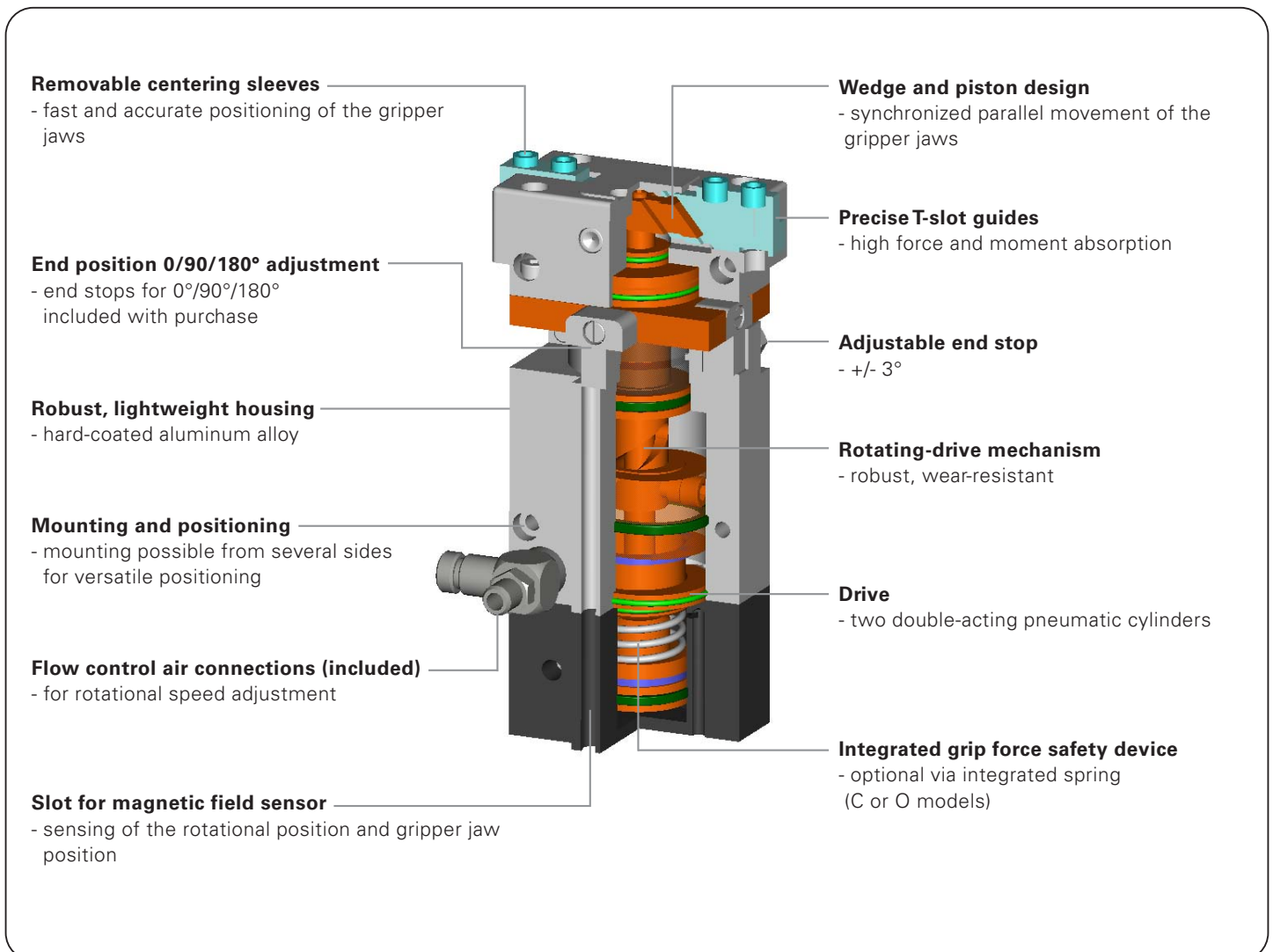


Grip & Rotate Module - with T-slot guides

Features

- Grip and rotate functions can be controlled separately
- Grip and rotate, either 90° or 180°, combined in a compact module
- Six different types in this series, for inside- and outside - gripping, with a stroke of 2 or 4 mm per jaw, also available with mechanical gripping-force retention
- Stable T-slot guides to aid the absorption of large forces and moments, optimally suited for high loads

