



Superior Clamping and Gripping



## Product Information

Quick change system SWS

## Modular. Robust. Flexible.

### Quick-change system SWS

Pneumatic tool changing system with patented locking system

#### Field of application

Can be used wherever short changeover times between a handling device and a tool (pallet, gripper)

#### Advantages – Your benefits

**Complete series of 14 sizes** for optimal size selection and a broad application range

**Patented fail-safe locking mechanism** for secure connection between the quick-change master and adapter

**Manual emergency unlocking possible** no counter-forces from springs

**All functional components made from hardened steel** for high mechanical resilience of the changing system

**Wide range of electric, pneumatic, and fluid modules** for universal energy transmission possibilities

**Integrated pneumatic feed-through** for a safe power supply of the handling modules and tools

**Possibility of transmission of fluid systems** with self-sealing couplings possible

**Adapter side coding** via plug connector possible

**Suitable storage racks** for all sizes to ensure the optimum adaption to each application

**ISO mounting pattern** for easy assembly to most types of robots without needing additional adapter plates



Sizes  
Quantity: 15



Handling weight  
1.4 .. 300 kg



Moment load Mx  
2.8 .. 7170 Nm



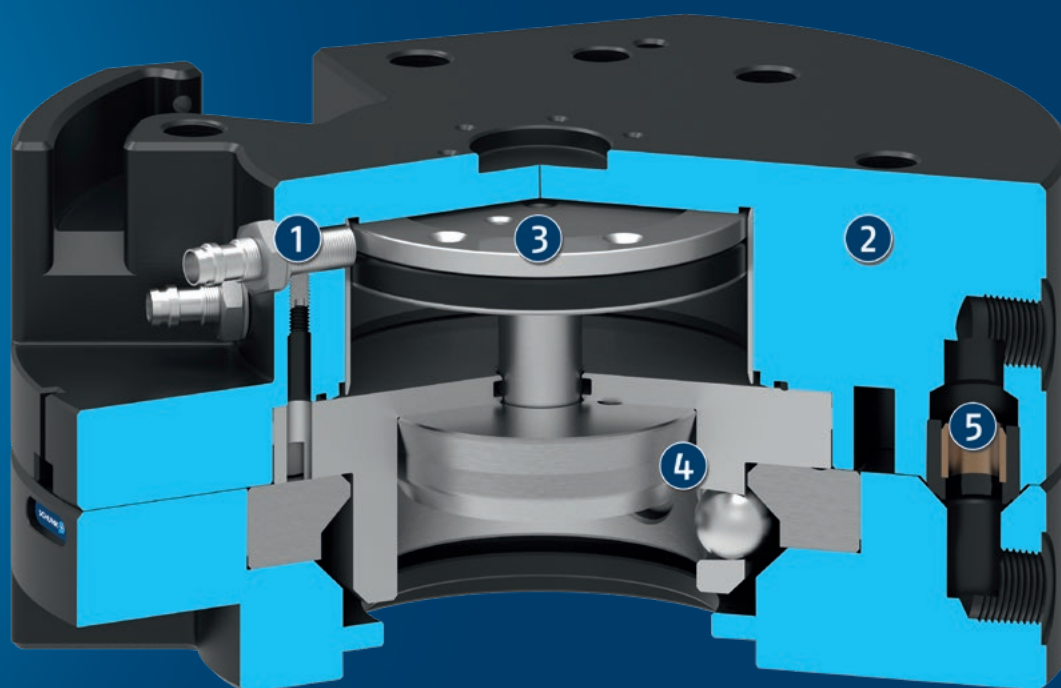
Moment load Mz  
3.45 .. 3800 Nm

## Functional description

Automatic exchange of the end effector (e.g. gripper, pallets, vacuum gripping systems, pneumatically or electrically driven tools, welding guns, etc.) increases the flexibility of your robot.

The quick-change system (SWS) consists of a quick-change master (SWK) and a quick-change adapter (SWA). The SWK

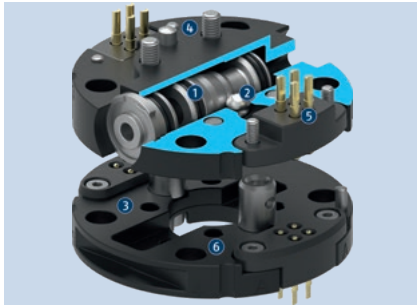
is mounted onto the robot, and couples the SWA mounted onto your tool. A pneumatically driven locking piston, with its patented design, ensures that the connection is secure. After coupling, pneumatic and electric feed-throughs automatically supply your robot tool.



- ① **Sensor monitoring of the locking device**  
optional, for process-reliable monitoring of the locking condition
- ② **Housing**  
is weight-optimized due to the use of high-strength aluminum alloy
- ③ **Drive**  
pneumatic, efficient, and easy to handle
- ④ **Locking mechanism**  
load-free locking and unlocking, fail-safe in locked condition
- ⑤ **Air feed-through**  
without interfering contours due to the integration into the housing. Also suitable for vacuum.

## Detailed functional description

### Sectional diagram SWS-001



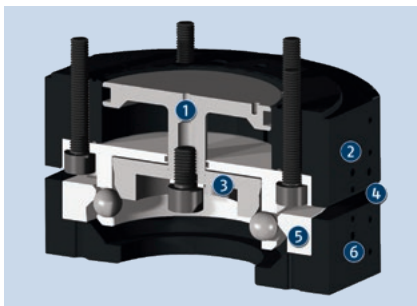
- ① Drive pneumatic, efficient, and easy to handle
- ② Locking mechanism load-free locking and unlocking, fail-safe in locked condition
- ③ Housing is weight-optimized due to the use of high-strength aluminum alloy
- ④ Centering and mounting possibilities by using a standardized ISO 9409 interface for robots
- ⑤ Electric feed-through no interfering contour, as integrated in the housing
- ⑥ Air feed-through without interfering contours due to the integration into the housing. Also suitable for vacuum.

