



Axis Modules

pneumatic

SOMMER
automatic

Axis Modules

XY-Compensation

| Order no. | Stroke XY-Ebene ± [mm] | Handling weight recommended [kg] | Page |
|---------------------|---------------------------|-------------------------------------|------|
| Product Information | | | 6 |
| XY70 | 3 | 6 | 10 |
| XY100 | 5 | 12 | 12 |
| XY160 | 8 | 30 | 14 |
| XY220 | 10 | 150 | 16 |
| XY320 | 15 | 400 | 18 |



XYZ-Compensation

| Order no. | Stroke XY-Ebene ± [mm] | Stroke Z-Achse [mm] | Handling weight recommended [kg] | Page |
|-----------|---------------------------|------------------------|-------------------------------------|------|
| XYZ70 | 3 | 6 | 6 | 20 |
| XYZ100 | 5 | 10 | 12 | 22 |
| XYZ160 | 8 | 16 | 30 | 24 |
| XYZ220 | 10 | 25 | 150 | 26 |





Crash protector

| Order no. | deviation Z [mm] | deviation horizontal [°] | Handling weight recommended [kg] | Page |
|-------------------------------|-----------------------------|-------------------------------------|---|-------------|
| Things worth knowing CS-serie | | | | 30 |
| CS80-B | 12,5 | 12,5 | 6 | 34 |
| CS100-B | 10,5 | 12,5 | 12 | 36 |
| CS160 | 18,0 | 9,0 | 60 | 38 |



Alignment Compensator

| Order no. | deviation horizontal ± [mm] | Handling weight recommended [kg] | Page |
|-------------------------------|--|---|-------------|
| Things worth knowing FG-serie | | | 42 |
| FG79 | 2 | 10 | 46 |
| FG100 | 4 | 20 | 48 |





Axis Modules

pneumatic



XY-Series
XYZ-Series

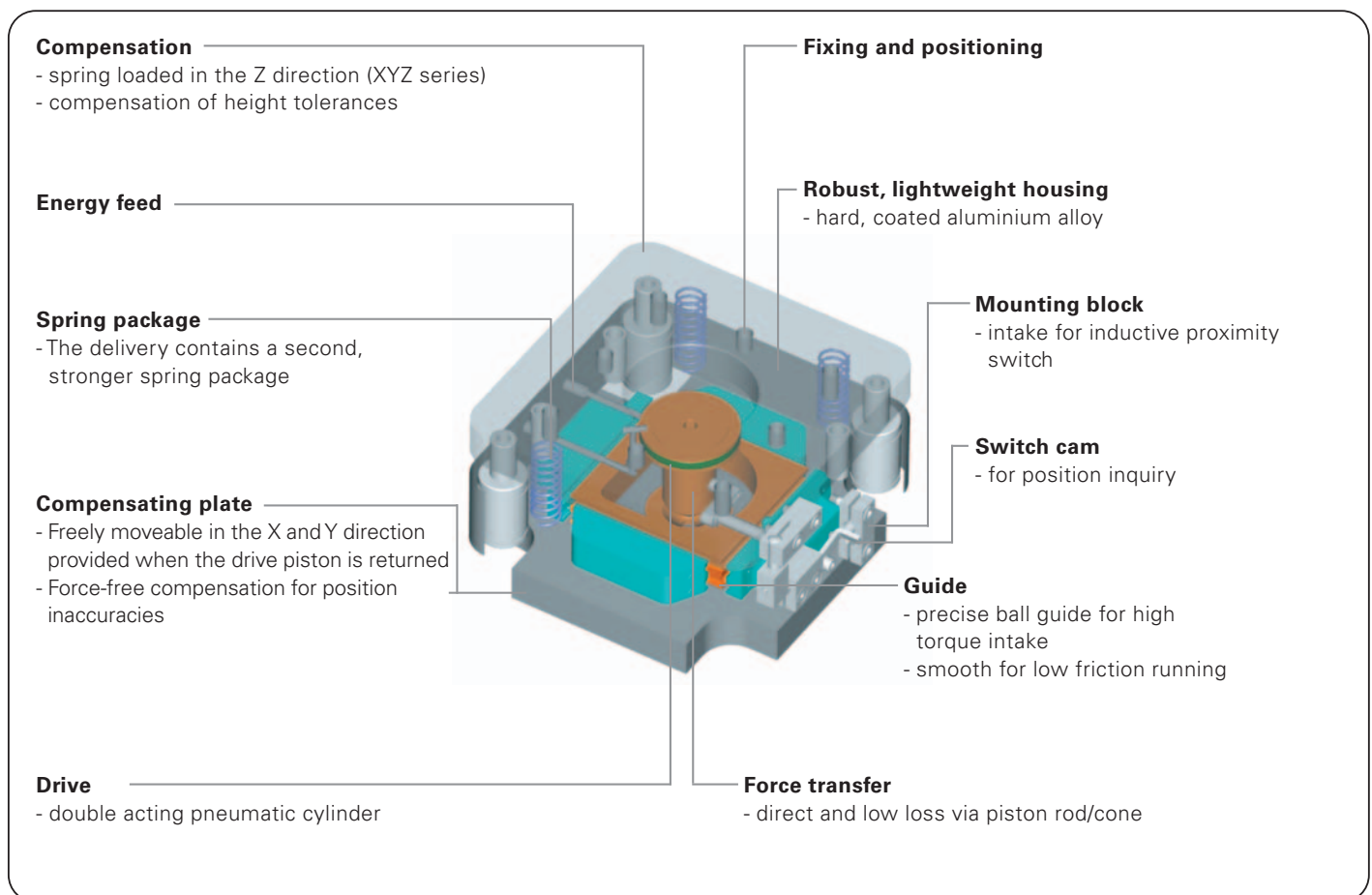
SOMMER
automatic

Axis Modules

➤ Features

- Precise compensation in the X and Y axis with integrated centring mechanism, up to 4000 N centring force and +/- 15 mm stroke
- Compensates for position errors when gripping and thus prevents tension in the gripper jaws
- Position inquiry for „centred and locked” or „open and compensating” via inductive proximity switch
- Additional Z stroke up to 25 mm length to compensating for height tolerances or as extension protection (XYZ series)

Functional diagram



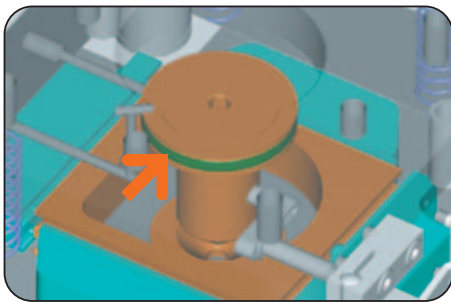
Terms

| | |
|-------------------------|---|
| Centring force: | operating force generated by the pneumatic piston for middlee centring of the blancing plate |
| Handling weight: | recommended weight with central extension and 6 bar operating pressure |
| Repeatability: | dispersion of stop position at 50/100 consecutive swivel cycles |
| Cycle: | distance covered by the piston in one open and close movement |
| Maintenance: | <p>maintenance free up to 10 Mio. cycles (please see the owner's manual for conditions, download from www.sommer-automatic.com)</p> <ul style="list-style-type: none"> • long maintenance intervals keep costs down • long durability |

Model

| Order no. | Stroke X/Y | Stroke Z | centring force | Recommended handl weight |
|-----------|------------|----------|----------------|-----------------------------|
| XY70 | +/- 3 mm | – | 70 N | 6,0 kg |
| XY100 | +/- 5 mm | – | 250 N | 12,0 kg |
| XY160 | +/- 8 mm | – | 750 N | 30,0 kg |
| XY220 | +/- 10 mm | – | 1250 N | 150,0 kg |
| XY320 | +/- 15 mm | – | 4000 N | 400,0 kg |
| XYZ70 | +/- 3 mm | 6 mm | 70 N | 6,0 kg |
| XYZ100 | +/- 5 mm | 10 mm | 250 N | 12,0 kg |
| XYZ160 | +/- 8 mm | 16 mm | 700 N | 30,0 kg |
| XYZ220 | +/- 10 mm | 25 mm | 1200 N | 150,0 kg |

Axis Modules



Drive

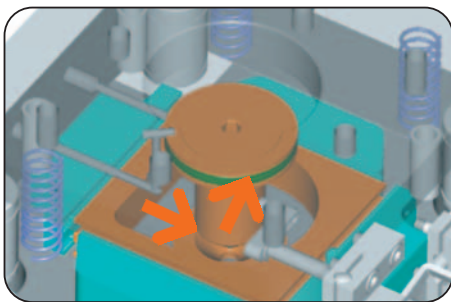
Double acting pneumatic cylinder

- Maximum drive force when locking and unlocking
- Centring force up to 4000 N



Compensation

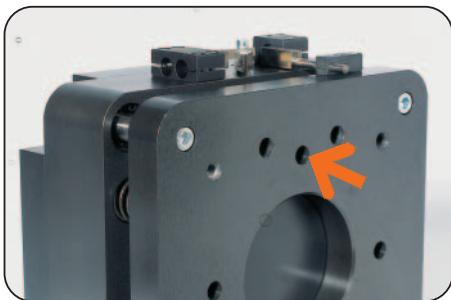
- Compensation plate in X and Y direction freely moveable
- Stroke up to +/- 15 mm
- Force-free compensation for position inaccuracies



Force transfer

Direct and low loss via piston rod/cone

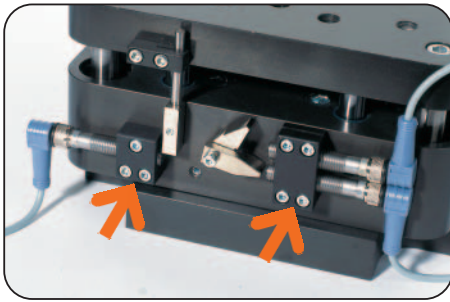
- Maximum centring force
- High repeatability



Machine connection

Energy supply, attachment and positioning-possibilities on several sides

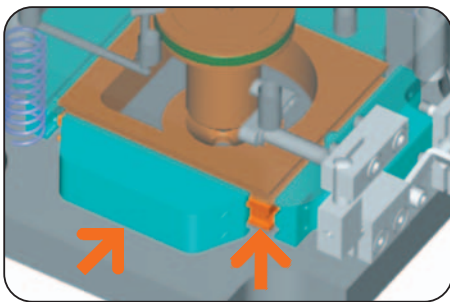
- Machine and tool side with stable threads and pin holes
- Simple connection, low design effort
- Optimum integration into the workroom through individual mounting position



Position sensing

Intake for inductive proximity switch

- Indirect position sensing of piston positions in the X and Y position
- Direct position sensing in the Z position for XYZ series
- Compact
- For inductive proximity switch up to 12 mm diameter



Guide

Hardened steel ball guide

- For maximum force and torque intake
- Very smooth ball track or ball circuit guide (XY320)
- Precise

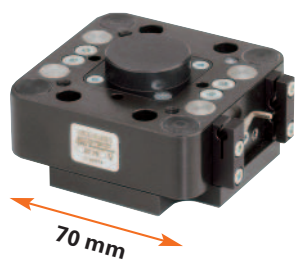


Stroke compensation

Only on XYZ series

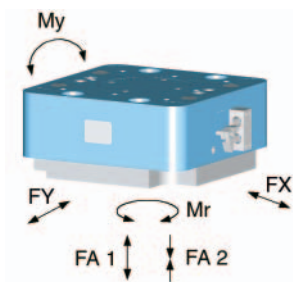
- Stroke compensation spring loaded in Z direction
- Stroke up to 25 mm
- Compensation of height tolerances

