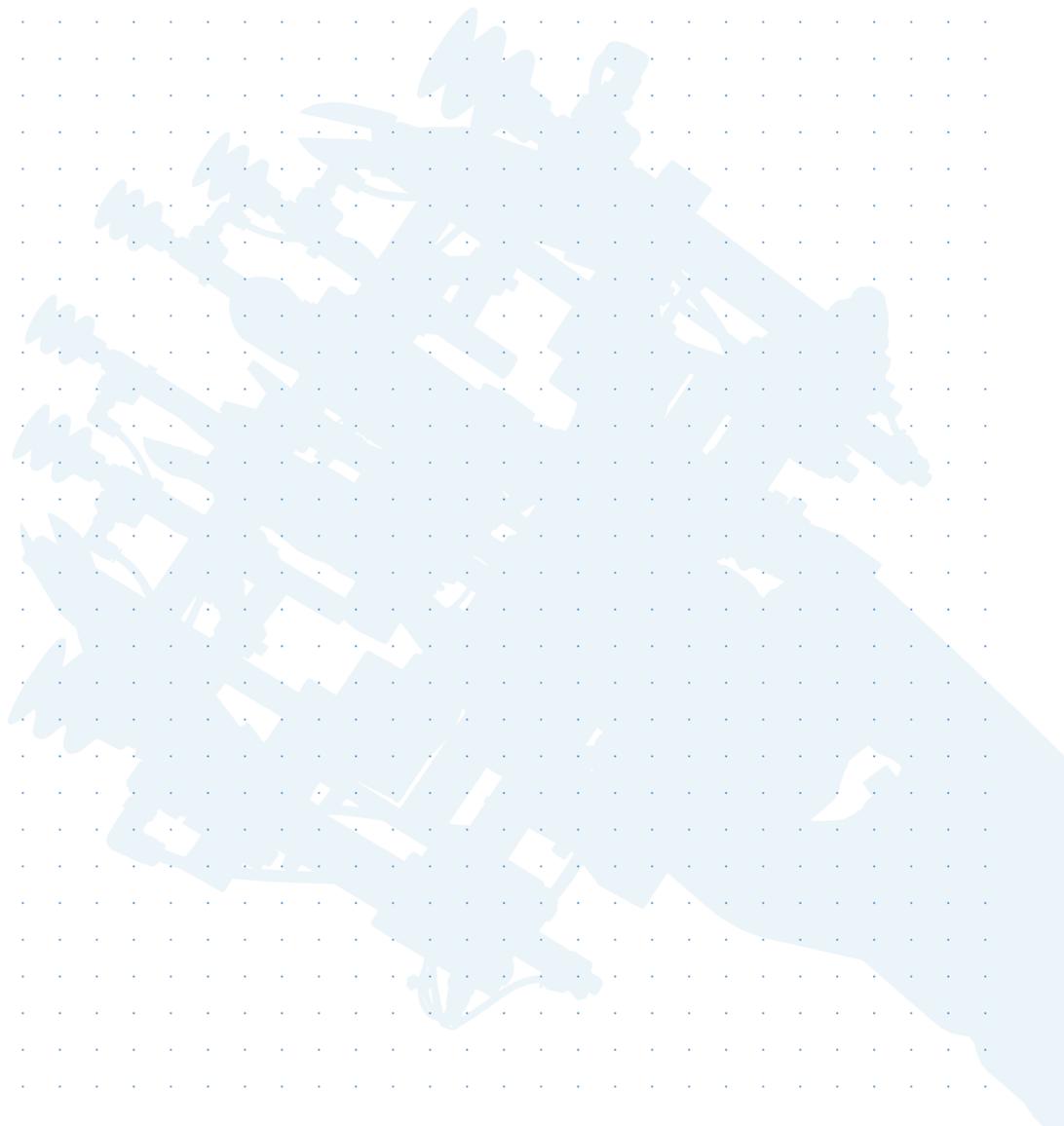
**X**

X-Profile / „X-System“ X 25x10 and X 25x18 Profile	59
X-Profile / „X-System“ 25x25 and 50x25	60