### Quick-change system in unlocked position



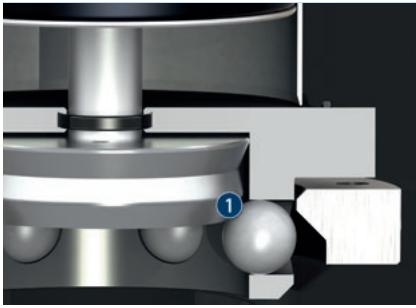
- ① Adapter plate
- ② Quick-change master SWK
- ③ Electrical module, robot-side
- ④ Locking mechanism
- ⑤ Locking ring
- ⑥ Quick-change adapter SWA
- ⑦ Electrical module, tool-side

### Section view in ready-to-lock position



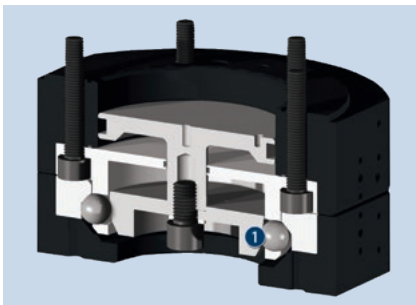
- ① Piston
- ② Quick-change master SWK
- ③ Locking piston
- ④ No-Touch-Locking™
- ⑤ Locking ring
- ⑥ Quick-change adapter SWA

### Detail view of the locking ball position in ready-to-lock position



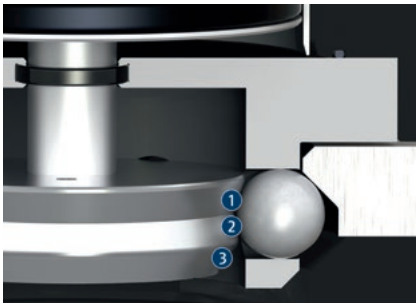
- ① Hardened locking ball is on the 1st taper of the cam. The 1st taper allow head and tool to be separate while locking.

### Section view of the quick-change system in locked position



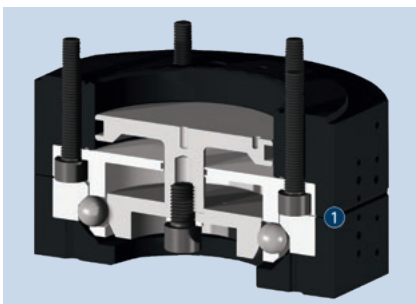
- ① When the piston is actuated, the locking balls are pushed under the hardened steel ring and the adapter is pulled onto the head.

### Detail view of the locking ball in locked position



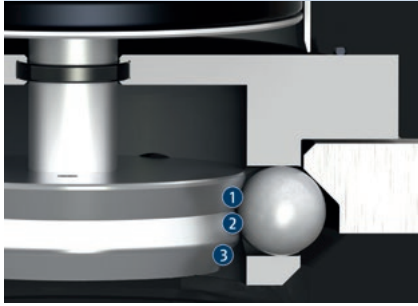
- ① Hardened steel balls on the 2nd taper of the cam create extremely high locking forces.
- ② Fail-safe reverse taper
- ③ 1st taper of the cam

### Section view of the quick-change system in fail-safe position



- ① The master and the adapter can only be separated from one another in the self-locking status if the piston is pneumatically actuated with the unlock air pressure.

### Detail view of locking ball while in fail-safe position



❶ In the case of pressure loss, the locking piston is held in place by the cylindrical part of the locking piston. The friction from the piston seal prevents the piston from moving from its own weight or vibrations. The head and adapter can only be separated by pneumatic actuation of the piston.

❷ Fail-safe reverse taper

❸ 1st taper of the cam



## General notes about the series

**Actuation:** pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

**Operating principle:** locking balls actuated by pistons for locking

**Media transmission:** variable via attachment feed-through modules, depending on the unit size

**Housing:** The housing consists of high-strength, hard-coated aluminum alloy. The functional components are made of hardened steel.

**Scope of delivery:** Operating and maintenance instruction, manufacturer's declaration

**Warranty:** 24 months

**Service life characteristics:** on request

**Harsh environmental conditions:** Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

**Handling weight:** is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

## Application example

Insertion tool for assembly of small to medium-sized workpieces. The tool can be used in both clean and dirty environments. Due to its quick-change system, other tools can alternately be fixed to the robot flange.

- 1 Quick-change system SWS
- 2 Electric feed-through
- 3 Tolerance compensation unit TCU-Z
- 4 3-finger centric gripper PZN-plus





## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Compensation unit



Anti-collision and overload protection sensor



Rotary feed-through



Universal gripper



Inductive proximity switches



Electronic module



Storage rack

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

## Options and special information

**No-Touch-Locking™:** Locking without touching. Ensures that the SWS is securely locked even when the SWK and SWA do not touch.

**Patented fail-safe locking mechanism:** A large piston diameter and an outside clamping locking increase the permissible moment capacity. Steel parts made of low corrosion Rc 58.

## Selection of a quick-change system SWS

### 1. Determining the size

**Quick Method:**

When low or medium forces and moments act upon the SCHUNK quick-change system, you should choose a quick-change system with a payload comparable to that of your robot. If high moments and forces act upon the SCHUNK quick-change system, please use the following method, which is more precise.

**More precise Method:**

Forces and moments are critical factors in choosing a suitable quick-change system. Proceed as follows to estimate the most unfavorable moment:

- Calculate the approximate center of gravity (COG) of the heaviest end-effector that will be used. Calculate the distance (D) from the COG to the bottom of the quick-change adapter.
- Calculate the weight (W) of the heaviest end-effector.
- Multiply W and D to find an approximate static moment (M) (or a moment based on 1 g of acceleration).
- Choose a quick-change system with a high moment load equal to or greater than M.

Due to their potentially high accelerations, robots can produce moments that are two or three times as high as M.

### 2. Pneumatic and electrical systems

Determine the number of pneumatic connections and electrical contacts required. Larger quick-change systems feature a higher number of pneumatic connections and electrical contacts.

### 3. Temperature and chemicals

SCHUNK quick-change systems use nitrile gaskets for the feed-through of pneumatics. O-rings seal the pneumatic locking mechanism. These O-rings are resistant to most chemical influences and also withstand temperatures ranging from  $-25$  to  $+65$  °C. Please contact us if you should need information on temperatures or chemical influences in particular environments.

### 4. Precision applications

Always comply with the specifications if you work with applications that require high repeat accuracy.

**Please note:**

A quick-change system has an influence on force and moment, payload, size, and repeat accuracy of the robot.