Axis Modules



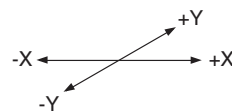
Forces and Moments

Max. Forces and Moments see chart technical data

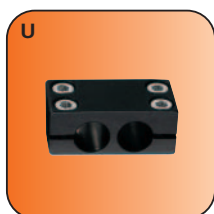


Compensation level

Max. compensation stroke see chart technical data



Included in the delivery

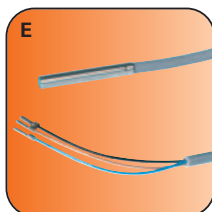


Mounting block
Order no. KB4-04

Accessory list



Pneumatic fittings
Order no. WVM5



Proximity switch
Order no. NJ4-E2

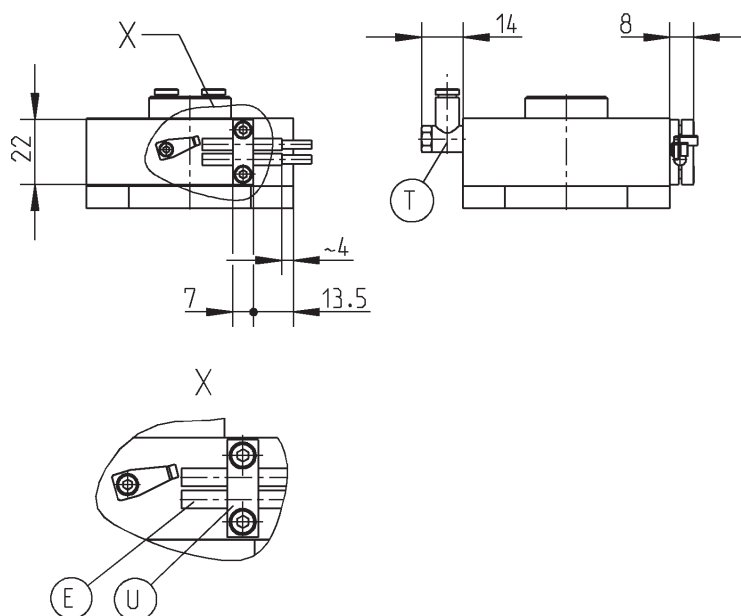


Pneumatic fittings
Order no. GVM5



Plug 3-pole
Order no. S12-G-3

Accessories



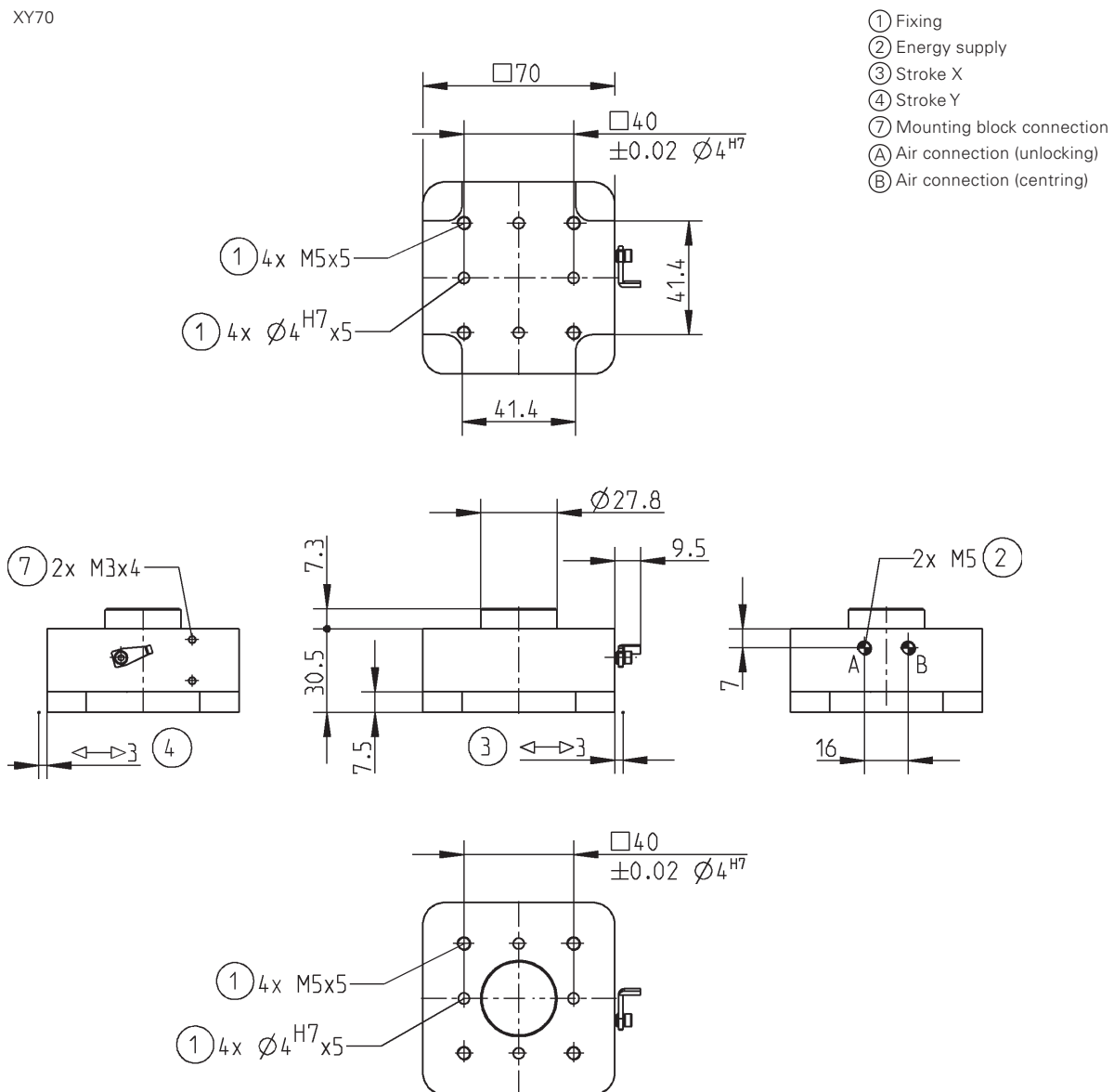
Subject to change without prior notice

| Order no.: | XY70 |
|---------------------------------------|------|
| Stroke X/Y level +/- [mm]: | 3 |
| Centring force X/Y level [N]: | 70 |
| Recommended handling weight [kg]*: | 6 |
| FA1 [N]: | 600 |
| FA2 [N]: | 1200 |
| FX [N]: | 100 |
| FY [N]: | 100 |
| Mr [Nm]: | 9 |
| My [Nm]: | 2,5 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [g]: | 500 |

All data measured at 6 bar

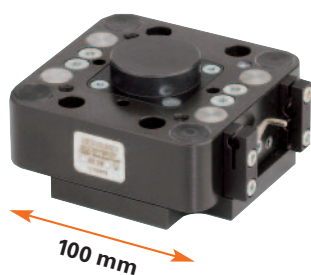
* at central mounting

XY70



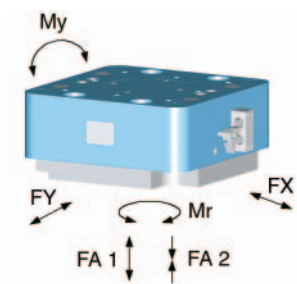
Subject to change without prior notice

Axis Modules



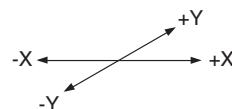
Forces and Moments

Max. Forces and Moments see chart technical data



Compensation level

Max. compensation stroke see chart technical data



Included in the delivery

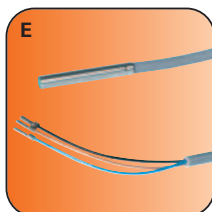


Mounting block
Order no. KB4-04

Accessory list



Pneumatic fittings
Order no. WVM5



Proximity switch
Order no. NJ4-E2

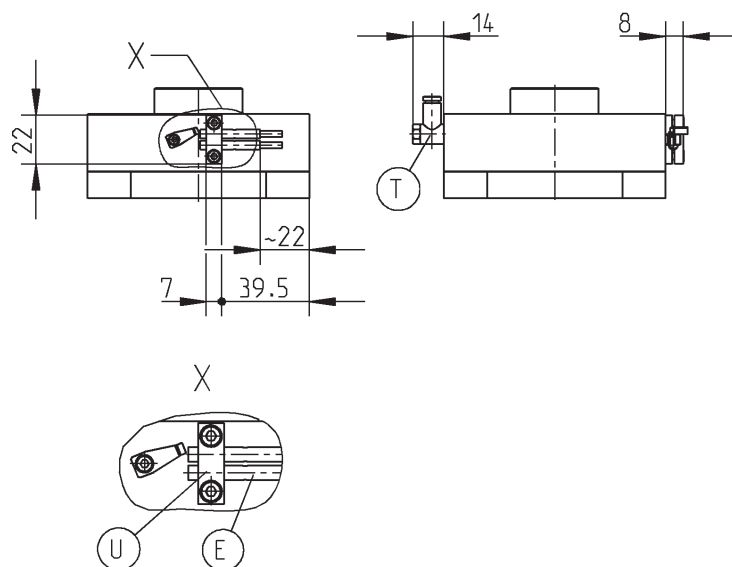


Pneumatic fittings
Order no. GVM5



Plug 3-pole
Order no. S12-G-3

Accessories

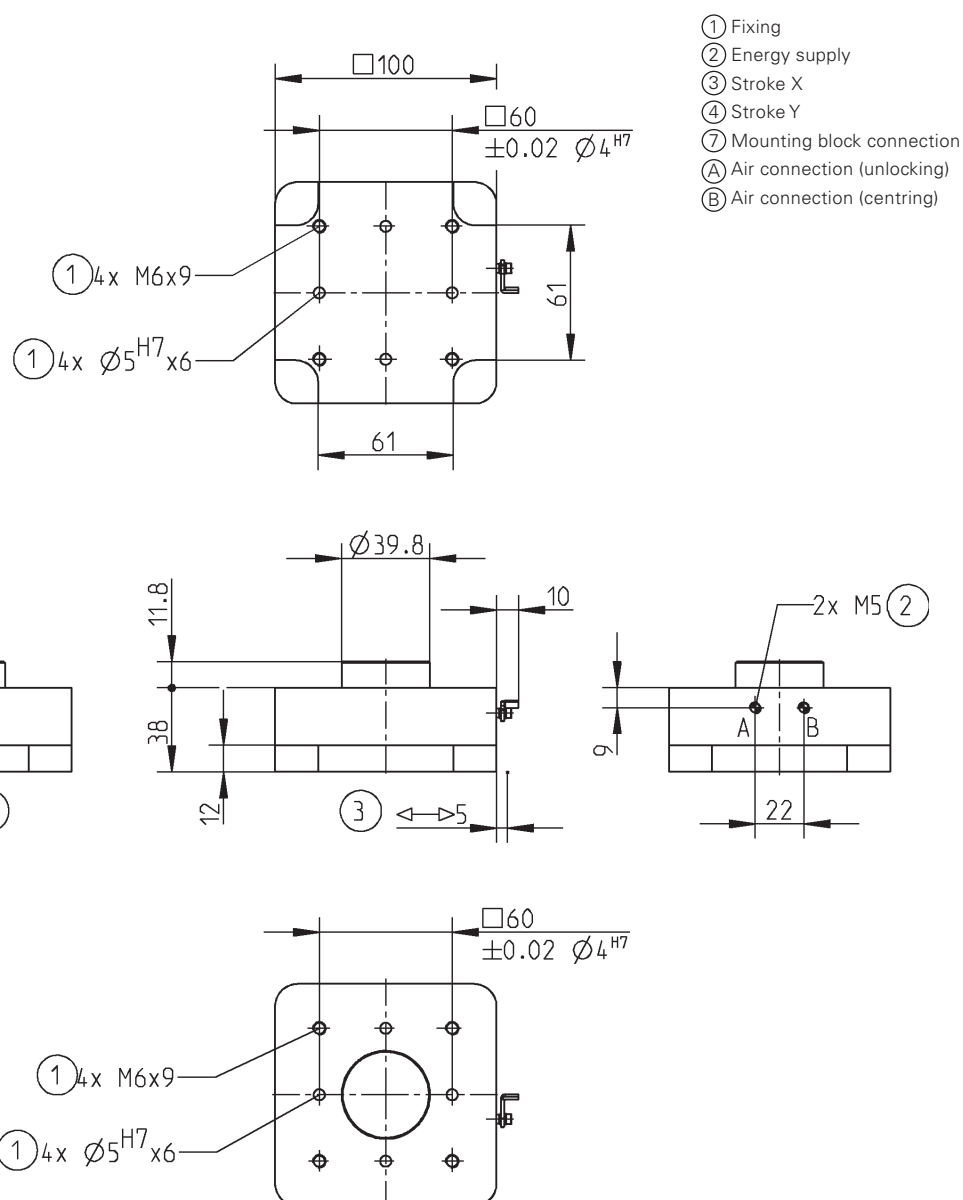


Subject to change without prior notice

| Order no.: | XY100 |
|---------------------------------------|-------|
| Stroke X/Y level +/- [mm]: | 5 |
| Centring force X/Y level [N]: | 250 |
| Recommended handling weight [kg]*: | 12 |
| FA1 [N]: | 900 |
| FA2 [N]: | 1800 |
| FX [N]: | 200 |
| FY [N]: | 200 |
| Mr [Nm]: | 11 |
| My [Nm]: | 4,5 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 1,3 |

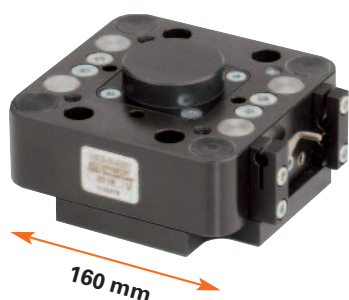
All data measured at 6 bar
 * at central mounting