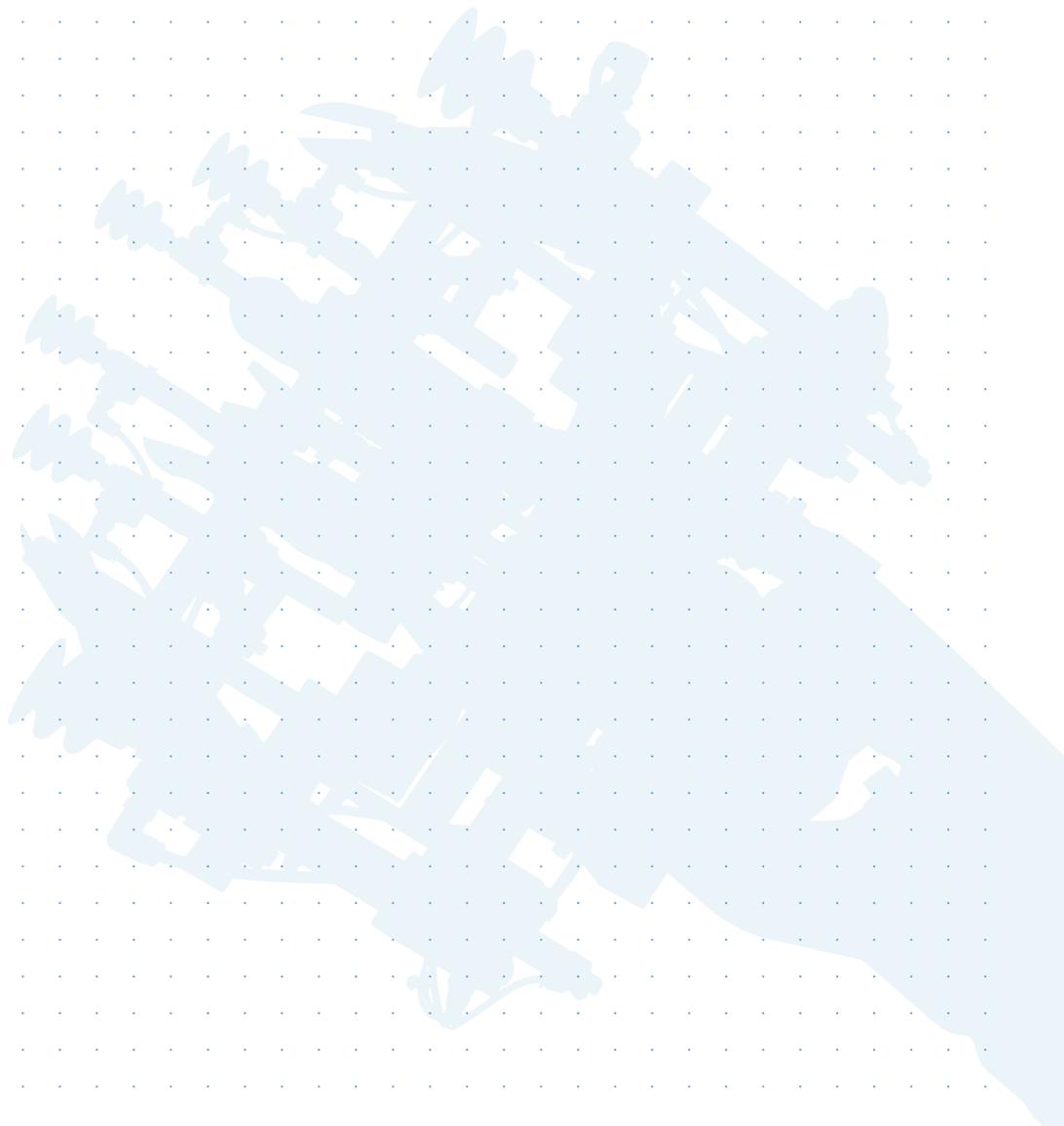
**Z**

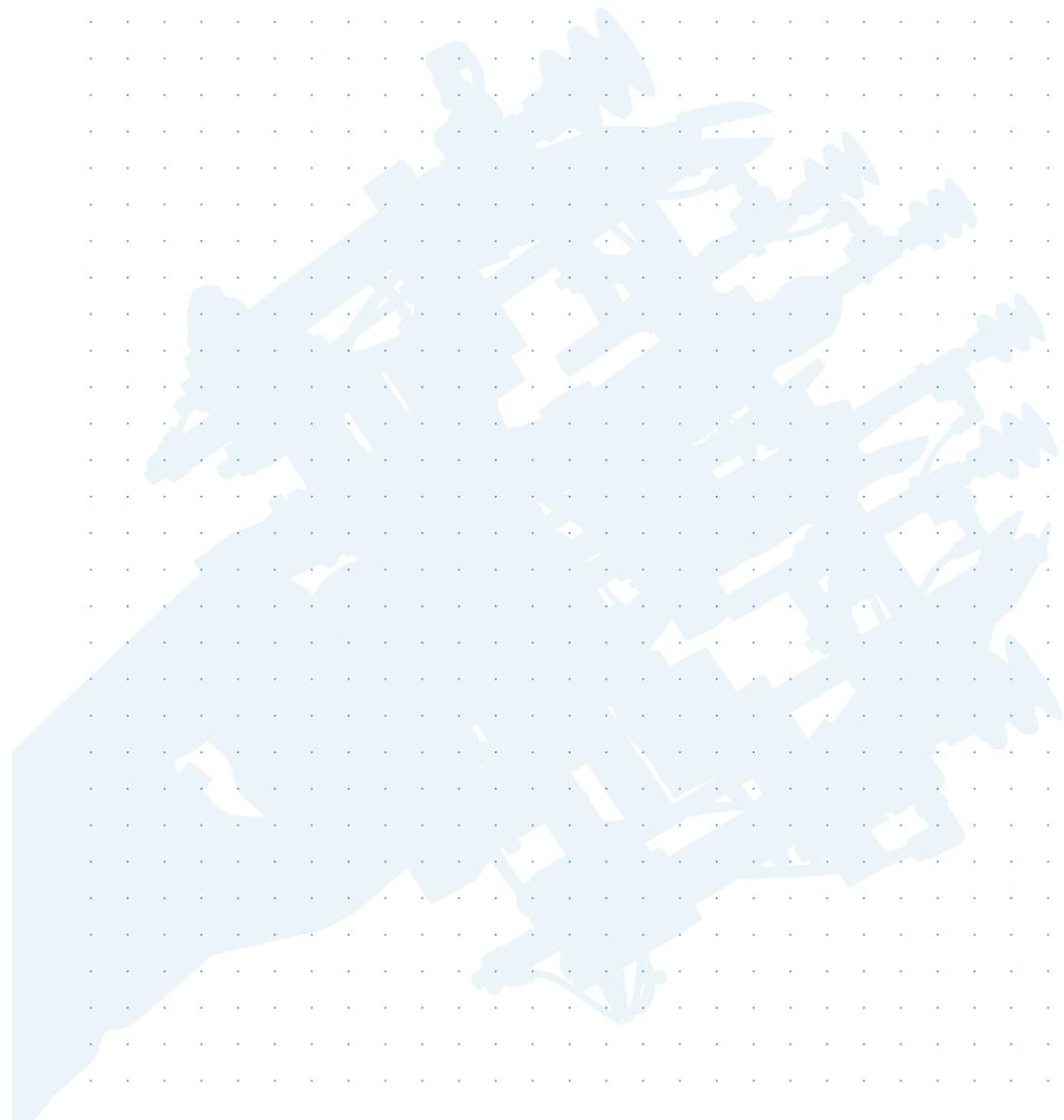
ZBU V / Docking Connector	318