## SWS Sizes

Description	Recommended handling weight [kg]	Max. moment [Nm] $M_x$ and $M_y$	Max. moment [Nm] $M_z$	Pneumatic feed-through	Air connections locked and unlocked
SWS 001	1.4	2.8	3.45	4x M5	M5
SWS 007	16	61	38	5x M5	M5
SWS 011	16	61	38	6x M5	M5
SWS 020	25	169.5	105	12x M5	M5
SWS 021	25	169.5	105	8x G1/8"	M5
SWS 022	25	169.5	230	6x G3/8"	M5
SWS 029	35	169.5	230	2x G1/8" ; 4x M5	M5
SWS 040Q	50	471	648	8x G1/8"	G1/8"
SWS 041	50	471	648	6x G3/8"; 4x G1/8"	G1/8"
SWS 046	50	678	450	-	G1/8"
SWS 060	75	591	326	8x G1/8"	G1/8"
SWS 071	79	1185	378	8x G1/4"	G1/8"
SWS 076	100	1626	2103	5x G3/8"	G1/8"
SWS 110	150	2352	2352	8x G3/8"	G1/8"
SWS 160	300	7170	3800	5x G3/8"; 4xG1/2"	G1/8"
SWS-L 210	300	7600	4060	-	-
SWS-L 310	510	9900	9600	-	-
SWS-L 510	700	10900	10500	-	-
SWS-L 1210	1350	13500	16200	-	-

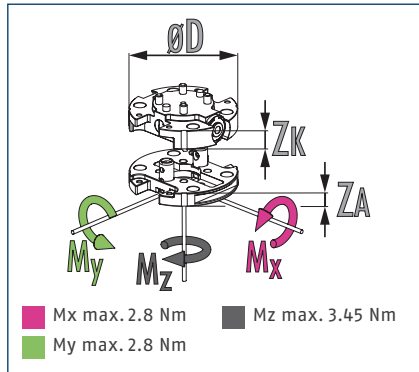
## Ordering example SWS

	SW	K	-	110	-	R19	-	G19	-	SM
<b>Description</b>										
SW										
<b>Page</b>										
K = head (robot side)										
A = Adapter (tool side)										
<b>Size</b>										
<b>Optional module</b>										
Rxx, Sxx, Gxx, Kxx = electric module										
Pxx = pneumatic module (anodized aluminum housing, not suitable for liquids)										
Vxx = Vacuum module										
Fxx = Fluid module (stainless steel, self-sealing)										
000 = Unused option										
<b>Proximity switch monitoring</b>										
SG = Inductive proximity switch (SWK-040Q/076)										
SM = inductive proximity switch (SWK-007/022/029/110/160)										
SQ = Inductive proximity switch (SWK-011H/020H/021H)										
SIP-IN = monitoring prepared, inductive proximity switch included (SWK-011/020/021/027/041/046/060/071)										

More versions on request



## Dimensions and maximum loads



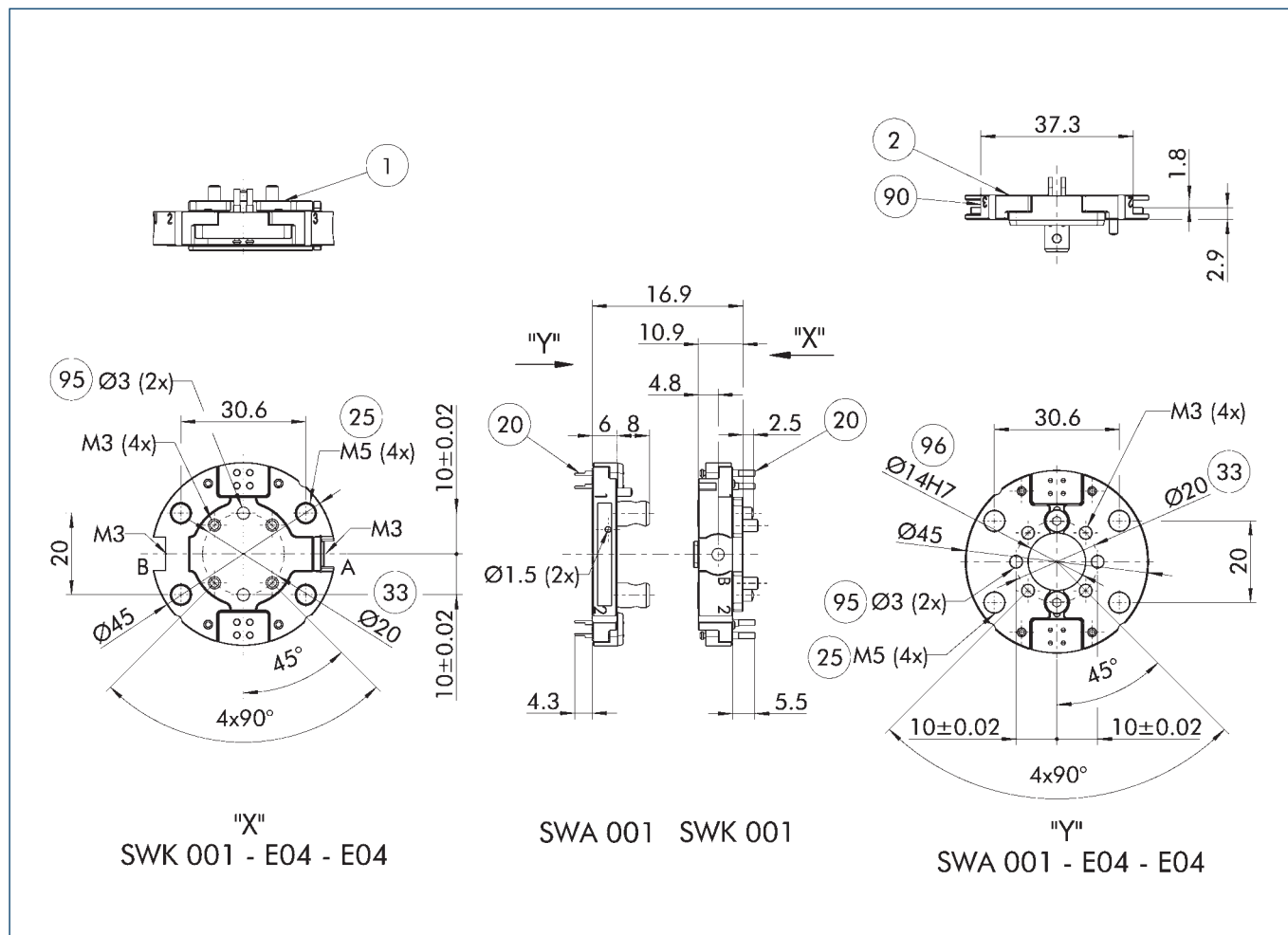
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-001-000-000	SWA-001-000-000	SWK-001-E04-E04	SWA-001-E04-E04
		Quick-change master	Quick-change adapter	Quick-change master	Quick-change adapter
ID		0302290	0302291	0302292	0302293
Recommended handling weight	[kg]	1.4	1.4	1.4	1.4
Locking force	[N]	170	170	170	170
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01
Weight	[kg]	0.03	0.02	0.08	0.04
Max. distance when locking	[mm]	1	1	1	1
Air connection thread pneumatic feed-through		4x M5	4x M5	4x M5	4x M5
Lock/unlock main connection		M3		M3	
Number of electrical feed-throughs				8	8
Voltage	[V]			50	50
Max. current	[A]			3	3
Max. permissible XY axis offset	[mm]	±0.3	±0.3	±0.3	±0.3
Max. permissible angular offset	[°]	±0.8	±0.8	±0.8	±0.8
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	45 x 10.9	45 x 6	45 x 10.9	45 x 6
Screw connection diagram		S1	S1	S1	S1