XY100



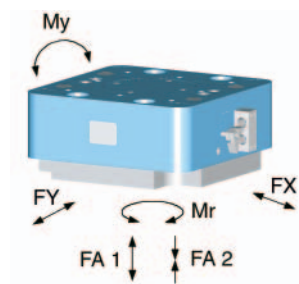
Subject to change without prior notice

Axis Modules



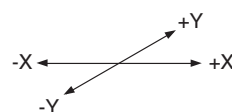
Forces and Moments

Max. Forces and Moments see chart technical data



Compensation level

Max. compensation stroke see chart technical data



Included in the delivery



Mounting block
Order no. KB8-42

Accessory list



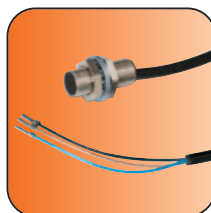
Pneumatic fittings
Order no. WV1/8x6



Proximity switch
Order no. NJ8-E2S



Pneumatic fittings
Order no. GV1/8x6



Proximity switch
Order no. NJ8-E2

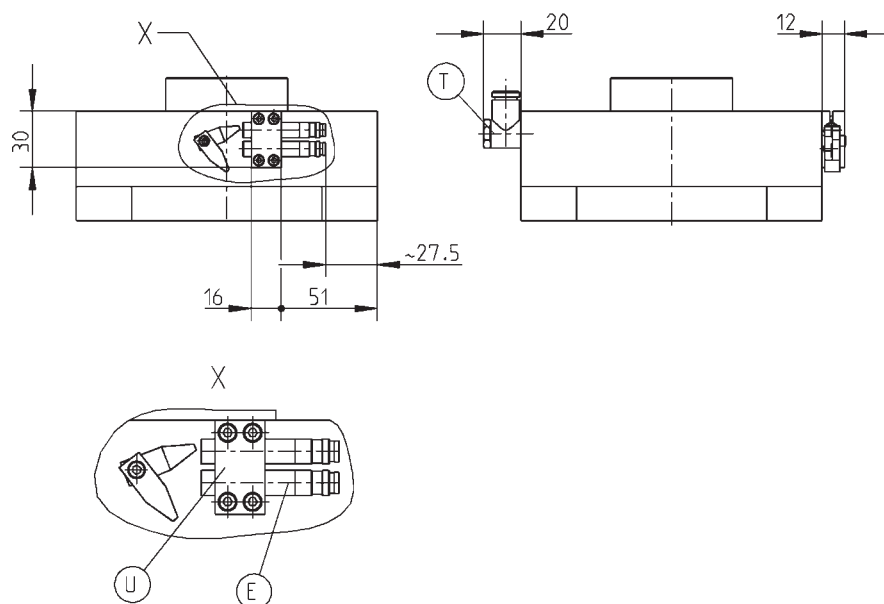


Cable angled plug
Order no. KAW500



Plug 3-pole
Order no. S12-G-3

Accessories



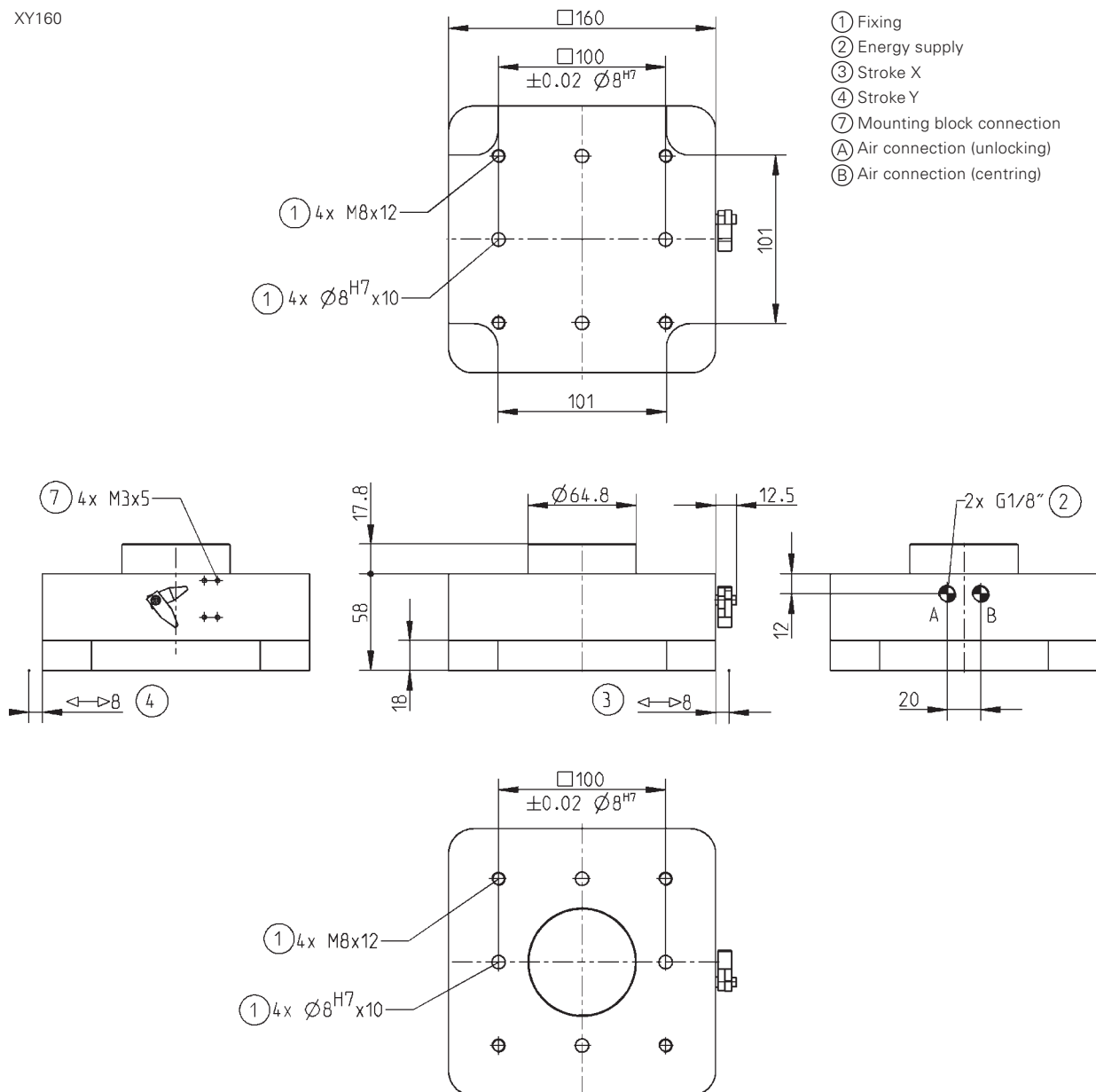
Subject to change without prior notice

| | |
|---------------------------------------|--------------|
| Order no.: | XY160 |
| Stroke X/Y level +/- [mm]: | 8 |
| Centring force X/Y level [N]: | 700 |
| Recommended handling weight [kg]*: | 30 |
| FA1 [N]: | 1500 |
| FA2 [N]: | 3000 |
| FX [N]: | 600 |
| FY [N]: | 600 |
| Mr [Nm]: | 20 |
| My [Nm]: | 12 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 4,5 |

All data measured at 6 bar

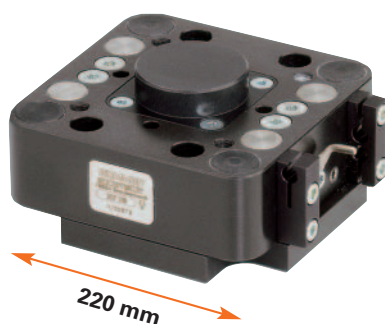
* at central mounting

XY160



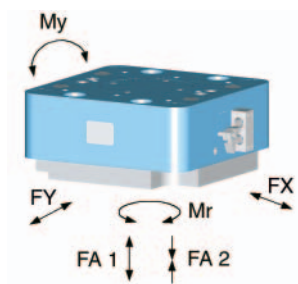
Subject to change without prior notice

Axis Modules



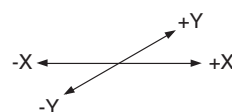
Forces and Moments

Max. Forces and Moments see chart technical data

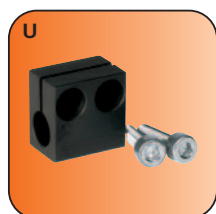


Compensation level

Max. compensation stroke see chart technical data



Included in the delivery



Mounting block
Order no. KB12-04

Accessory list



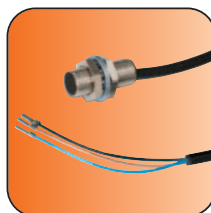
Pneumatic fittings
Order no. WV1/4x6



Proximity switch
Order no. NJ12-E2S



Pneumatic fittings
Order no. GV1/4x6



Proximity switch
Order no. NJ8-E2

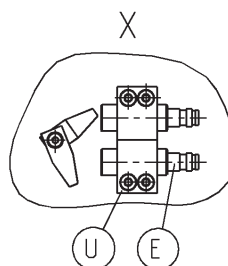
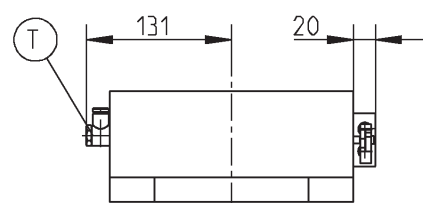
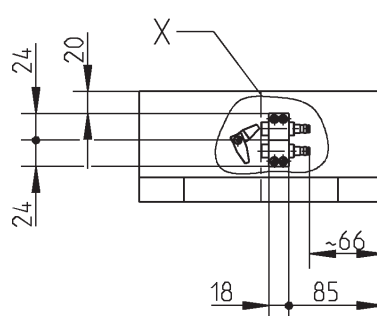


Cable angled plug
Order no. KAW500



Plug 3-pole
Order no. S12-G-3

Accessories



Subject to change without prior notice



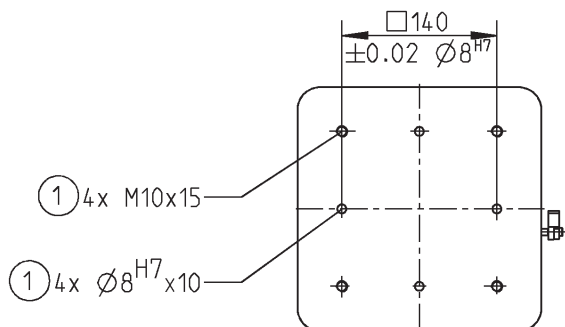
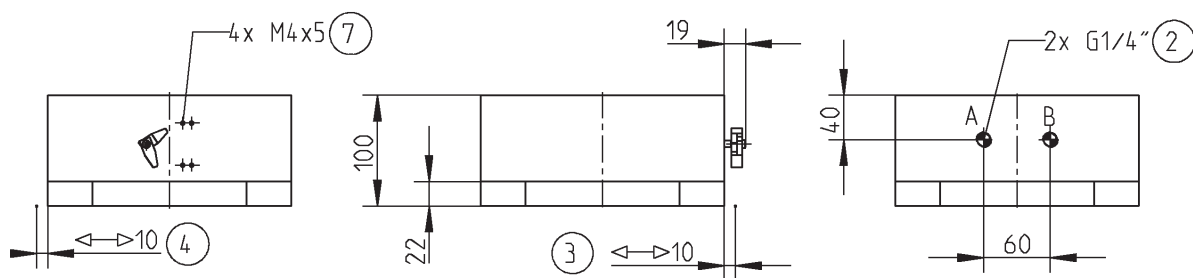
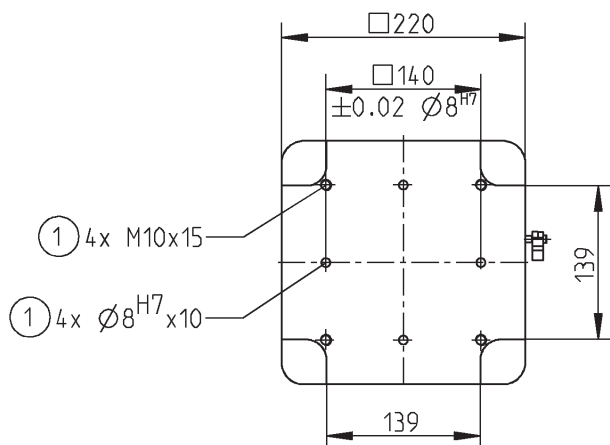
| Order no.: | XY220 |
|---------------------------------------|-------|
| Stroke X/Y level +/- [mm]: | 10 |
| Centring force X/Y level [N]: | 1200 |
| Recommended handling weight [kg]*: | 150 |
| FA1 [N]: | 2500 |
| FA2 [N]: | 5000 |
| FX [N]: | 650 |
| FY [N]: | 650 |
| Mr [Nm]: | 30 |
| My [Nm]: | 30 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 14,5 |

All data measured at 6 bar

* at central mounting

XY220

- ① Fixing
- ② Energy supply
- ③ Stroke X
- ④ Stroke Y
- ⑦ Mounting block connection
- A Air connection (unlocking)
- B Air connection (centring)



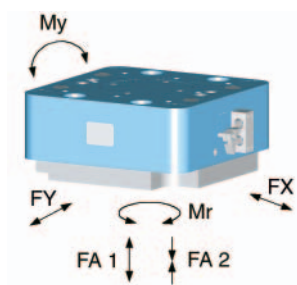
Subject to change without prior notice

Axis Modules



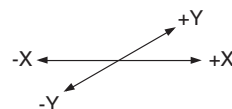
Forces and Moments

Max. Forces and Moments see chart technical data

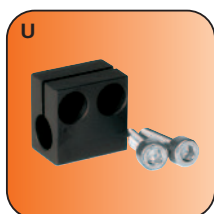


Compensation level

Max. compensation stroke see chart technical data



Included in the delivery



Mounting block
Order no. KB12-04

Accessory list



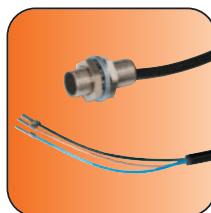
Pneumatic fittings
Order no. WV1/4x6



Proximity switch
Order no. NJ12-E2S



Pneumatic fittings
Order no. GV1/4x6



Proximity switch
Order no. NJ8-E2

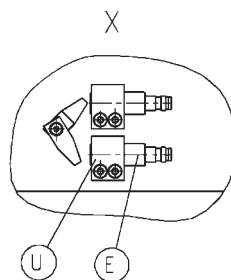
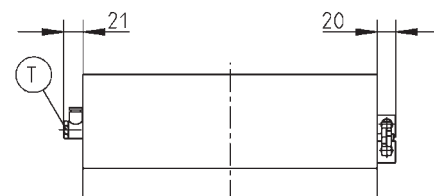
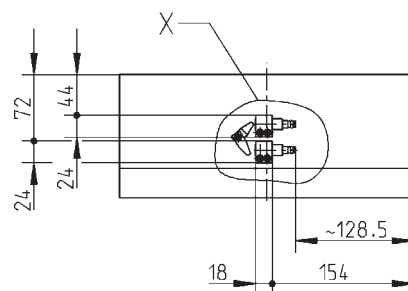


Cable angled plug
Order no. KAW500



Plug 3-pole
Order no. S12-G-3

Accessories

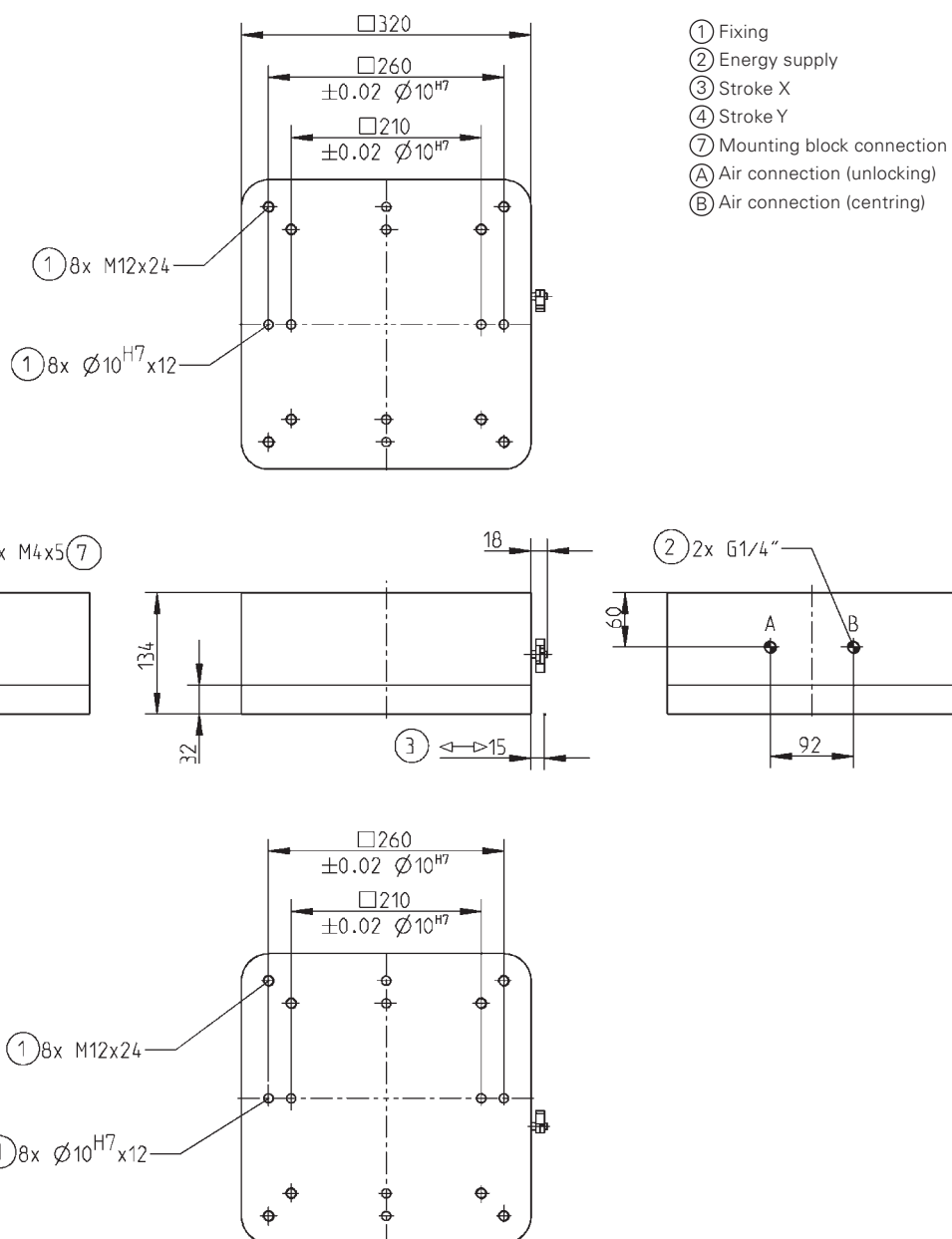


Subject to change without prior notice

| Order no.: | XY320 |
|---------------------------------------|-------|
| Stroke X/Y level +/- [mm]: | 15 |
| Centring force X/Y level [N]: | 4000 |
| Recommended handling weight [kg]*: | 400 |
| FA1 [kN]: | 10 |
| FA2 [kN]: | 20 |
| FX [kN]: | 10 |
| FY [kN]: | 10 |
| Mr [Nm]: | 500 |
| My [Nm]: | 500 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 39,0 |