Functional diagram





Terms

- Gripping force:** the arithmetic sum of the individual forces occurring at the jaws
- Closing/opening time:** time required for gripper jaws to cover maximum stroke distance
- Repeatability:** at end stops after 50/100 consecutive cycles
- Cycle:** one complete movement of the piston forward and back
- Maintenance:** recommended at 10 million cycles (please refer to the operating manual for constraints)
Available for download at: www.techno-sommer.com
- low operating costs due to longer maintenance intervals
 - long lifespan

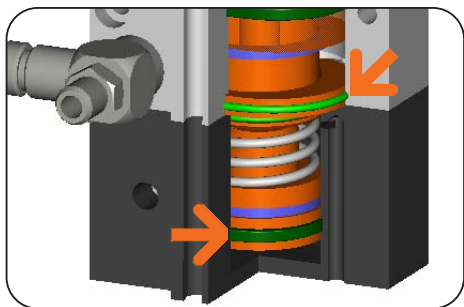
Model guide

- N:** Standard design (long stroke - standard force)
- S:** Heavy-duty design (short stroke - large force)
- NC:** Standard design, self-locking, spring closing (long stroke - standard force)
- NO:** Standard design, self-locking, spring opening (long stroke - standard force)
- SC:** Heavy-duty design self-locking, spring closing (short stroke - large force)
- SO:** Heavy-duty design self-locking, spring opening (short stroke - large force)

Order No.	Stroke per jaw	Gripping force in opening	Gripping force in closing	Self-locking via	Torque
DGP404N	4 mm	115 N	115 N	DSV*	0.5 Nm
DGP404NC	4 mm	-	155 N	Spring	0.5 Nm
DGP404NO	4 mm	155 N	-	Spring	0.5 Nm
DGP404S	2 mm	255 N	255 N	DSV*	0.5 Nm
DGP404SC	2 mm	-	350 N	Spring	0.5 Nm
DGP404SO	2 mm	350 N	-	Spring	0.5 Nm

*DSV= Pressure safety valve/one-way valve (Part No. DSV1/8)

Grip & Rotate Module - with T-slot guides



Drive

Gripping

N and S Models:

Double-acting pneumatic cylinder

- maximum power in both opening and closing
- grip force up to 350 N

NC, NO and SC, SO Models:

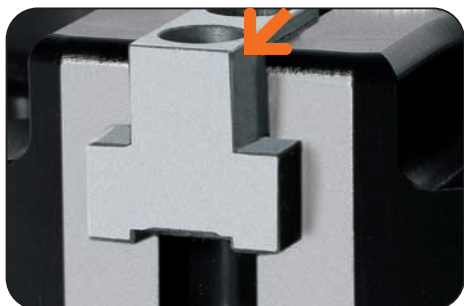
Double-acting pneumatic cylinders with integrated spring as mechanical safety device (in the event of pressure loss)

- optimal transmission of power and grip force by spring

Rotation

Double-acting pneumatic cylinder with oval piston

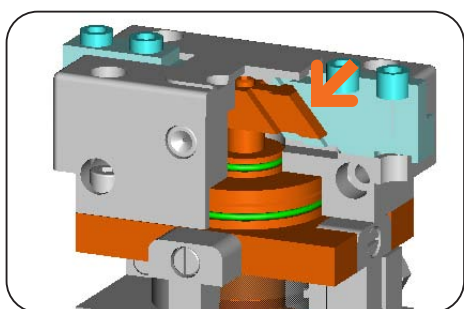
- maximum torque during rotation
- approximately 30% more piston area than with comparable round piston



Guidance

Ground T-slot jaws made from hardened steel

- T-slot guides for maximum force and moment resistance
- high precision, play-free guides
- convenient service via external lubrication fitting