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view



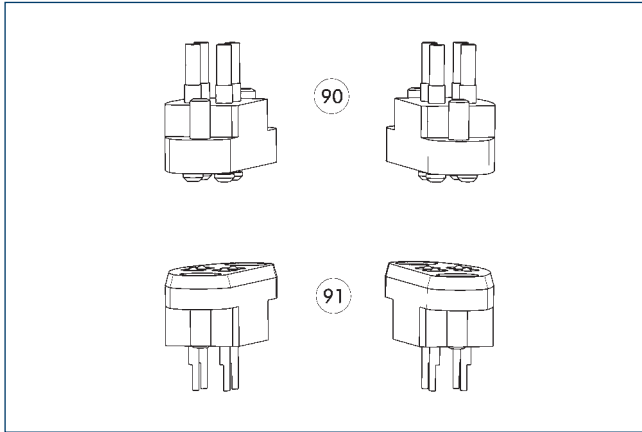
The drawing shows the basic version of the quick-change system with an electrical optional module.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑳ Connection for electric feed-through
- ㉕ Pneumatic feed-throughs
- ㉓ DIN ISO-9409 bolt circle
- ㉑ Groove for tool rack
- ㉕ Fit for centering pins
- ㉖ Fit for centering

# SWS 001

Quick change system

## Electric feed-through module



90 Robot side

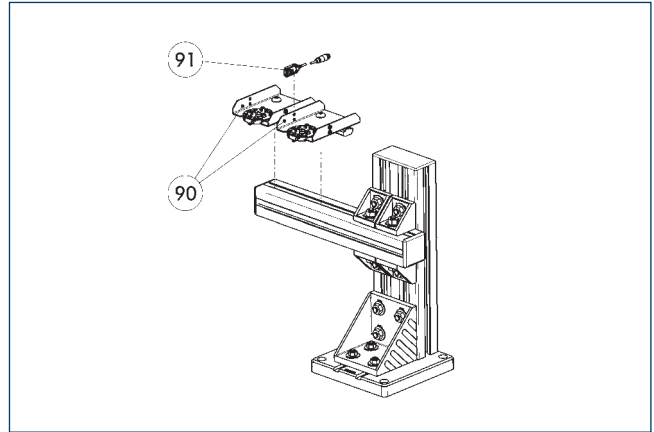
91 Tool side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for signal on the robot side		
SW0-E04-K	9960359	4
SW0-E06-K	9962997	6
Feed-through module for signal on the tool side		
SW0-E04-A	9960360	4
SW0-E06-A	9962998	6

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SW0" or visit our website.

## Modular SWM-S-001 quick-change rack



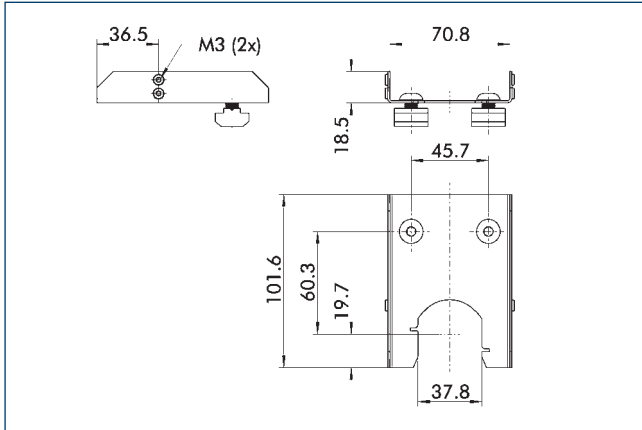
90 Storage plate

91 Sensor

The modular storage rack is designed for the specific size. The system's modular design allows you to compile your individual storage rack. This provides you with a storage rack that meets your individual requirements, taking into account the number of tools, deposition positions, and tool size. For further information please refer to the chapter "SWM storage rack"

Description	ID	
Storage plate		
SWM-TSS-MM-7869	0303276	
Sensor		
SWM-SMA-7869	0303277	

## SWS 001 Storage Plate

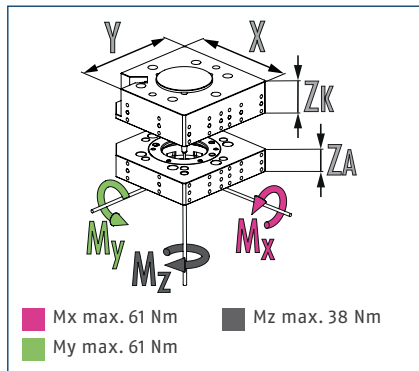


① Mounting grooves are not included in the scope of delivery.