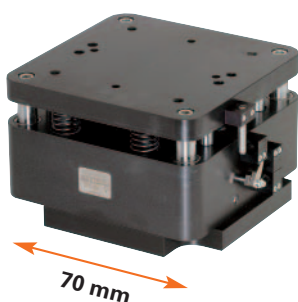
All data measured at 6 bar
 * at central mounting

XY320



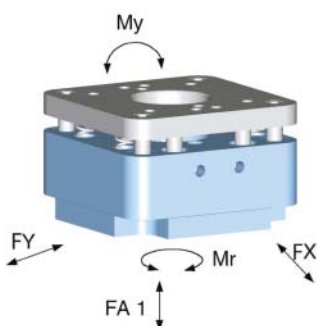
Subject to change without prior notice

Axis Modules



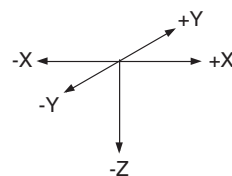
Forces and Moments

Max. Forces and Moments see chart technical data

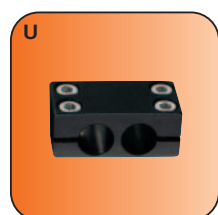


Compensation level

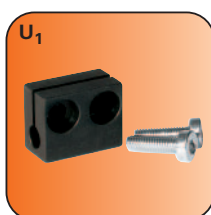
Max. compensation stroke see chart technical data



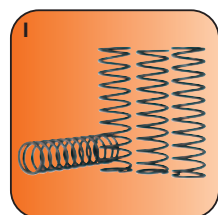
Included in the delivery



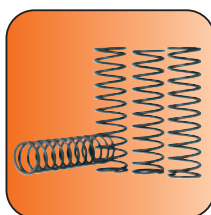
Mounting block
Order no. KB4-04



Mounting block
Order no. KB4-05



Spring package 1
(pre-assembly)
Order no. CFED07020

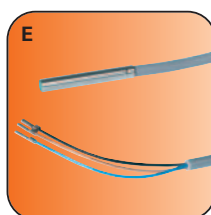


Spring package 2
(pre-assembly)
Order no. CFED07040

Accessory list



Pneumatic fittings
Order no. WVM5



Proximity switch
Order no. NJ4-E2

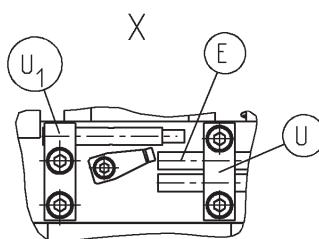
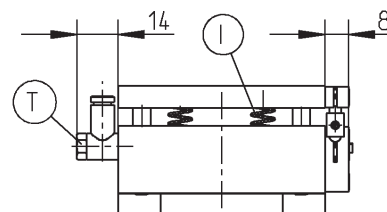
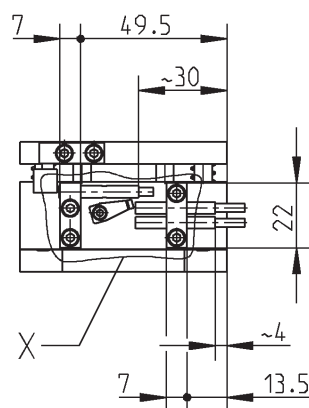


Pneumatic fittings
Order no. GVM5



Plug 3-pole
Order no. S12-G-3

Accessories



Subject to change without prior notice

| | |
|---|--------------|
| Order no.: | XYZ70 |
| Stroke X/Y level +/- [mm]: | 3 |
| Stroke Z-axis [mm]: | 6 |
| Centring force X/Y level [N]: | 70 |
| Spring force Z-axis (Spring package 1) min./max. [N]**: | 50/65 |
| Spring force Z-axis (Spring package 2) min./max. [N]**: | 75/105 |
| Recommended handling weight [kg]* | 6 |
| FA1 [N]: | 600 |
| FX [N]: | 100 |
| FY [N]: | 100 |
| Mr [Nm]: | 9 |
| My [Nm]: | 2,5 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [g]: | 600 |

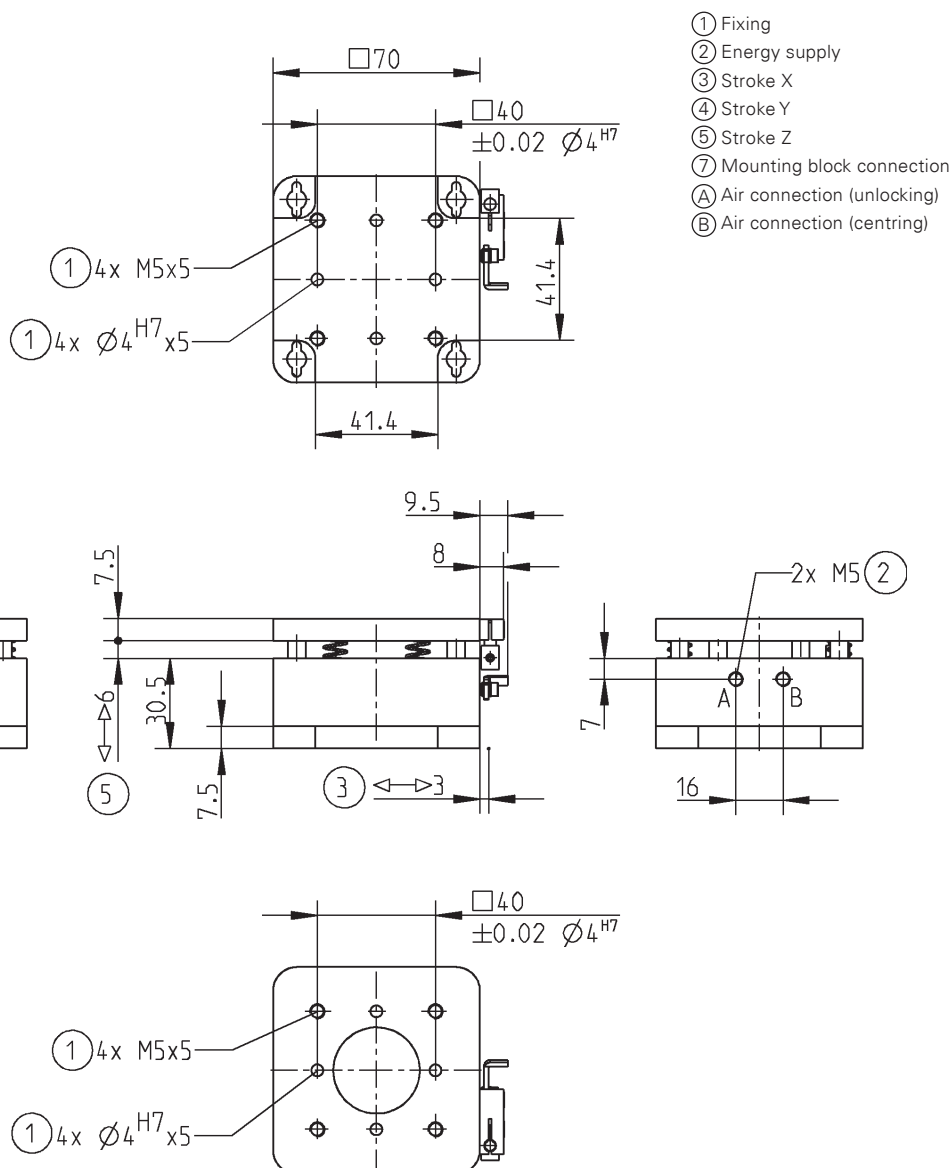
All data measured at 6 bar

* at central mounting

** Spring package 1 preset

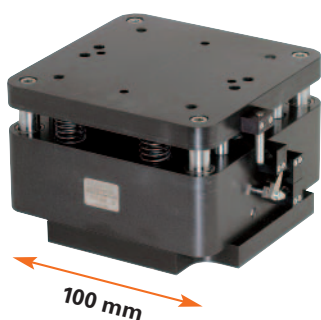
*** Spring package 2 will be delivered separately and can be changes if required

XYZ70



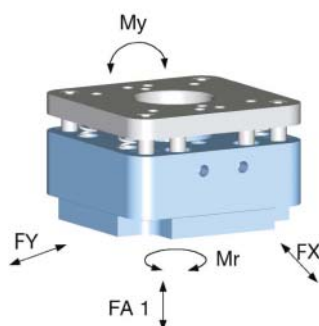
Subject to change without prior notice

Axis Modules



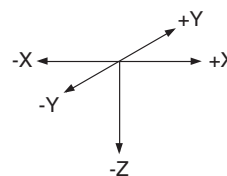
Forces and Moments

Max. Forces and Moments see chart technical data

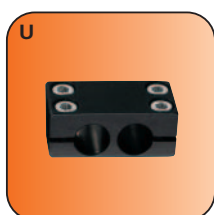


Compensation level

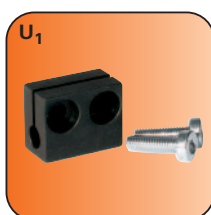
Max. compensation stroke see chart technical data



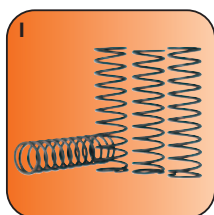
Included in the delivery



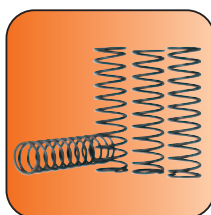
Mounting block
Order no. KB4-04



Mounting block
Order no. KB4-05



Spring package 1
(pre-assembly)
Order no. CFED0702

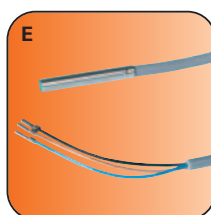


Spring package 2
(pre-assembly)
Order no. CFED07040

Accessory list



Pneumatic fittings
Order no. WVM5



Proximity switch
Order no. NJ4-E2

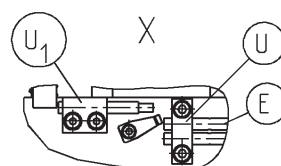
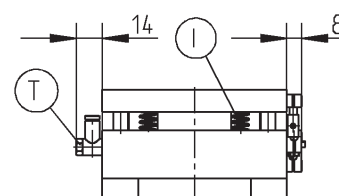
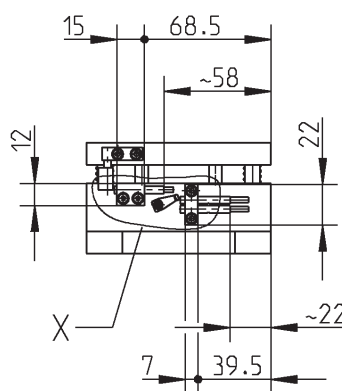


Pneumatic fittings
Order no. GVM5



Plug 3-pole
Order no. S12-G-3

Accessories



Subject to change without prior notice



| | |
|---|--------|
| Order no.: | XYZ100 |
| Stroke X/Y level +/- [mm] | 5 |
| Stroke Z-axis [mm]: | 10 |
| Centring force X/Y level [N]: | 250 |
| Spring force Z-axis (Spring package 1) min./max. [N]**: | 34/80 |
| Spring force Z-axis (Spring package 2) min./max. [N]**: | 40/100 |
| Recommended handling weight [kg]*: | 12 |
| FA1 [N]: | 900 |
| FX [N]: | 200 |
| FY [N]: | 200 |
| Mr [Nm]: | 11 |
| My [Nm]: | 4,5 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 1,6 |

All data measured at 6 bar

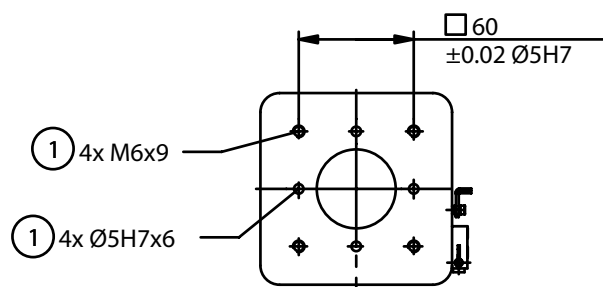
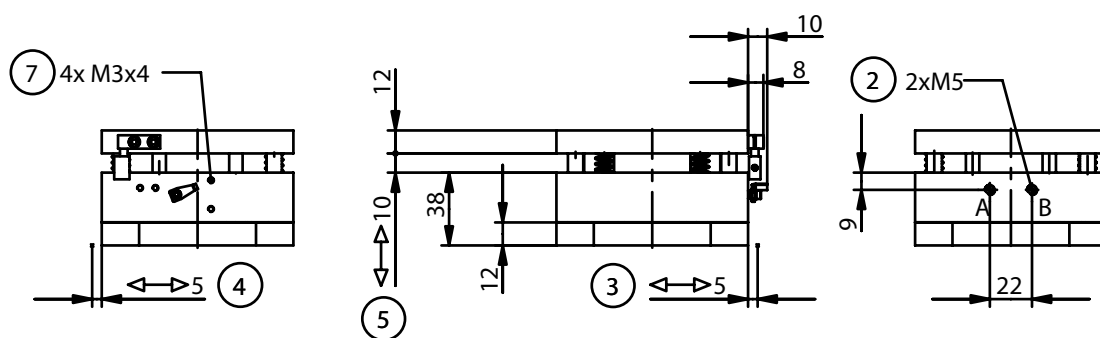
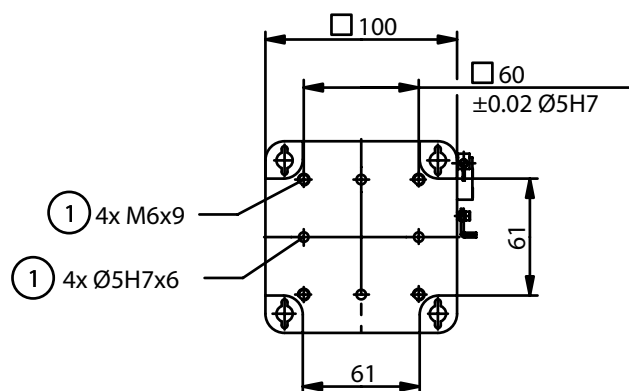
* at central mounting

** Spring package 1 preset

*** Spring package 2 will be delivered separately and can be changes if required

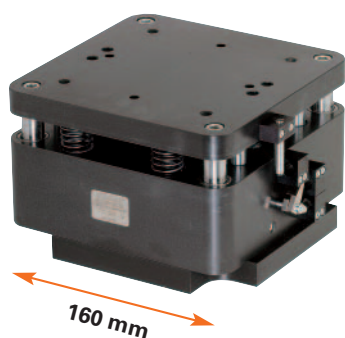
XYZ100

- ① Fixing
- ② Energy supply
- ③ Stroke X
- ④ Stroke Y
- ⑤ Stroke Z
- ⑦ Mounting block connection
- A Air connection (unlocking)
- B Air connection (centring)