Power transfer

Wedge and piston design with mechanically restricted guides

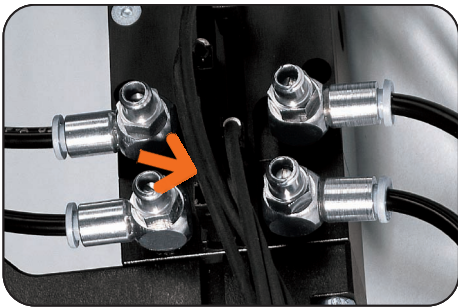
- optimal transmission of power to grip-force
- self-centering
- synchronized jaw movement
- high repeatability



Gripper jaw positioning

Positioning of the tooling fingers via centering sleeves

- precise positioning of the individual gripper fingers
- fast, easy, and economical switching of tooling fingers
- space-saving design maximizes size of mounting holes

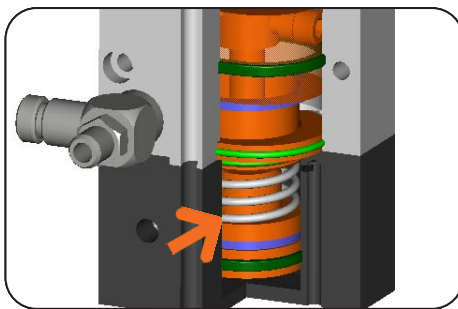


Position sensing

Built-in mount for magnetic field sensors

Sensing of the piston position

- compact – all sensors and cables are outside the swivel area
- stable, separate sensing of the gripping and rotating positions
- for magnetic field sensors with bracket for C-nut



Grip force safety device

NC, NO and SC, SO Models:

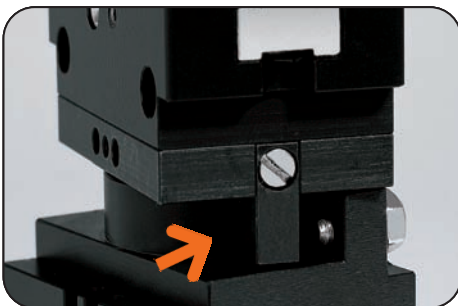
Energy retention through spring mounted in cylinder

- reliable mechanical grip-force retention
- compact design

N and S Models:

External pressure-retention safety valve

- grip-force retention through the use of optional pressure retention safety valve (Part No. DSV1/8).



Rotation angle

90° or 180°

Individually adjustable

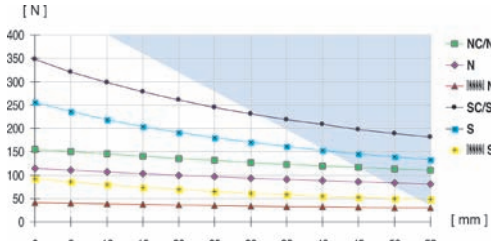
- simple relocation of end stop
- both stops included in delivery
- easily adaptable from one application to the next

Grip & Rotate Module - with T-slot guides



Gripping-force diagram

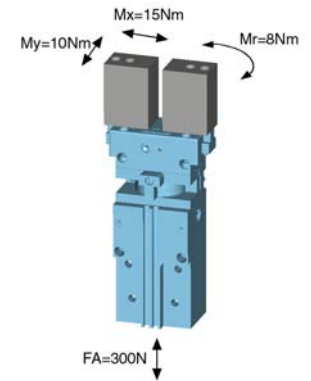
Gripping force as a function of jaw length.



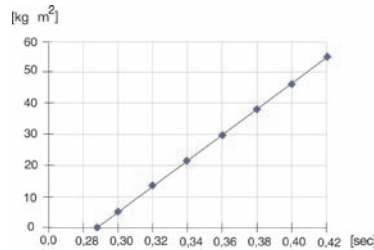
Colored area: increased wear or tear to be expected.

Forces and moments

Max. allowable static forces and moments.



Rotation-time diagram



Rotation time as a function of mass moment of inertia.