### Dimensions and maximum loads



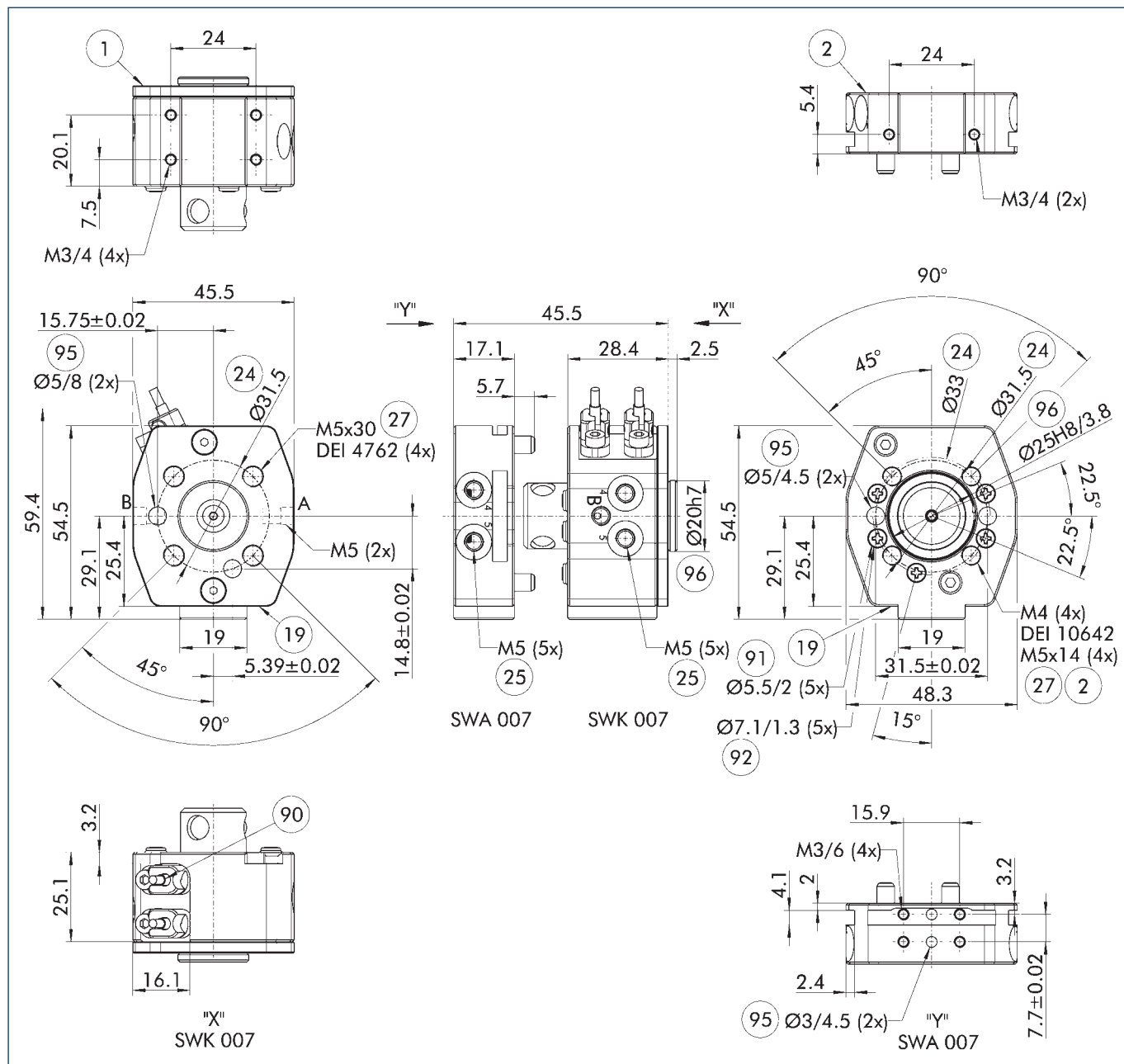
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

### Technical data

Description		SWK-007-000-000-IN03	SWA-007-000-000
		Quick-change master	Quick-change adapter
ID		1405836	1365513
Recommended handling weight	[kg]	16	16
Piston stroke monitoring		integrated	
Locking force	[N]	1100	1100
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	0.16	0.08
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		5x M5	5x M5
Lock/unlock main connection		M5	
Max. permissible XY axis offset	[mm]	±1	±1
Max. permissible angular offset	[°]	±2	±2
Robot-side connection		ISO 9409-1-31.5-4-M5	ISO 9409-1-31.5-4-M5
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions X x Y x Z*	[mm]	54.5 x 45.5 x 28.4	54.5 x 48.3 x 17.1
Screw connection diagram		S7	S7

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view



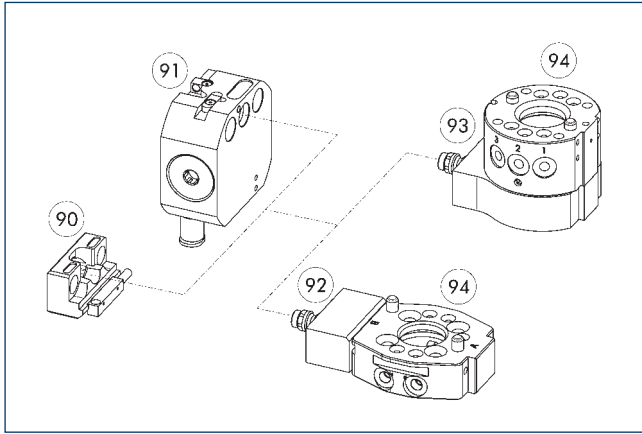
The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑱ Mounting surface for options
- ⑳ Bolt circle
- ㉑ Pneumatic feed-throughs
- ㉒ Through holes for screw connections
- ⑩ Sensor IN ...
- ① Axial air connection (supplied with locking screw)
- ② Bore hole for sealing ring (back)
- ③ Fit for centering pins
- ④ Fit for centering