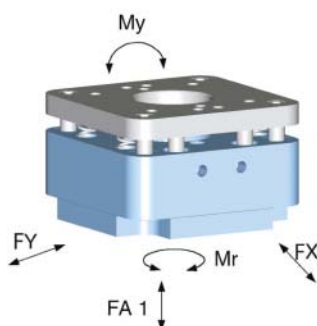
Subject to change without prior notice

Axis Modules



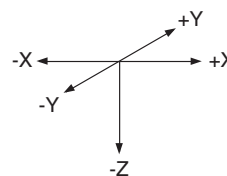
Forces and Moments

Max. Forces and Moments see chart technical data

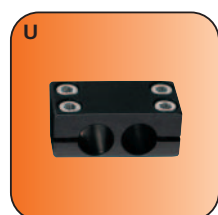


Compensation level

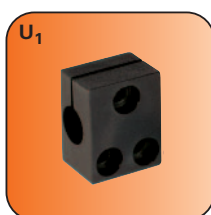
Max. compensation stroke see chart technical data



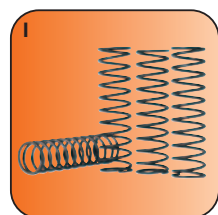
Included in the delivery



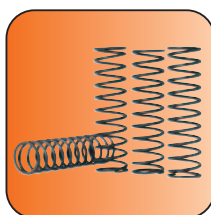
Mounting block
Order no. KB8-42



Mounting block
Order no. KB8



Spring package 1
(pre-assembly)
Order no. CFED16030



Spring package 2
Order no. CFED16040

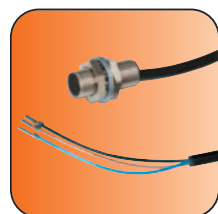
Accessory list



Pneumatic fittings
Order no. WV1/8x6



Proximity switch
Order no. NJ8-E2S

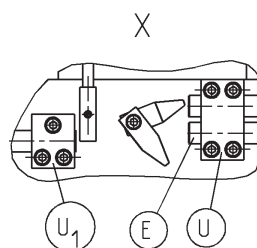
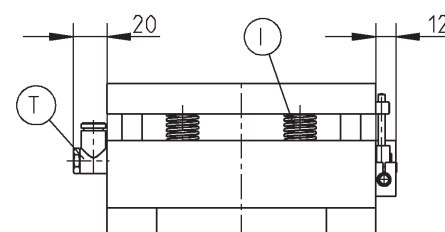
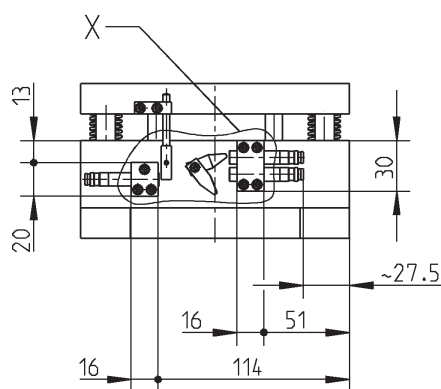


Proximity switch
Order no. NJ8-E2



Cable angled plug
Order no. KAW500

Accessories



Subject to change without prior notice



| | |
|---|---------------|
| Order no.: | XYZ160 |
| Stroke X/Y level +/- [mm]: | 8 |
| Stroke Z-axis [mm]: | 16 |
| Centring force X/Y level [N]: | 700 |
| Spring force Z-axis (Spring package 1) min./max. [N]**: | 150/250 |
| Spring force Z-axis (Spring package 2) min./max. [N]**: | 200/320 |
| Recommended handling weight [kg]*: | 30 |
| FA1 [N]: | 1500 |
| FX [N]: | 600 |
| FY [N]: | 600 |
| Mr [Nm]: | 20 |
| My [Nm]: | 12 |
| Repeatability +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 6,1 |

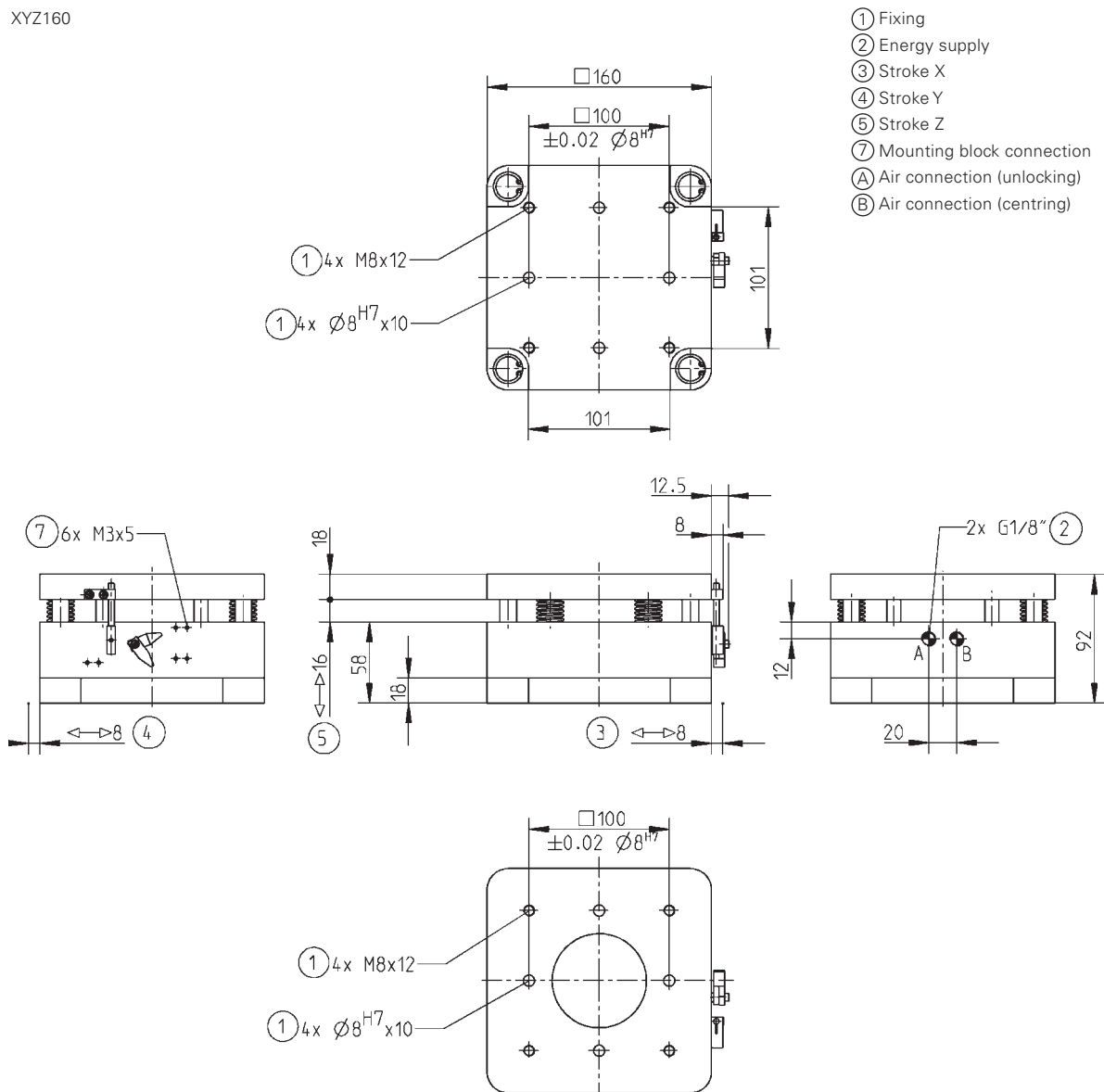
All data measured at 6 bar

* at central mounting

** Spring package 1 preset

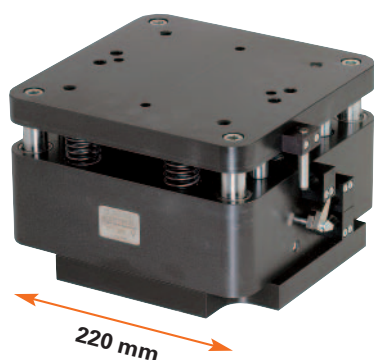
*** Spring package 2 will be delivered separately and can be changes if required

XYZ160



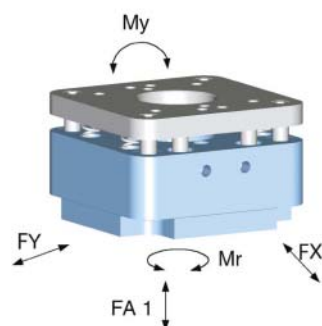
Subject to change without prior notice

Axis Modules



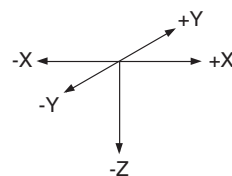
Forces and Moments

Max. Forces and Moments see chart technical data

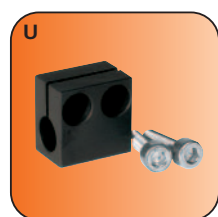


Compensation level

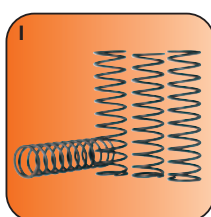
Max. compensation stroke see chart technical data



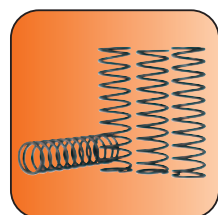
Included in the delivery



Mounting block
Order no. KB8-42



Spring package 1
(vormontiert)
Order no. CFED22030



Spring package 2
Order no. CFED22040

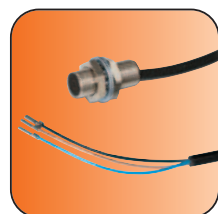
Accessory list



Pneumatic fittings
Order no. WV1/4x6



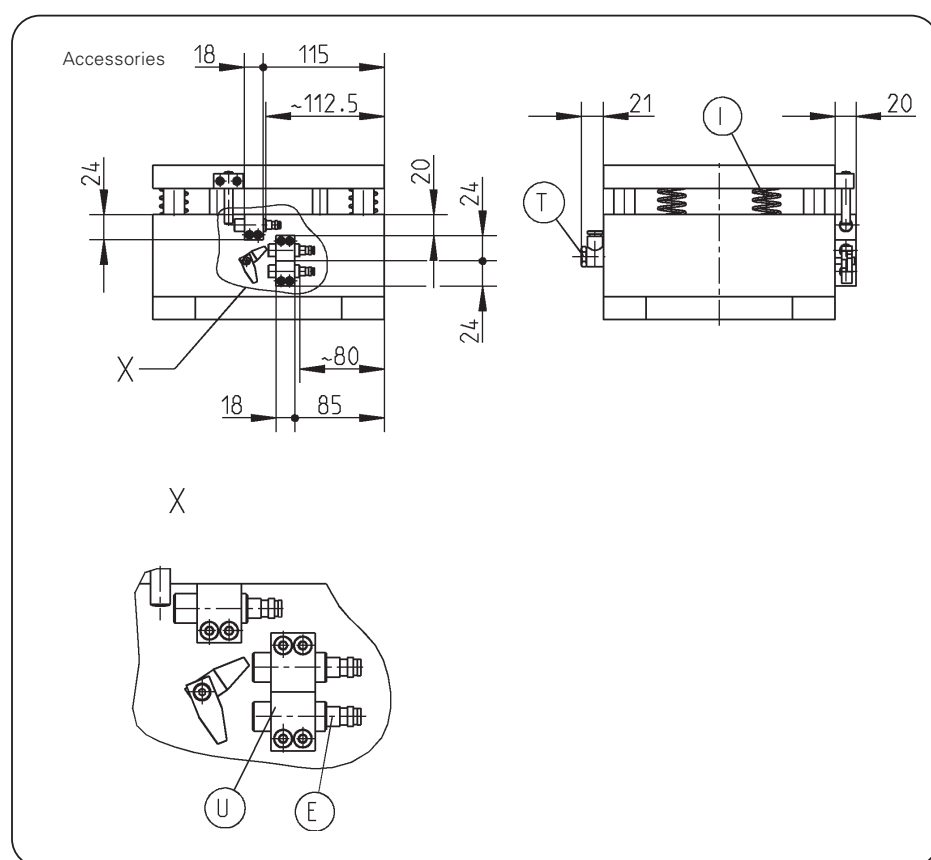
Proximity switch
Order no. NJ12-E2S



Proximity switch
Order no. NJ12-E2



Cable angled plug
Order no. KAW500



Subject to change without prior notice

*** Spring package 2 will be delivered separately and can be changes if required



*Crash **Protection***

pneumatic



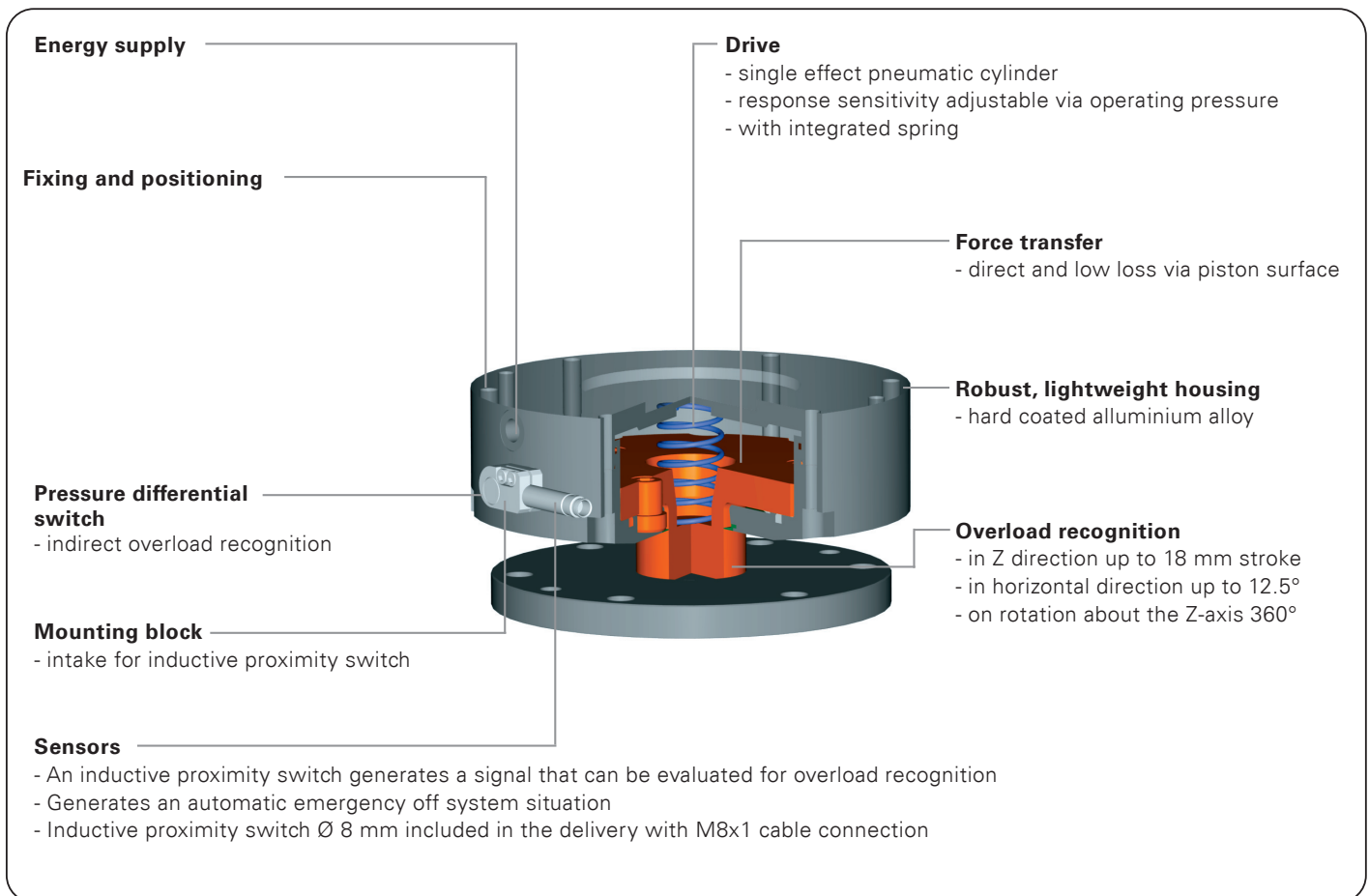
CS Series

Crash Protection

➤ Features

- Effective and rapid reaction collision protection with compressed air impacted piston
- Required moments and forces infinitely adjustable via operating pressure
- Deviation by the tool generates a signal that can be used to control the system emergency off
- Simple and precise reset in the start position following an overload reaction (manual)