Included with purchase



Flow control air fittings
Part No. DRVM5x4



End stop 90° + 180°
Part No. ANS0002

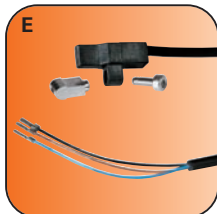


Centering sleeves
Part No. BDST40400

Recommended accessories



Compressed air fittings
(Angled)
Part No. WVM5



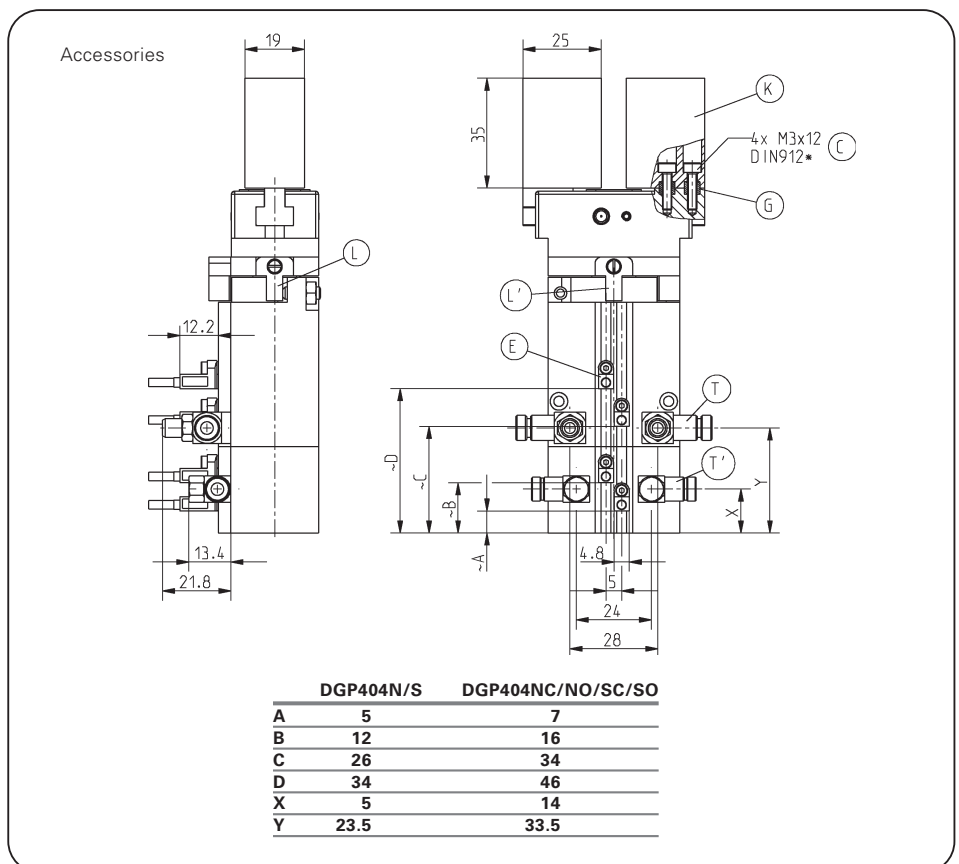
Magnetic field sensor
Part No. MFS103KHC42



Universal jaw set
Part No. UB404 (Al)
Part No. UB404ST (St)