# SWS 007

Quick change system

## Storage system SWM-B

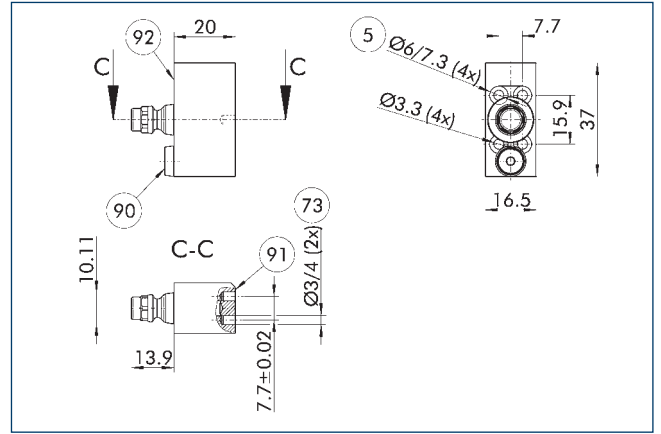


- 90 SWM-B 050
- 91 SWM-B 050-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	Suitable for
Storage system		
SWM-B 050	1459336	
SWM-B 050-V	1442568	

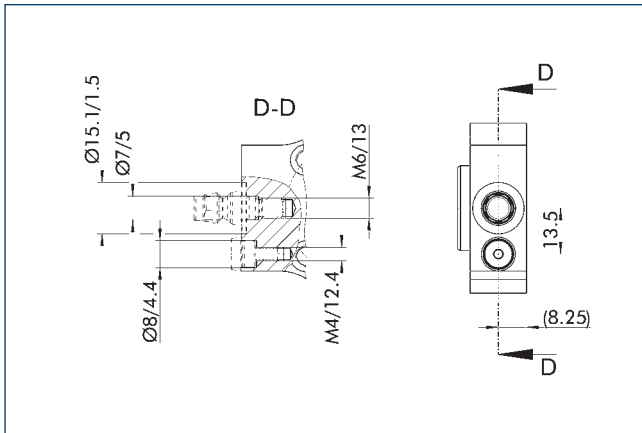
## Adapter plate SWA 007



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-007-SWM-B 050	1523812	SWA 007
A-SWA-007-SWM-B 050-V	1523842	SWA 007

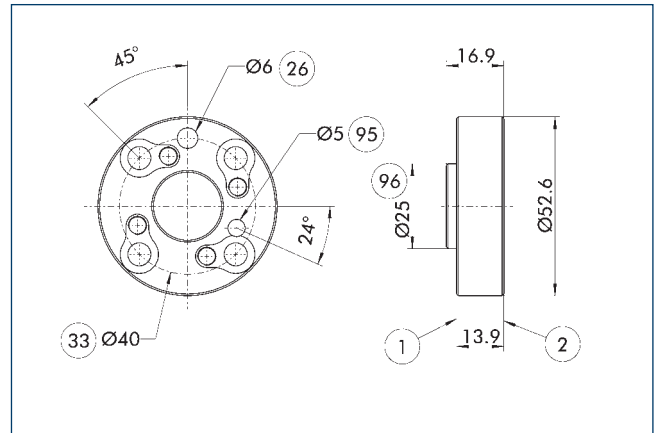
## Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-007-SWM-B 050	1523812	SWA 007
A-SWA-007-SWM-B 050-V	1523842	SWA 007

## Adapter plate ISO-A40-R

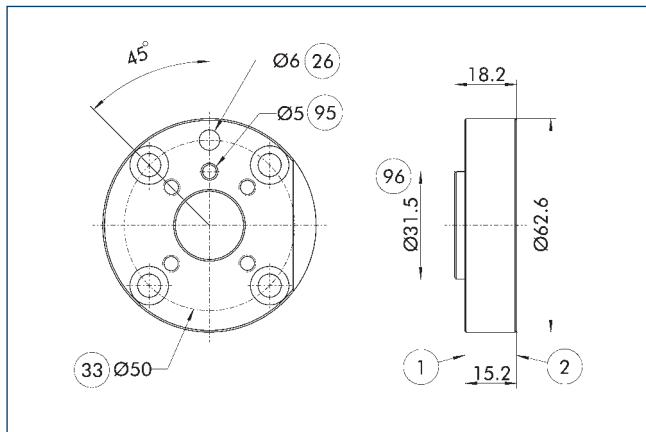


- 1 Robot-side connection
- 2 Tool-side connection
- 26 Through-hole
- 33 DIN ISO-9409 bolt circle
- 95 Fit for centering pins
- 96 Fit for centering

Robot side adapter plate

Description	ID	Suitable for
Robot side		
A-SWK-007-ISO-A40	1369388	

Adapter plate ISO-A50-R

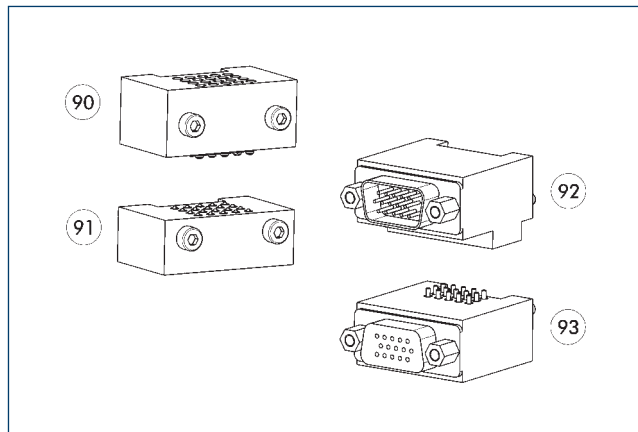


- ① Robot-side connection
- ② Tool-side connection
- ②⑥ Through-hole
- ③③ DIN ISO-9409 bolt circle
- ③⑤ Fit for centering pins
- ③⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-007-ISO-A50	1369392

Electric feed-through module



- ⑨① E..., robot-side
- ⑨② A.../B... robot-side
- ⑨① E..., tool-side
- ⑨③ A.../B... tool-side

Modules for transmission of electrical signals.