Functional diagram



Terms

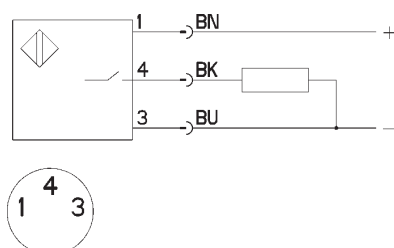
| | |
|-------------------------|--|
| Handling weight: | recommended weight at central mounting and 6 bar operating pressure |
| Repeatability: | at end stops after 50/100 consecutive cycles |
| Maintenance: | the crash protection must be function checked after every deviation and emergency stop situation |

Model

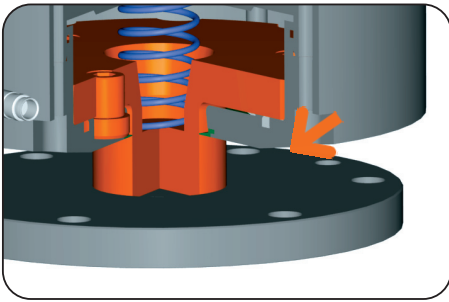
| Order no. | Deviation in Z | Horizontal deviation | Recommended handling weight |
|-----------|----------------|----------------------|-----------------------------|
| CS80-B | 12,5 mm | 12,5° | 6 kg |
| CS100-B | 10,5 mm | 12,5° | 12 kg |
| CS160 | 18,0 mm | 9,0° | 60 kg |

Technical data about the mounted proximity switch

| | |
|------------------------------|--|
| Operating voltage: | 10...30V DC |
| Operating current: | 200 mA |
| Voltage drop: | ≤ 2,5V |
| Output: | PNP normally open, short circuit-proof |
| System of protection: | IP 65 at screwed condition with cable plug |
| Diagram: | |



Crash Protection



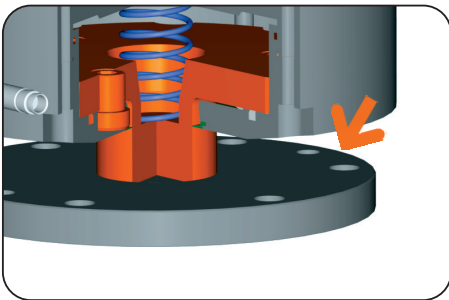
Drive

- Single effect pneumatic cylinder
- With integrated spring



Overload recognition

- In Z direction up to 18 mm stroke
- In horizontal direction up to 12.5°
- On rotation about the Z axis 360°



Position maintenance

Forces and torques infinitely adjustable via operating pressure

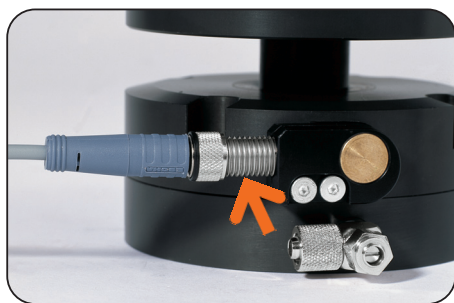
- The operating pressure regulates the contact sensitivity
- Reliable operating pressure of 0.5 – 6 bar



Machine connection

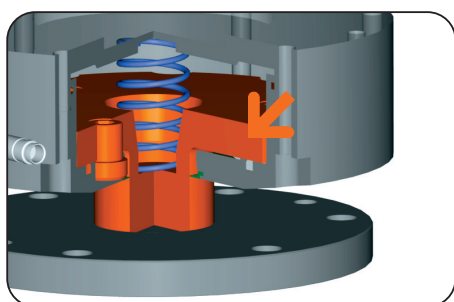
Energy feed, fixing and positioning options

- Machine and tool side with stable threads and pin holes
- Simple connection, low design effort
- Defined position by means of centring disc and pin hole



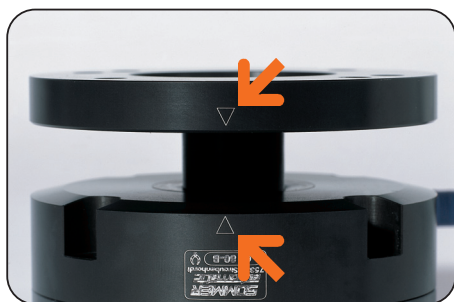
Sensors

- An inductive proximity switch Ø 8 mm included in the delivery with M8x1 cable connection generates a signal, that can be evaluated for overload recognition and automatic emergency off system situation



Force transfer

- Direct and low loss via piston surface
- Optimum force steering of drive force in holding force



Home position

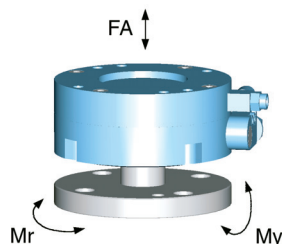
- A mechanically indexed position guarantees a reproducible zero point position after overload reaction
- Precise repetition accuracy even after any overload reaction

Crash Protection



Forces and Moments

Max. Forces and Moments see chart technical data



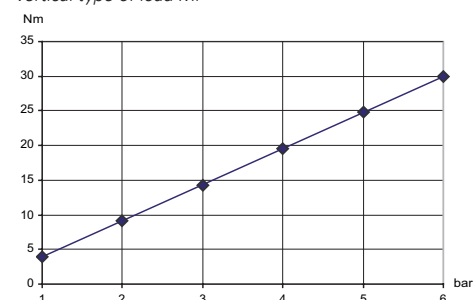
Air pressurisation

shows force and moments against the pressure

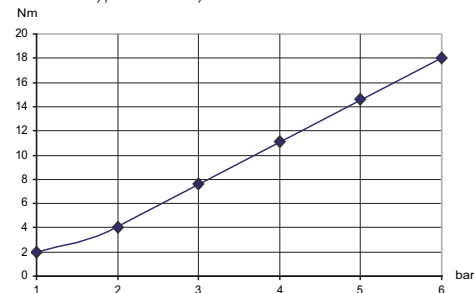
axial type of load FA



vertical type of load Mr



torsional type of load My



Included in the delivery



Proximity switch
Bst.-Nr. NJ8-E2S-04

Accessory list



Pneumatic fittings
Order no. WVM5



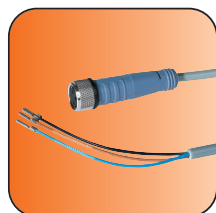
Adapter plate
Order no. CS-P80



Centering disc
Order no. ZE40H7x6



Cable angled plug
Order no. KAW500

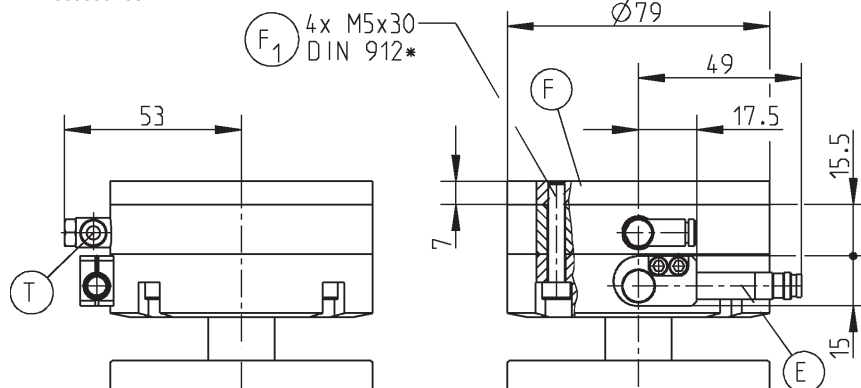


Cable straight plug
Order no. KAG500



Plug 3-pole
Order no. S12-G-3

Accessories



* replaced by DIN EN ISO 4762

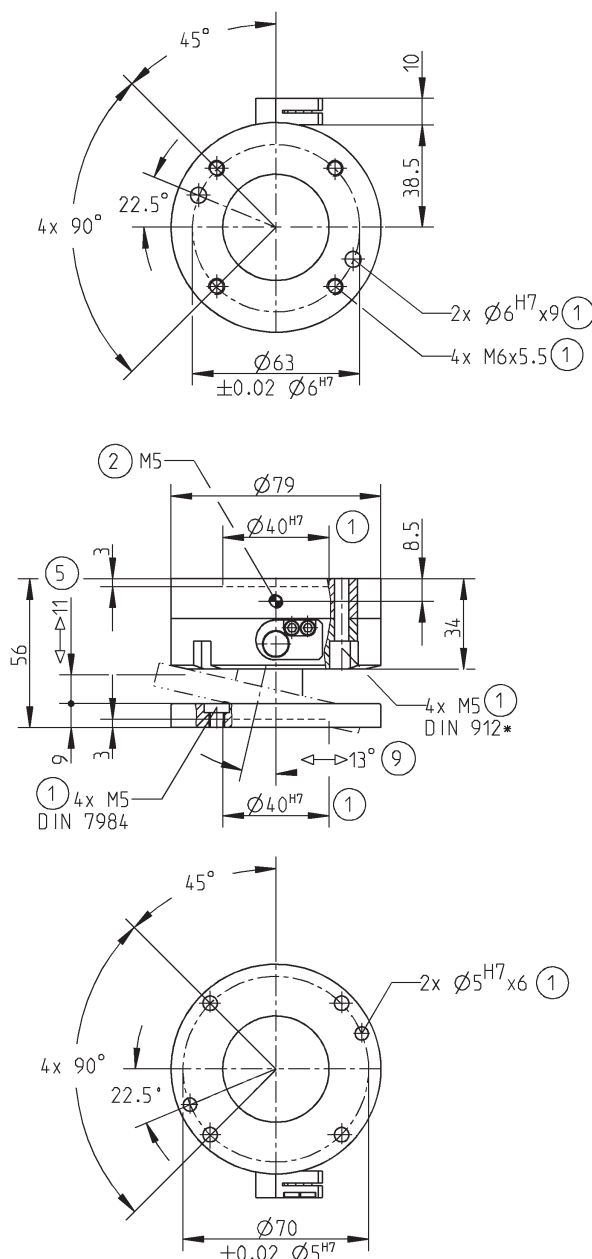
Subject to change without prior notice

| Order no.: | CS80-B |
|---------------------------------------|--------|
| Recommended handling weight [kg]*: | 6 |
| Deviation Z [mm]: | 12,5 |
| Axial repeat accuracy +/- [mm]: | 0,05 |
| Horizontal deviation [°]: | 12,5 |
| Radial repetition accuracy +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 0,5/6 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [g]: | 400 |

All data measured at 6 bar

* at central mounting

CS80-B



- ① Fixing CS
- ② Energy supply
- ⑤ Stroke Z
- ⑨ Deviation maximal

* replaced by DIN EN ISO 4762

Subject to change without prior notice

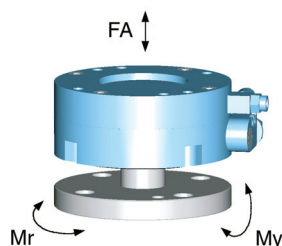
Crash Protection



Ø 99 mm

Forces and Moments

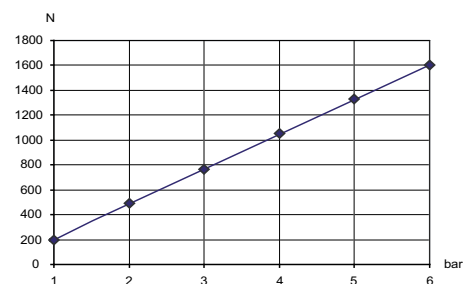
Max. Forces and Moments see chart
technical data



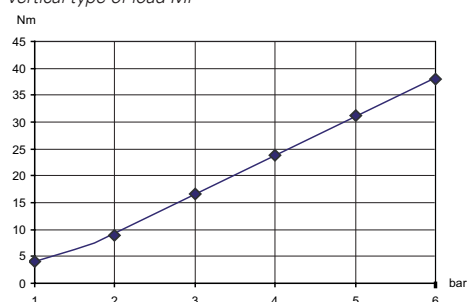
Air pressurisation

shows force and moments against the pressure

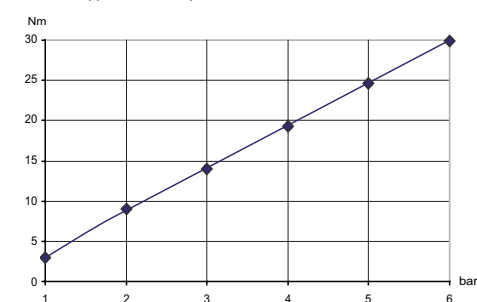
axial type of load FA



vertical type of load Mr



torsional typ of load M_y



Included in the delivery



Proximity switch
Order no. NJ8-E2S-04

Accessory list



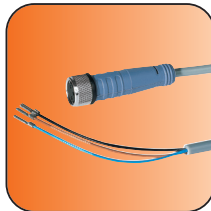
Pneumatic fittings
Order no. WVM5



Adapter plate
Order no. CS-P100



Cable angled plug
Order no. KAW500

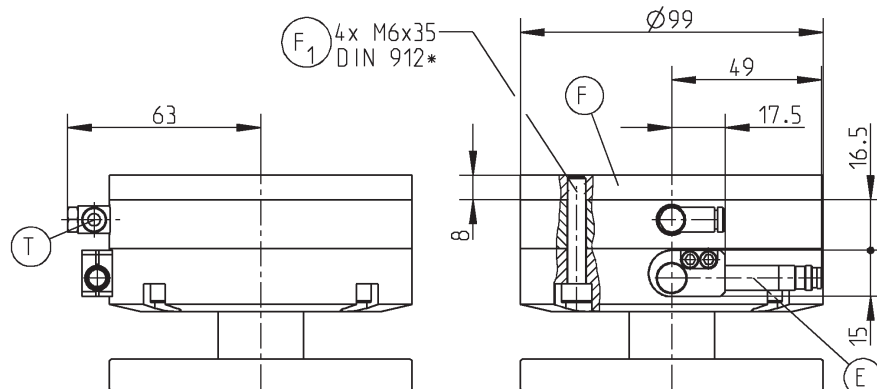


Cable straight plug
Order no. KAG500



Plug 3-pole
Order no. S12-G-3

Accessories



* replaced by DIN EN ISO 4762

Subject to change without prior notice

All data measured at 6 bar
* *at central mounting*

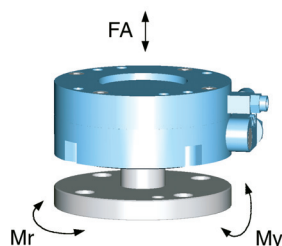


Crash Protection



Forces and Moments

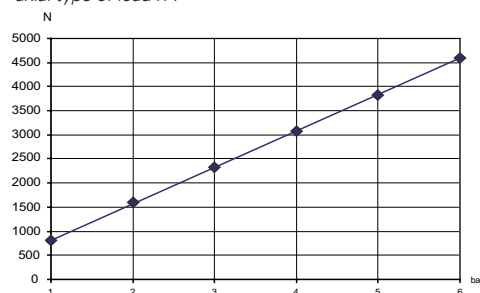
Max. Forces and Moments see chart technical data