ZHD / Cutter Slide, double acting	296
ZHG / Cutter Slide	296
ZHS / Stroke unit for vacuum cups	288
<b>ZHS VG / Stroke unit for vacuum cups, non-rotating</b>	<b>288</b>
ZSM-HUZ PZ / Stopover for HUZ-P	286
ZTB / Centering Pin	304
ZTE V / Docking Finger, Pneumatic	318
ZTS PA / Gripper Finger Guide (for GRF ...)	218

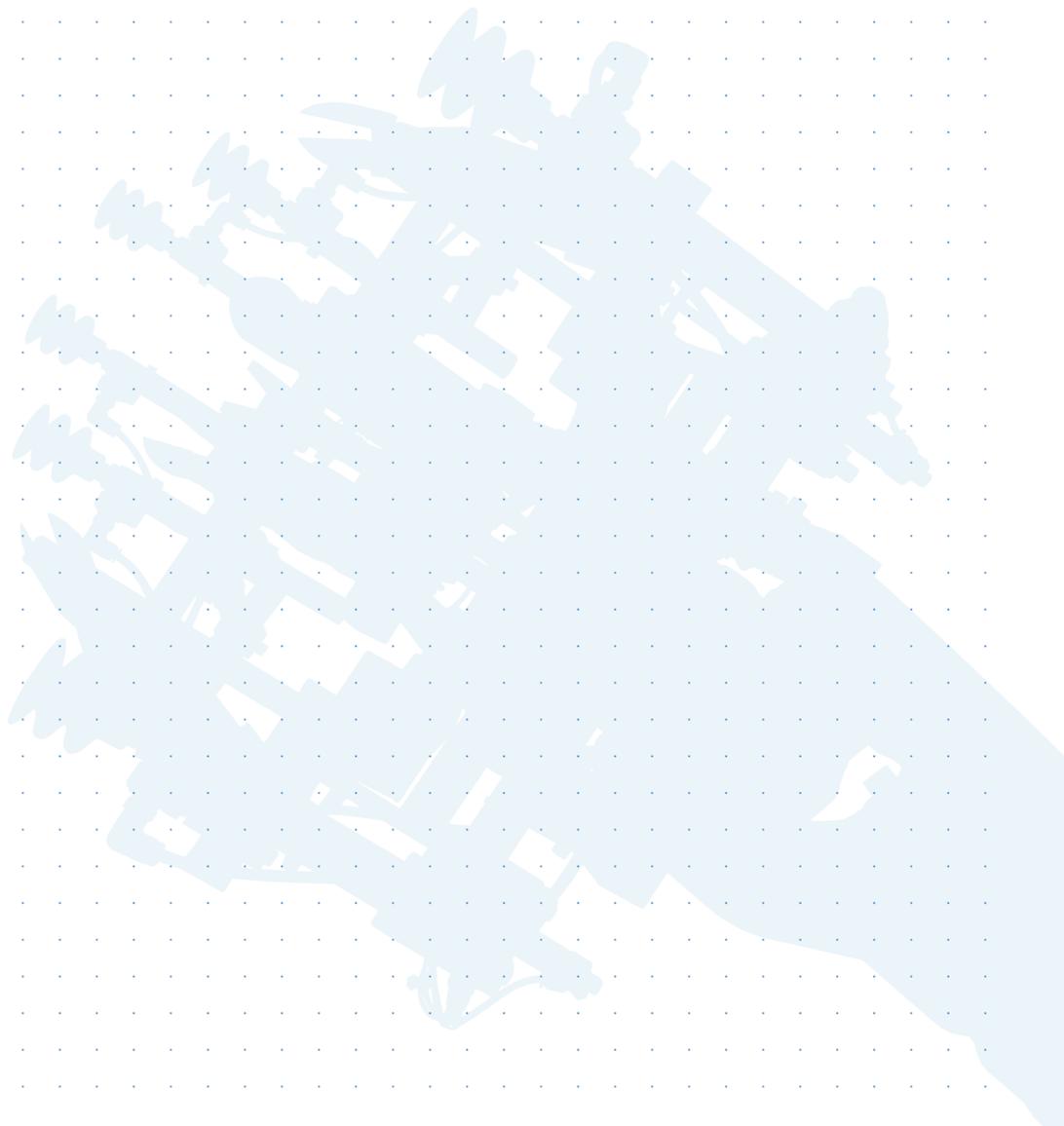