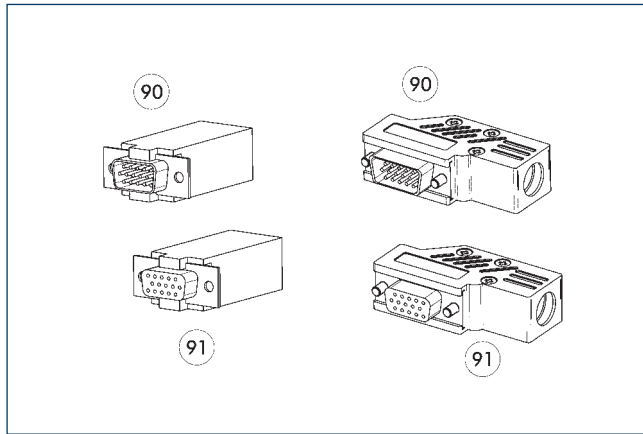
Description	ID	No. Pins
<b>Feed-through module for signal on the robot side</b>		
SWO-A15-K	9936357	15
SWO-E10-011-K	9935801	10
SWO-E20-011-K	9936525	20
SWO-EM8-011-K	9966153	8
SWO-ML12R-K	1426575	12
SWO-ML8A-K	1426624	8
<b>Feed-through module for signal on the tool side</b>		
SWO-A15-A	9936356	15
SWO-E10-011-A	9935802	10
SWO-E20-011-A	9936526	20
SWO-EM8-011-A	9966154	8
SWO-ML12R-A	1426576	12
SWO-ML6-A	1426626	6
SWO-ML8A-A	1426625	8

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

# SWS 007

Quick change system

## Cable connector



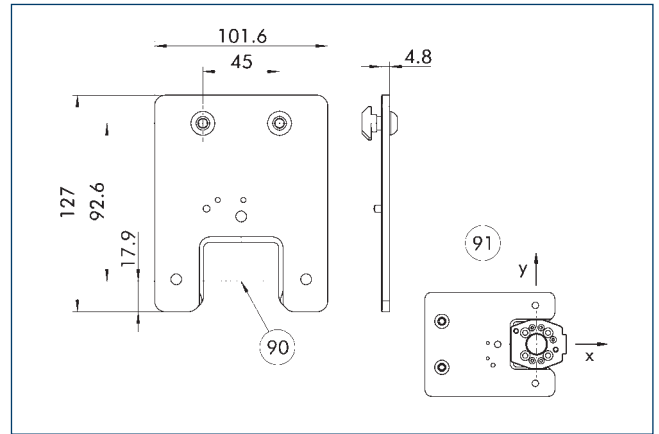
90 D-sub connecting plug

91 D-sub connector

Description	ID
Angled cable connector, robot-side	
KAS-A15-K-90	0301301
Angled cable connector, tool-side	
KAS-A15-A-90	0301302
Straight cable connector, robot-side	
KAS-A15-K-0	0301264
Straight cable connector, tool-side	
KAS-A15-A-0	0301265
Cable extension	
KV-2-SWA-08G-M8-0	0302181
KV-2-SWA-08G-M8-90	0302183
KV-5-SWK-08G-M8-0	0302180
KV-5-SWK-08G-M8-90	0302182

For more detailed information and other cable connectors, see catalog chapter "SW0" or visit our website.

## Tooling plate, horizontal



90 Center SWS 007 (reference point for load diagram)

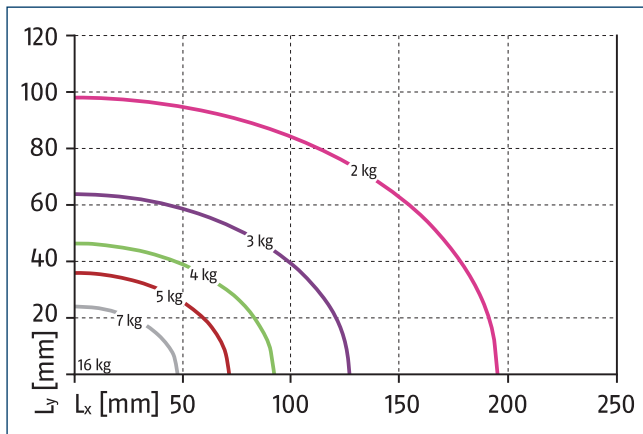
91 View center of gravity offset in x or y direction

The storage stand serves as a storage rack for the quick-change adapter with tools which are mounted by the customer himself.

Description	ID
Tooling plate, horizontal	
SWM-TSS-MMS-11345	1459976

When using the storage rack, the load diagram must be observed.

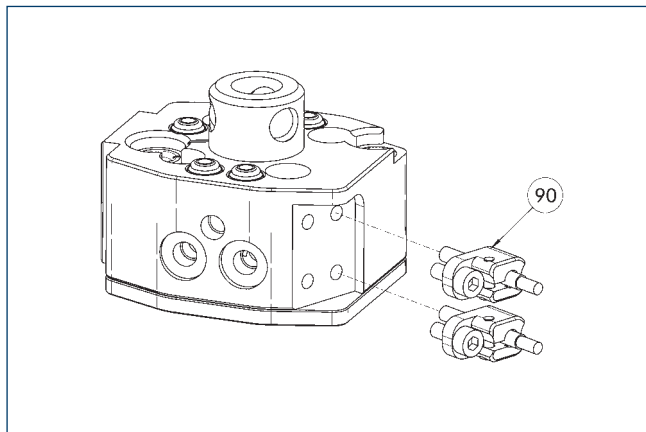
## Load diagram with storage rack



If the center of gravity of the tool is offset by more than 10 mm in the x or y direction (see storage tray drawing), the SWA will tilt after being set down in the storage module. The use of this storage tray in applications with SCARA robots or Cartesian robots is not recommended in this case.

Description	ID
Tooling plate, horizontal	
SWM-TSS-MMS-11345	1459976

### Assembly situation of the locking monitoring



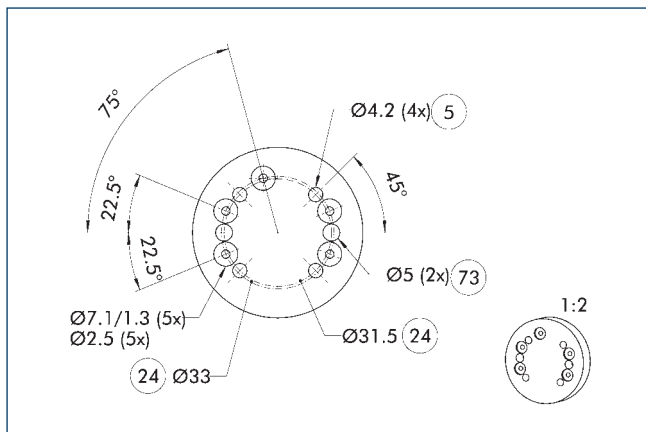
90 AS-SWK 007

The drawing shows the installation situation of the integrated piston stroke monitoring with built-in proximity switch on the quick-change master.