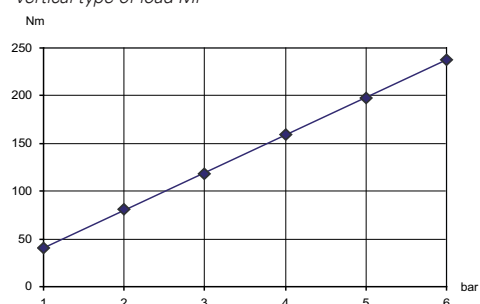
Air pressurisation

shows force and moments against the pressure

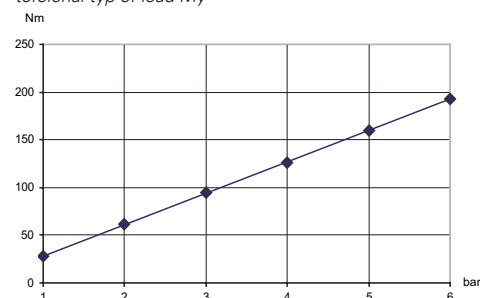
axial type of load FA



vertical type of load Mr



torsional type of load My



Included in the delivery



Proximity switch
Order no. NJ8-E2S/04

Accessory list



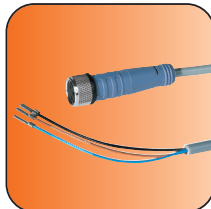
Pneumatic fittings
Order no. WV1/8x6



Adapter plate
Order no. CS-P160



Cable angled plug
Order no. KAW500

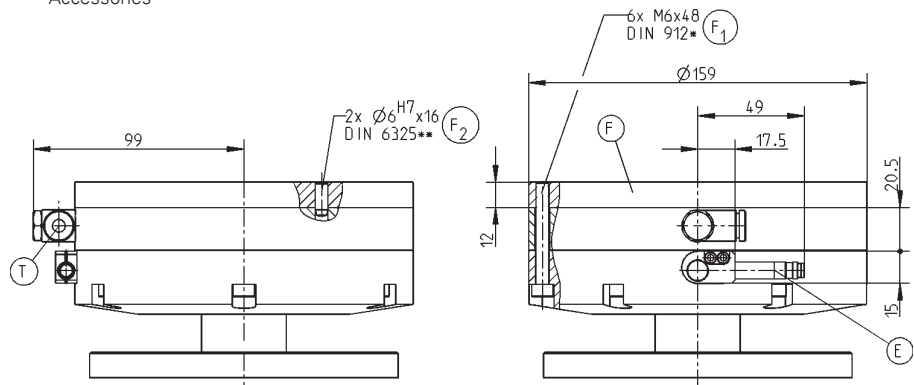


Cable straight plug
Order no. KAG500



Plug 3-pole
Order no. S12-G-3

Accessories



* replaced by DIN EN ISO 4762
** replaced by DIN EN 28743

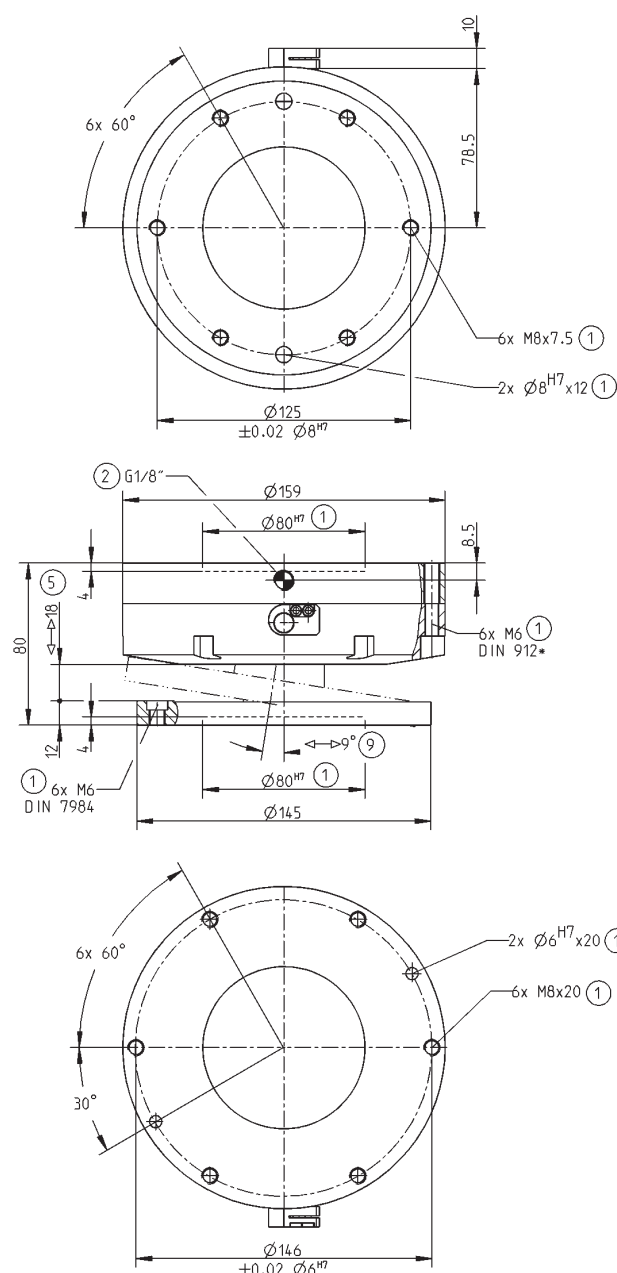
Subject to change without prior notice

| | |
|---------------------------------------|--------------|
| Order no.: | CS160 |
| Recommended handling weight [kg]*: | 60 |
| Deviation Z [mm]: | 18 |
| Axial repeat accuracy +/- [mm]: | 0,05 |
| Horizontal deviation [°]: | 9 |
| Radial repetition accuracy +/- [mm]: | 0,05 |
| Min./max. operating pressure [bar]: | 0,5/6 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 2,8 |

All data measured at 6 bar

* at central mounting

CS160



- ① Fixing CS
- ② Energy supply
- ⑤ Stroke Z
- ⑨ Deviation maximal

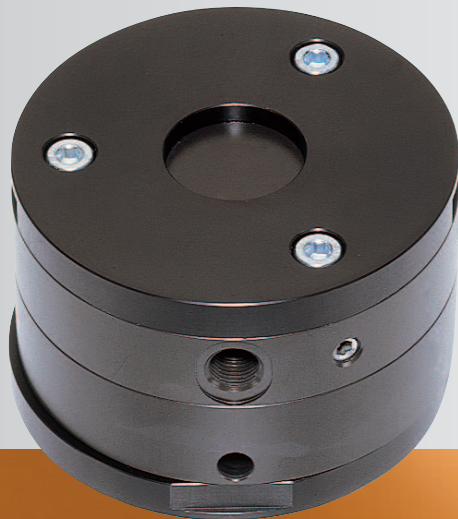
* replaced by DIN EN ISO 4762

Subject to change without prior notice



Alignment Compensator

pneumatic



FG Series

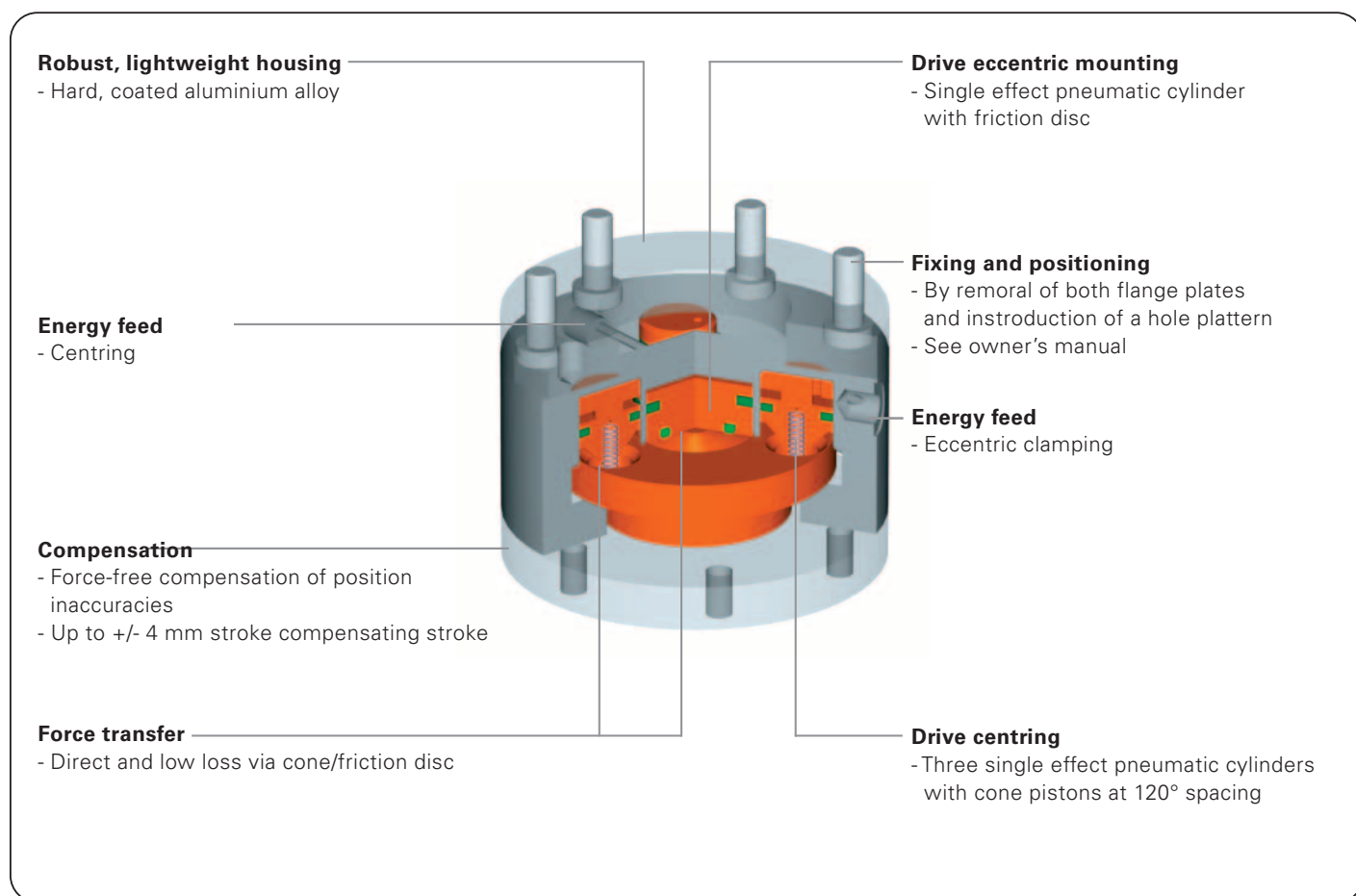
SOMMER
automatic

Alignment **Compensator**

➤ Features

- Compact alignment compensater for plane-parallel compensation of position errors
- Allows compensation in the X and Y level within a rang up to +/- 4 mm stroke
- Centring via an integrated centring mechanism with up to 250 N centring force
- Eccentric clamping with up to 200 N force

Functional diagram



Terms

| | |
|-------------------------|---|
| Centering force: | operating force generated by the pneumatic piston for centring of the balancing plate |
| Handling weight: | recommended weight with central extension and 6 bar operating pressure |
| Repeatability: | dispersion of stop position at 50/100 consecutive swivel cycles |
| Cycle: | distance covered by the piston in one open and close movement |
| Maintenance: | <p>maintenance free up to 10 Mio. cycles (please see the owner's manual for conditions, download from www.sommer-automatic.com)</p> <ul style="list-style-type: none"> • long maintenance intervals keep costs down • long durability |

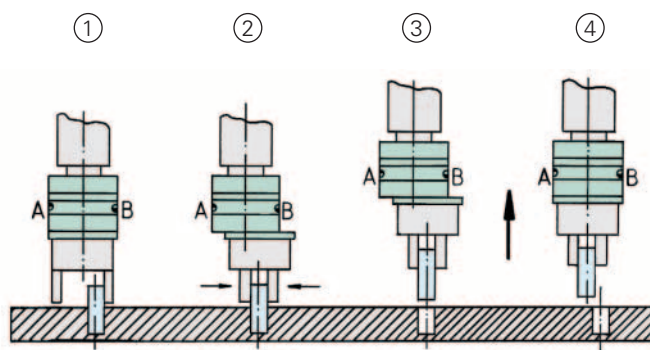
Model

| Order no. | Diviation horizontal | Centring force | Recommended handling weight |
|-----------|----------------------|----------------|-----------------------------|
| FG79 | +/- 2 mm | 50 N | 10 kg |
| FG100 | +/- 4 mm | 250 N | 20 kg |

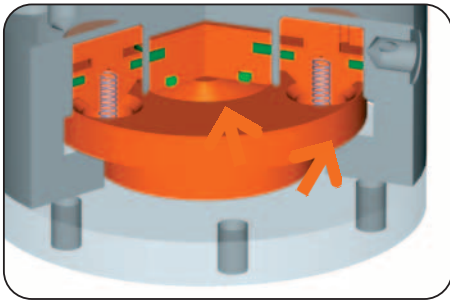
Function

Air connection A centres the connecting plate in the middle.
Connection B stops the respective position of the connecting plate.