Pressure safety valve/
one-way valve
Part No. DSV1/8



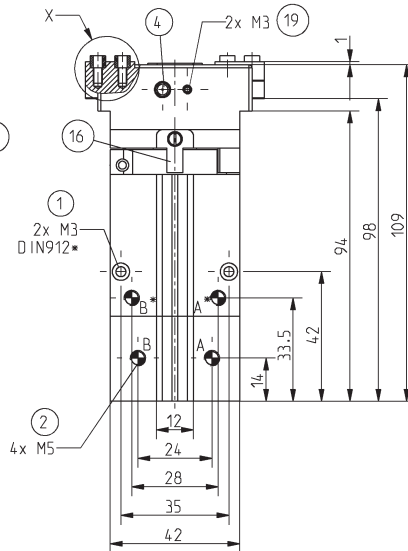
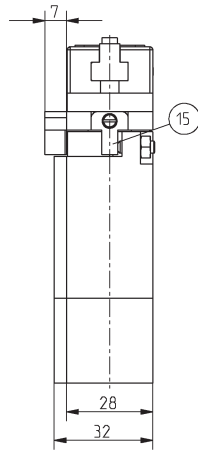
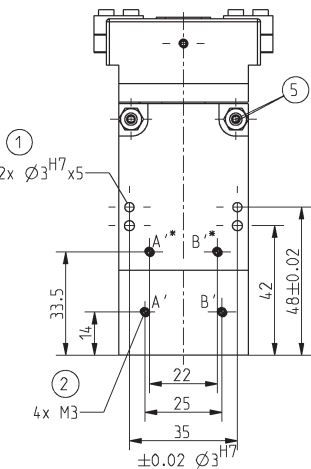
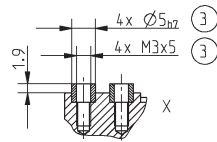
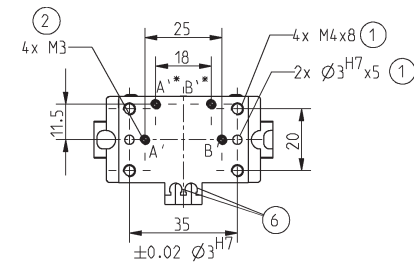
Order No.:	DGP404N	DGP404NC	DGP404NO	DGP404S	DGP404SC	DGP404SO
Gripping	Stroke per jaw [mm]:	4	4	4	2	2
	Gripping force in closing and opening [N]:	115	-	-	255	-
	Gripping force in closing [N]:	-	155	-	-	350
	Gripping force in opening [N]:	-	-	155	-	-
	Max. suggested workpiece weight [kg]*:	0.59	0.79	0.79	1.3	1.8
	Gripping force secured by spring min./max... [N]:	-	22/40	22/40	-	52/95
	Closing time/opening time [s]:	0.01	0.015	0.015	0.01	0.015
	Repeatability +/- [mm]:	0.05	0.05	0.05	0.05	0.05
Air volume per cycle [cm ³]:	3	5	5	3	5	5
Rotation	Torque [Nm]:	0.5	0.5	0.5	0.5	0.5
	Rotation angle (90° or 180°) adjustable +/- [°]:	3	3	3	3	3
	Repeatability [°]:	0.05	0.05	0.05	0.05	0.05
	Bearing load axial/radial [N/Nm]:	960/10	960/10	960/10	960/10	960/10
	Air volume per cycle 90°/180° [cm ³]:	4.5/9	4.5/9	4.5/9	4.5/9	4.5/9
General	Operating pressure min./max. [bar]:	3/8	5/8	5/8	3/8	5/8
	Operating temperature min./max. [°C]**:	5/80	5/80	5/80	5/80	5/80
	Weight [g]:	440	480	480	440	480

All data measured at 6 bar

* Value determined with friction coefficient $\mu=0.1$ and safety factor $\nu = 2$

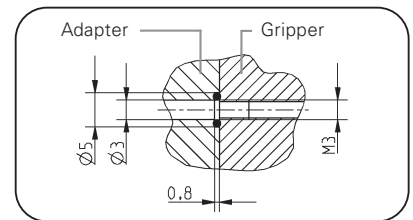
** High-temperature-resistant model (up to 150 °C) add "T" to part number

DGP404NC
DGP404NO
DGP404SC
DGP404SO



- ① Gripper mounting
- ② Power supply
- ③ Jaw fastening
- ④ Lubrication fitting plug
- ⑤ Adjustment screw
- ⑥ Slot for magnetic field sensor
- 15 End stop 90°
- 16 End stop 180°
- 17 Direction of rotation
- 19 Air purge connection (optional)
- A Air connection (closing) - Gripping
- B Air connection (opening) - Gripping
- A* Air connection - Rotation (90°/180°)
- B* Air connection - Rotation (0°)
- A' Alternate air connection (closing) - Gripping
- B' Alternate air connection (opening) - Gripping
- A'' Alternate air connection - Rotation (90°/180°)
- B'' Alternate air connection - Rotation (0°)

* equivalent to ISO 4762



Hoseless air connection