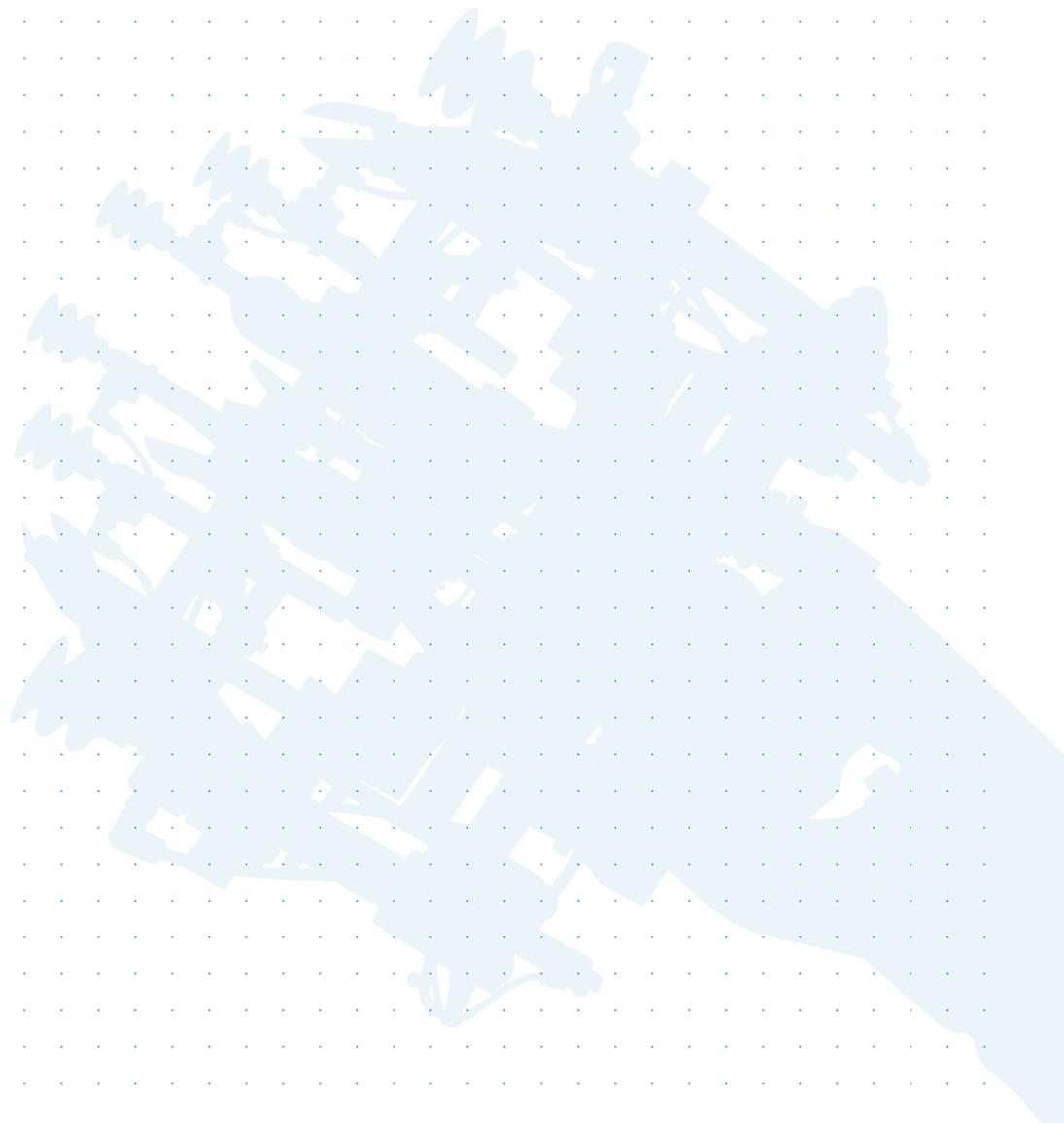


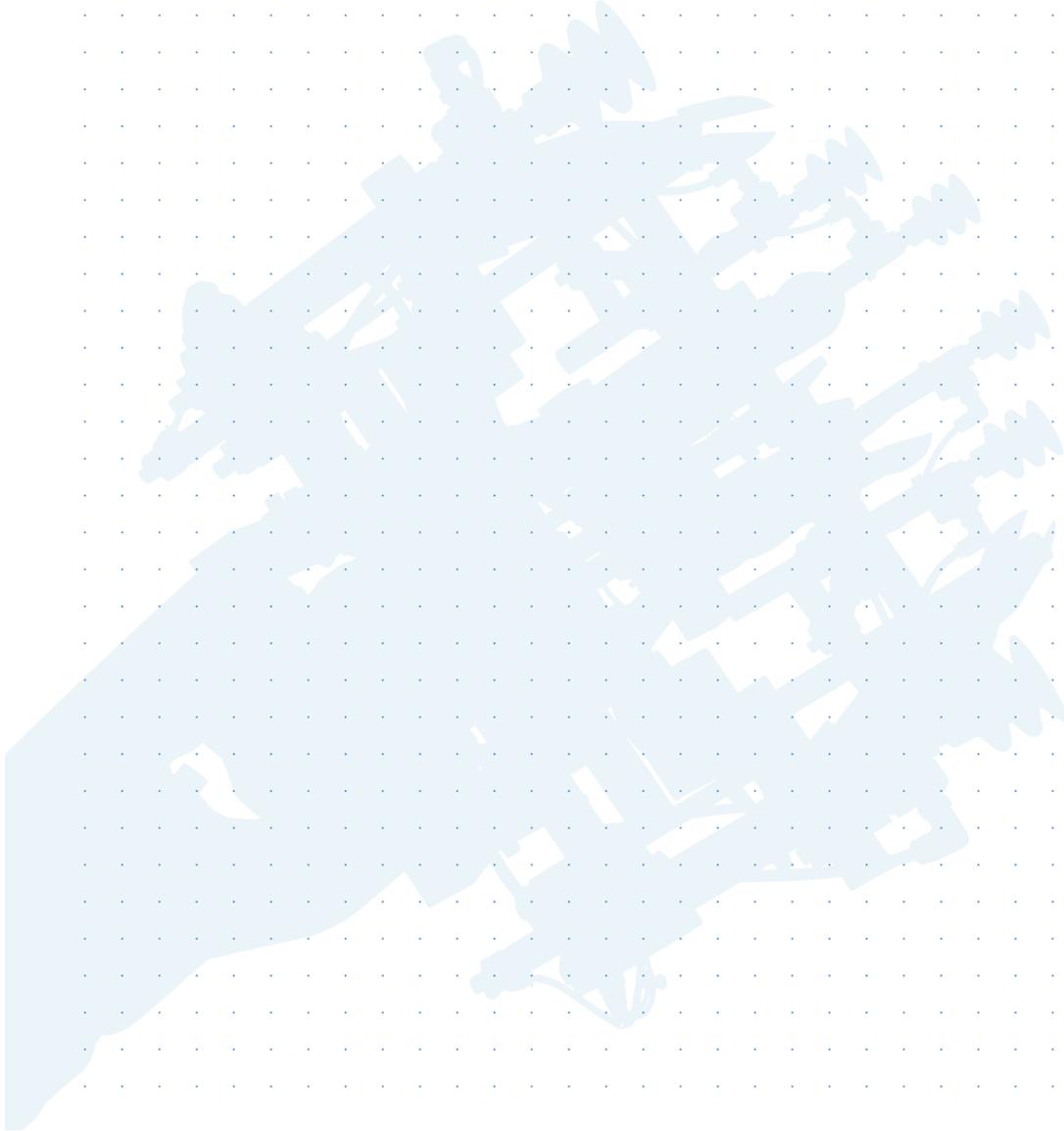


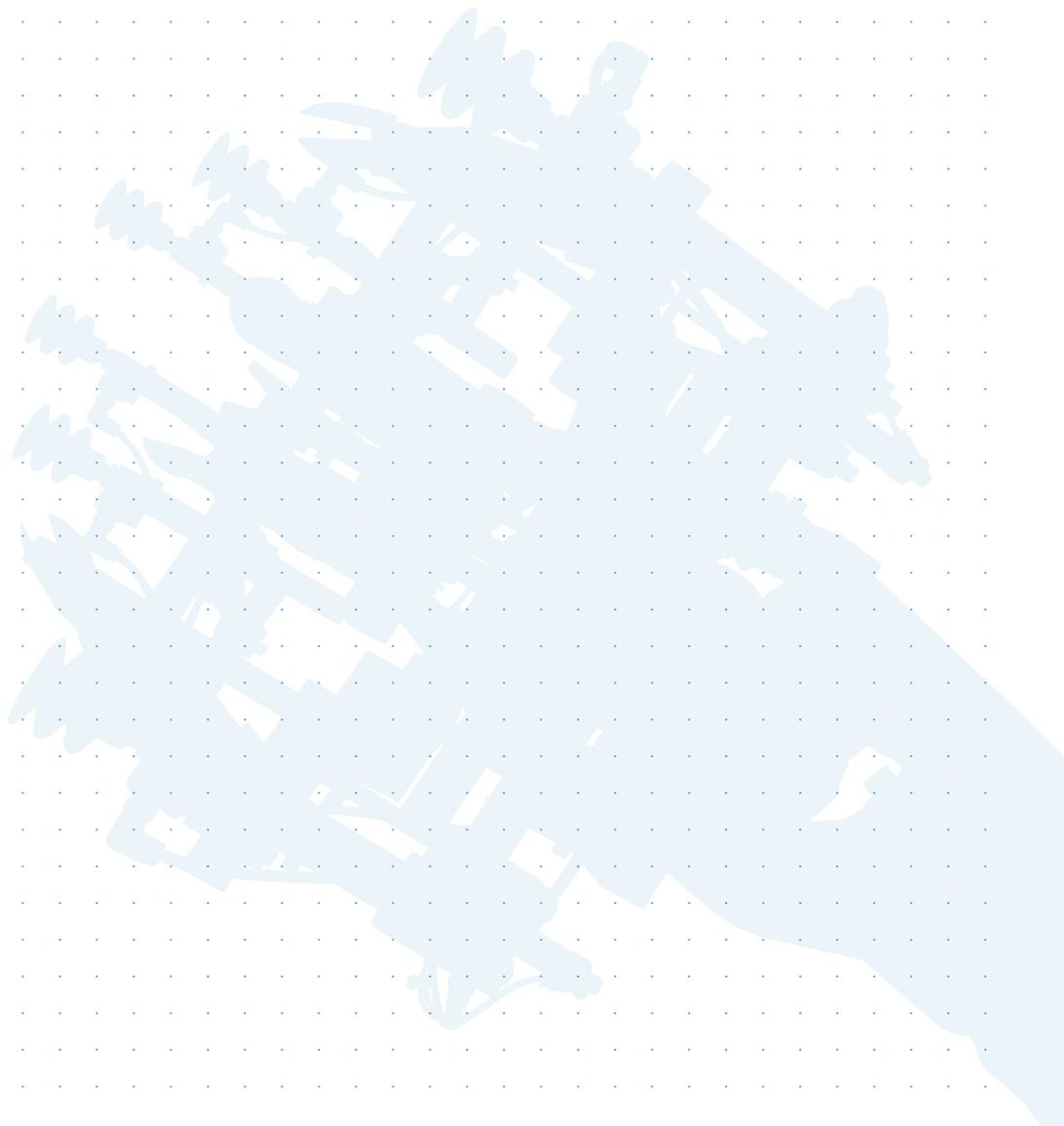