- ① The robot with alignment compensator and gripper travels from above over the component to be extracted. A+B is pressure free.
- ② The gripper jaws close - the gripper axle moves plane-parallel until the gripper is central to the component. This position is locked by compressed air in B. The component can be safely extracted in the Z direction, without tilting.
- ③ The robot travels back along the Z axis and extracts the component from the device. There is now a choice of whether to maintain this outside central position or to recenter in the robot axis - depending on whether the component or robot is inaccurate.
- ④ We decide on centring in the robot axis and apply air in connection A whilst B is switched pressure free. This elegant solution protects your robot, equipment and components as no transverse forces occur.



Alignment **Compensator**



Drive

Centring

- Three single effect pneumatic cylinders with cone pistons at 120° spacing

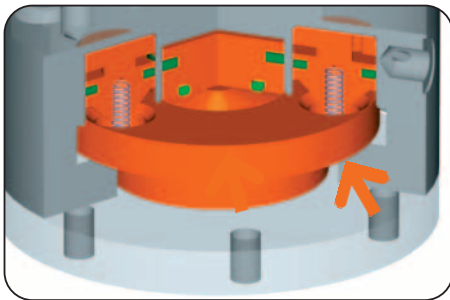
Eccentric clamping

- Single effect pneumatic cylinder with friction disc



Compensation

- Force-free compensation for position inaccuracies
- Up to +/- 4 mm compensation stroke in the X and Y level



Force transfer

Centring

- Direct and low loss via three pistons with cones

Eccentric clamping

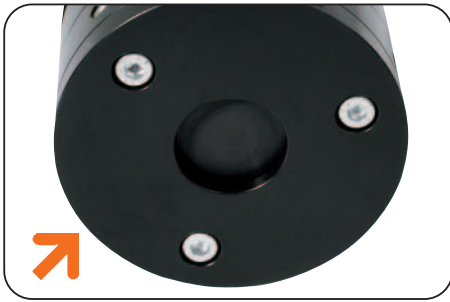
- Direct and low loss via pistons and friction disc



Machine connection

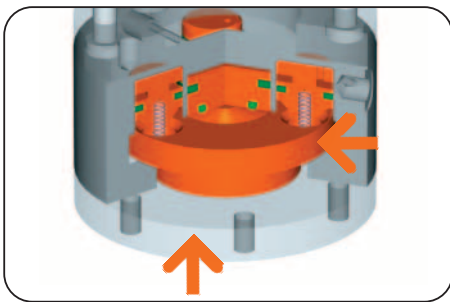
Fixing and positioning options

- Machine and tool side with removable adapter plate (see owner's manual)
- Defined centre by means of centring disc



Weight optimised

- Robust, lightweight housing
- Hard, coated aluminium alloy



Function parts

- in nitrated steel
- High wear resistance



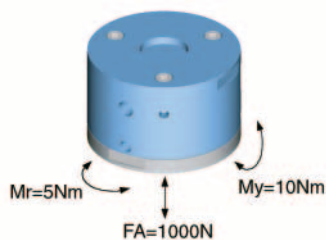
Energy feed

- Separate energy connection for the „centring“ and eccentric clamping“ functions

Alignment **Compensator**

Forces and Moments

Max. Forces and Moments see chart technical data



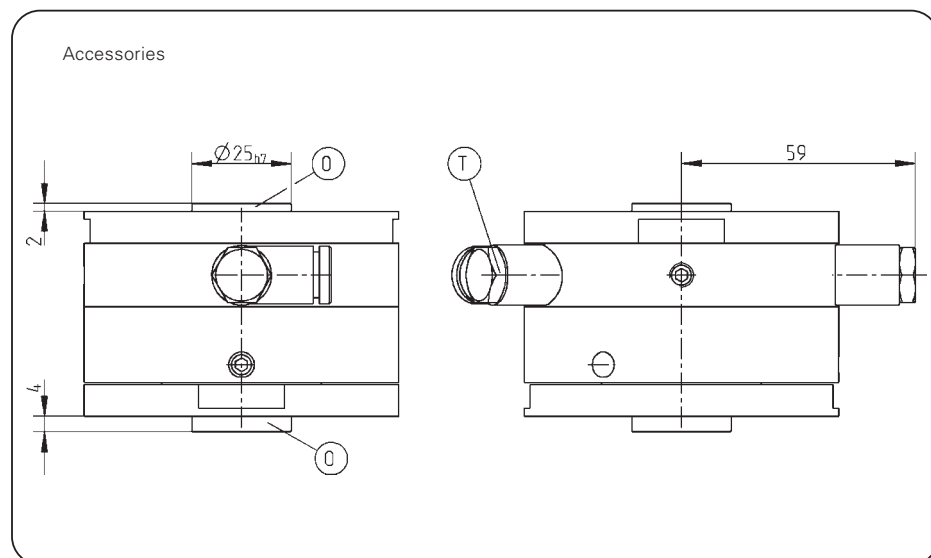
Accessory list



Pneumatic fittings
Order no. WV1/8x6



Centring disc
Order no. ZE25H7x6



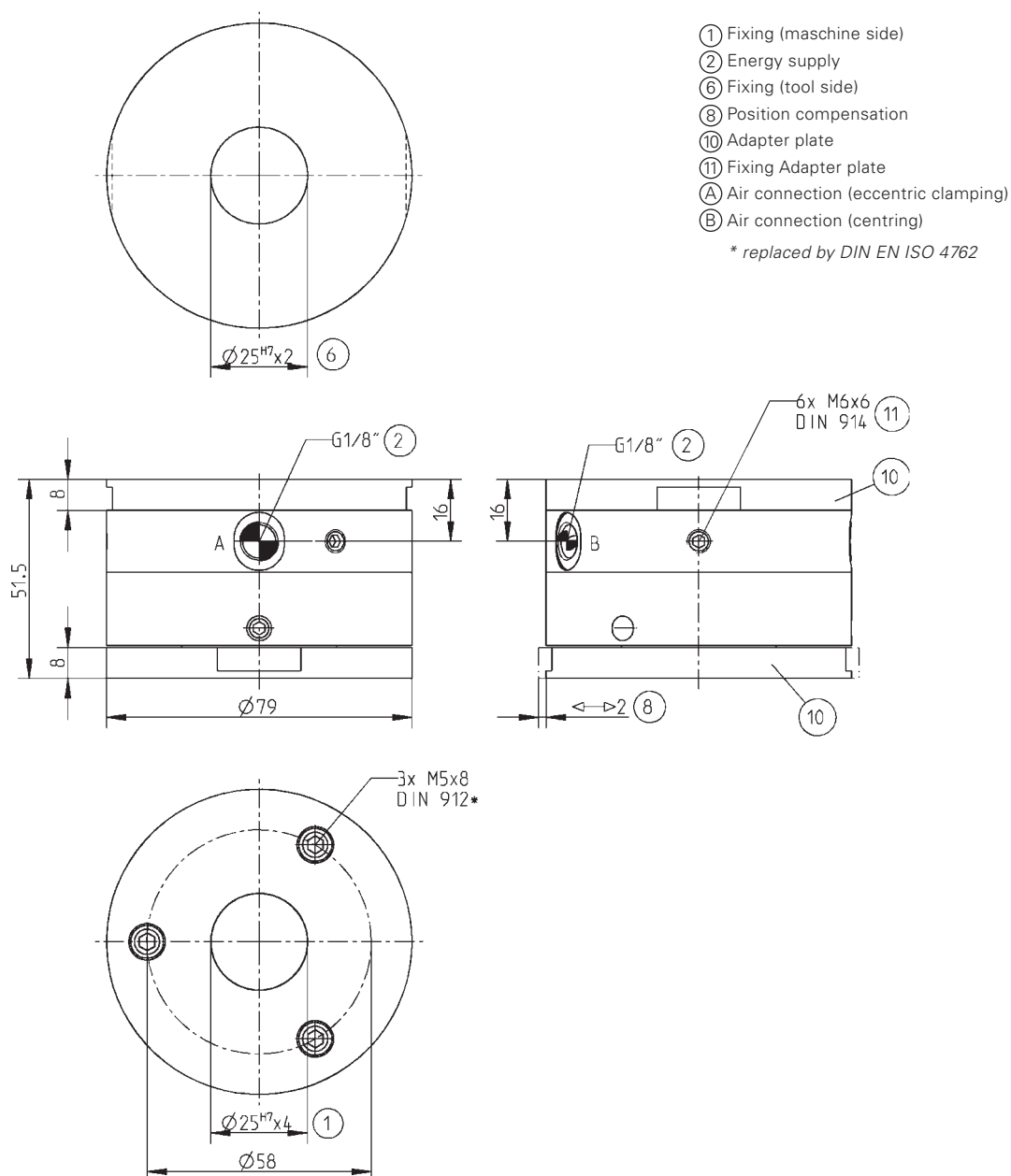
Subject to change without prior notice

| | |
|---------------------------------------|-------------|
| Order no.: | FG79 |
| Recommended handling weight [kg]*: | 10 |
| Horizontal deviation +/- [mm]: | 2 |
| Rotation angle max. [°]*: | 12 |
| Retention force centred [N]: | 50 |
| Retention force decentred [N]: | 120 |
| Repeatability +/- [mm]: | 0,02 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [g]: | 900 |

All data measured at 6 bar

* at central mounting

FG79



Subject to change without prior notice

Alignment **Compensator**

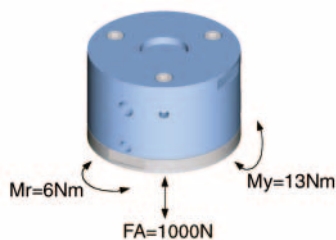
Forces and Moments

Max. Forces and Moments see chart technical data



Ø 100 mm

Picture shows FG79

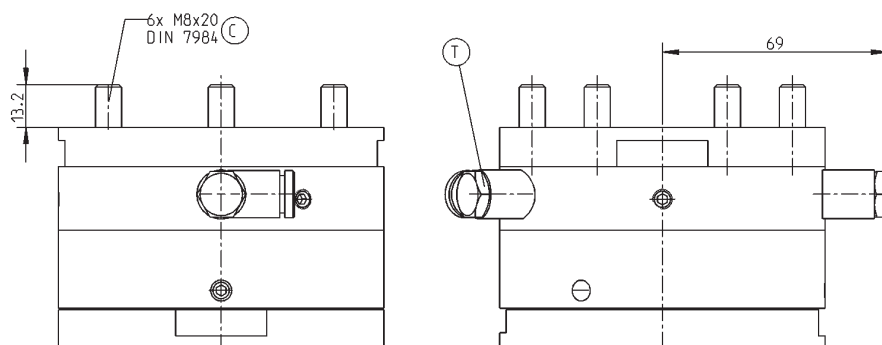


Accessory list



Pneumatic fittings
Order no. WV1/8x6

Accessories



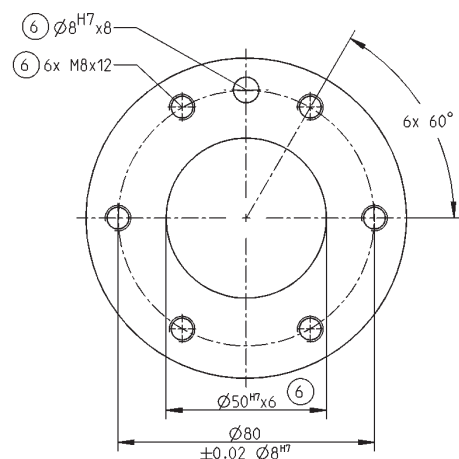
Subject to change without prior notice

| Order no.: | FG100 |
|---------------------------------------|-------|
| Recommended handling weight [kg]*: | 20 |
| Horizontal deviation +/- [mm]: | 4 |
| Rotation angle max. [°]*: | 9 |
| Retention force centred [N]: | 250 |
| Retention force decentred [N]: | 200 |
| Repeatability +/- [mm]: | 0,02 |
| Min./max. operating pressure [bar]: | 4/8 |
| Min./max. operating temperature [°C]: | 5/80 |
| Weight [kg]: | 1,7 |

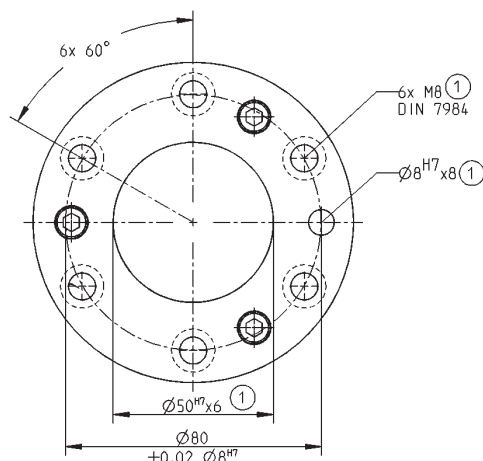
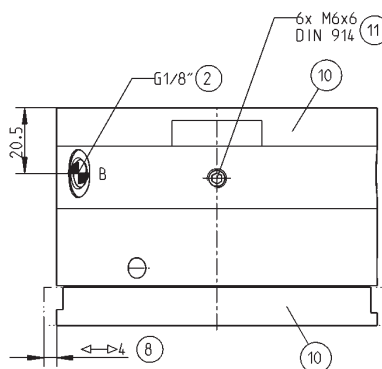
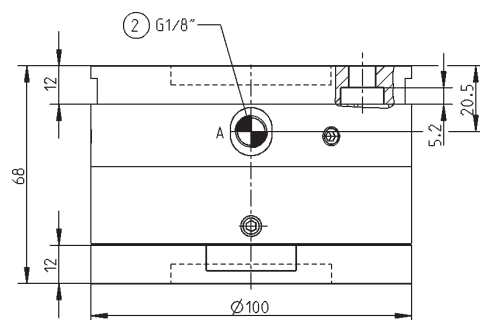
All data measured at 6 bar

* a montaggio centrato

FG100



- ① Fixing (maschine side)
- ② Energy supply
- ⑥ Fixing (tool side)
- ⑧ Position compensation
- ⑩ Adapter plate
- ⑪ Fixing Adapter plate
- Ⓐ Air connection (eccentric clamping)
- Ⓑ Air connection (centring)



Subject to change without prior notice



| | |
|---|----|
| ➤ Grippers <i>pneumatic</i> | 01 |
| ➤ Grippers <i>electrical</i> | 02 |
| ➤ Grippers <i>hydraulic</i> | 03 |
| ➤ Grippers <i>Special</i> | 04 |
| ➤ Grip & Rotate Modules <i>pneumatic</i> | 05 |
| ➤ Separators | 06 |
| ➤ Swivel Units <i>pneumatic</i> | 07 |
| ➤ Swivel Units <i>electrical</i> | 08 |
| ➤ Swivel Units <i>hydraulic</i> | 09 |
| ➤ Rotation Jaws <i>pneumatic</i> | 10 |
| ➤ Axial Compensation Modules | 11 |
| ➤ Tool Changers | 12 |
| ➤ Robotics Accessories | 13 |
| ➤ Linear Cylinders | 14 |
| ➤ Shock Absorber | 15 |
| ➤ Air Vane Motors | 16 |
| ➤ Rotary Cylinders | 17 |
| ➤ Vacuum Components | 18 |
| ➤ Accessorios | 19 |