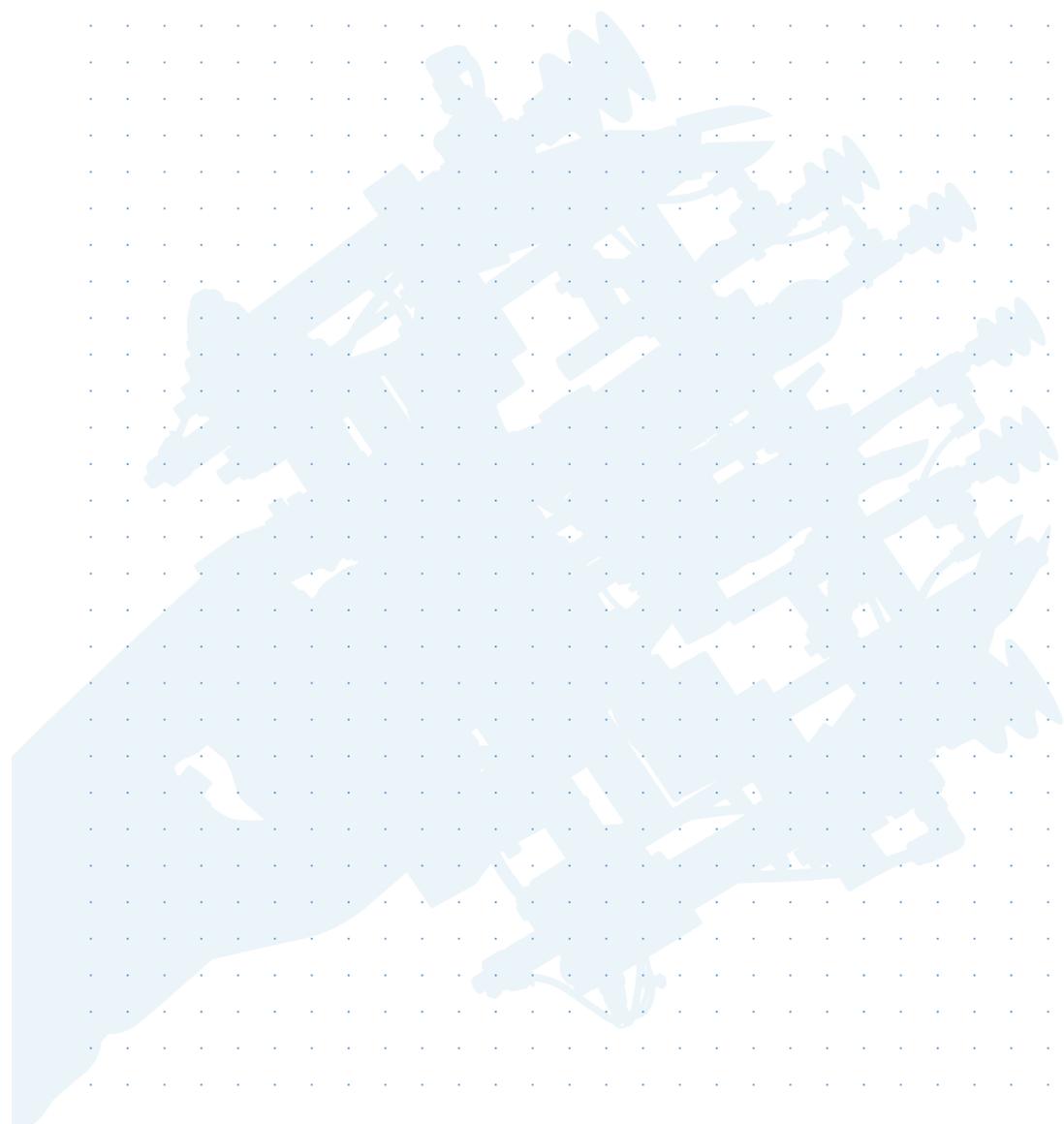


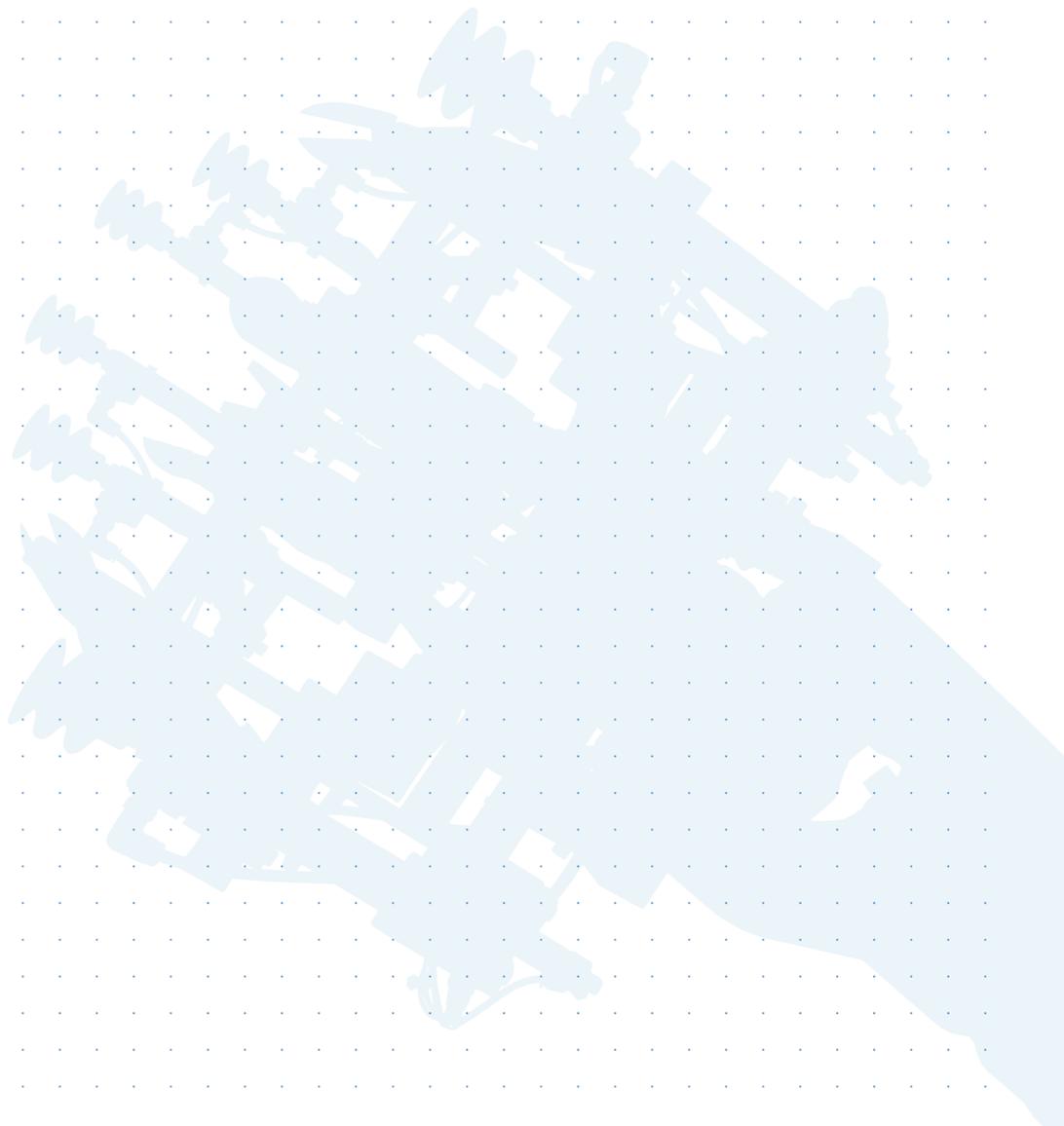


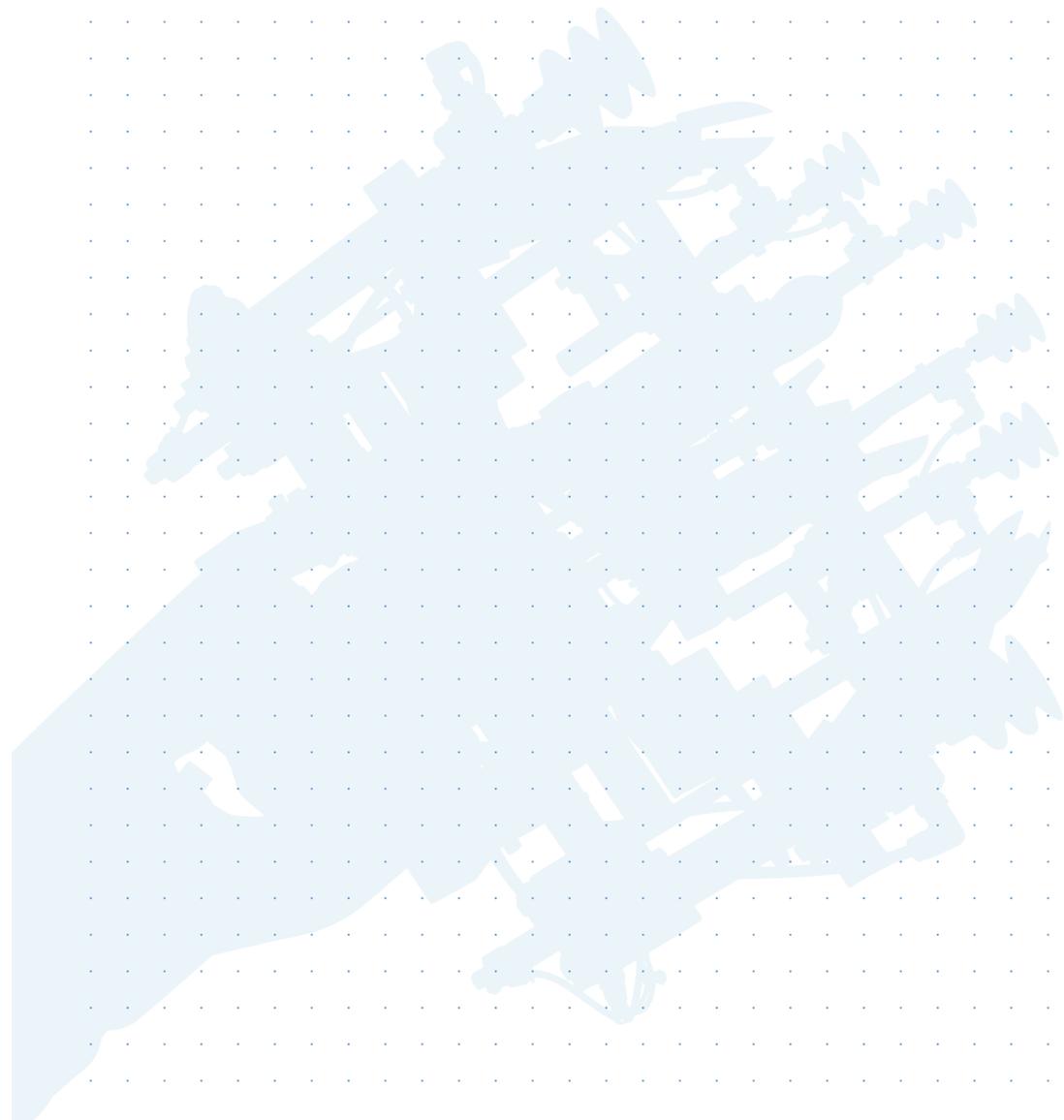


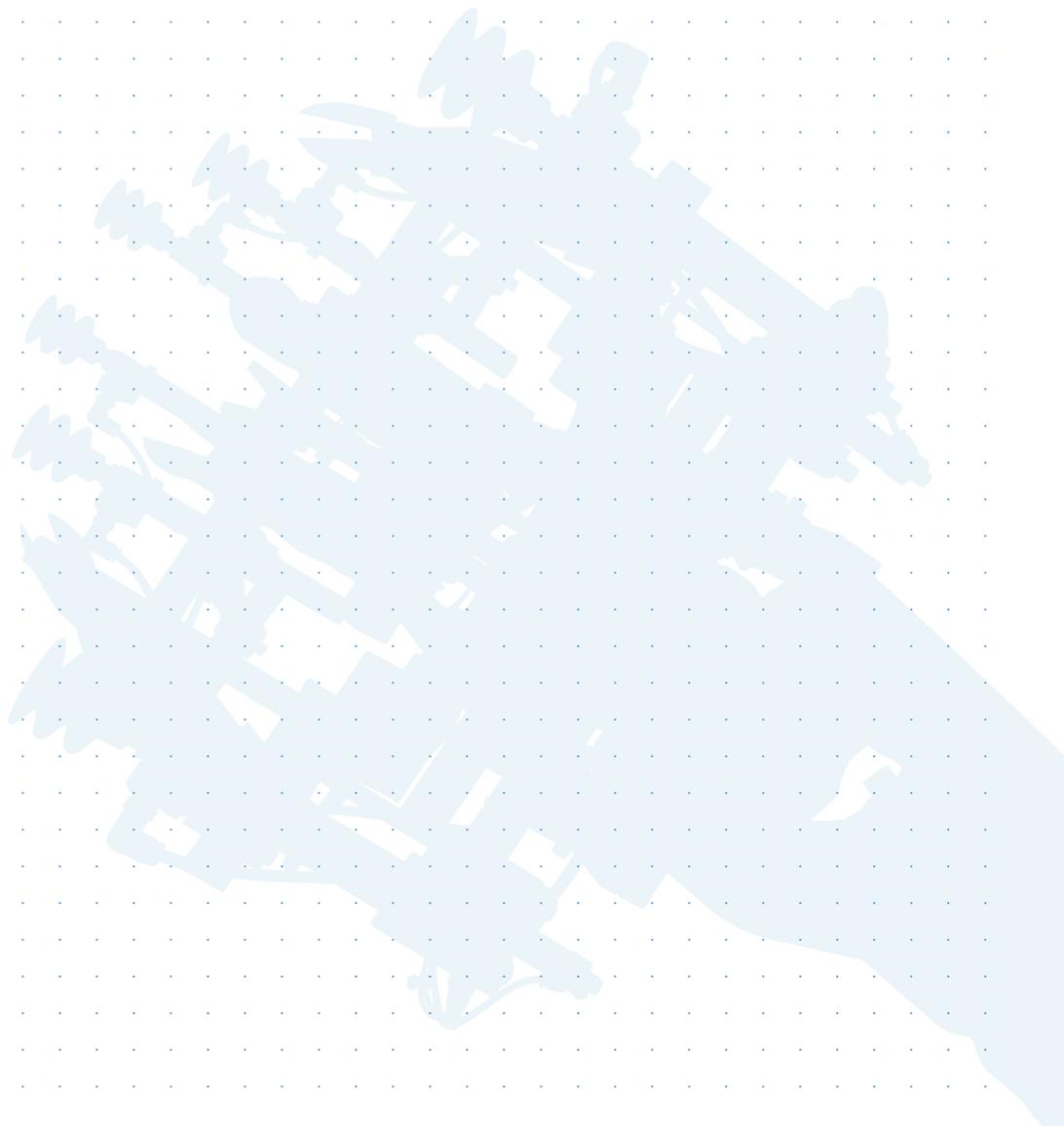


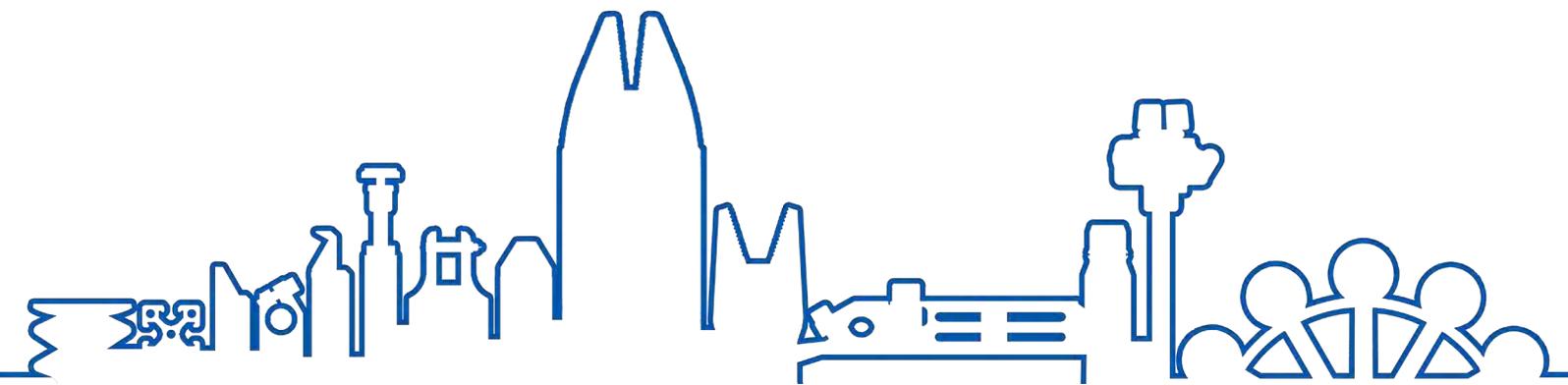












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