Description	ID
Robot side	
AS-SWK-007-SM Attachment kit including PNP sensor	1421347
AS-SWK-007-SP attachment kit including NPN sensor	1428672

- ① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

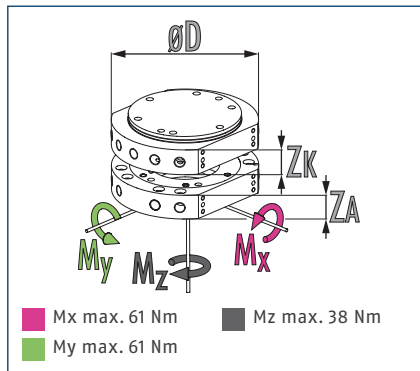
### Design of an adapter plate for using the axial air feed-through



- 5 Through hole for connection with screws  
 24 Bolt circle  
 73 Fit for centering pins

The adapter plate serves as an interface between the quick-change adapter and the tool of the customer. To ensure correct use of the axial air feed-throughs, the counterbores shown in the drawing must be taken into account when designing the adapter plate. The appropriate seals are included in the accessory kit.

## Dimensions and maximum loads



ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

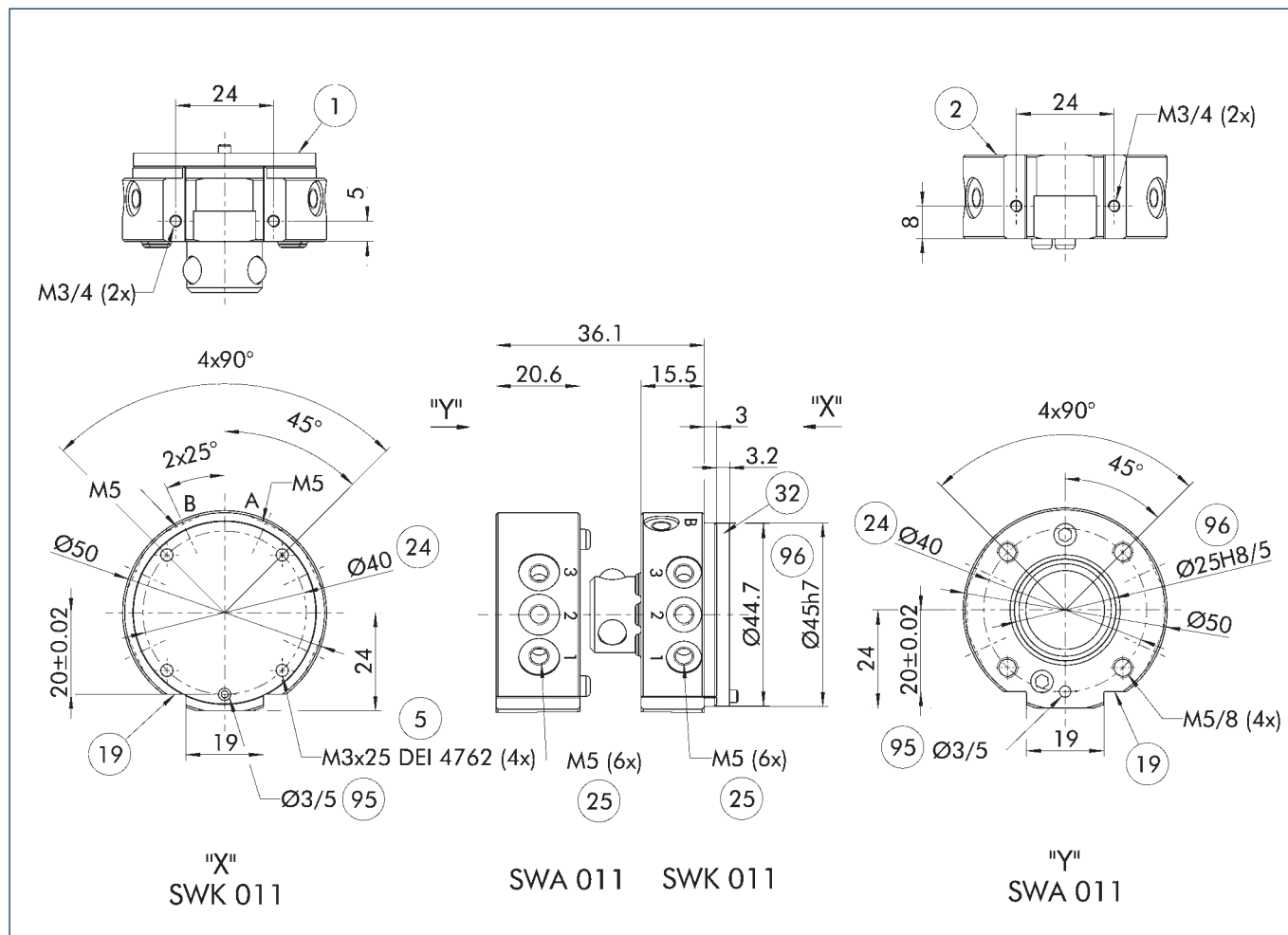
## Technical data

Description		SWK-011-000-000	SWK-011HM-000-000-SQ	SWA-011-000-000
		Quick-change master	Quick-Change master for hollow wrist robots	Quick-change adapter
ID		0302316		0302317
Recommended handling weight	[kg]	16	16	16
Piston stroke monitoring		optional	integrated	
Locking force	[N]	1100	1100	1100
Repeat accuracy	[mm]	0.015	0.015	0.015
Weight	[kg]	0.13	0.29	0.09
Max. distance when locking	[mm]	3	3	3
Air connection thread pneumatic feed-through		6x M5	6x M5	6x M5
Lock/unlock main connection		M5	M5	
Max. permissible XY axis offset	[mm]	±1	±1	±1
Max. permissible angular offset	[°]	±2	±2	±2
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	50 x 15.5	50 x 46.4	50 x 20.6
Screw connection diagram		S7	S7	S7

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.



Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

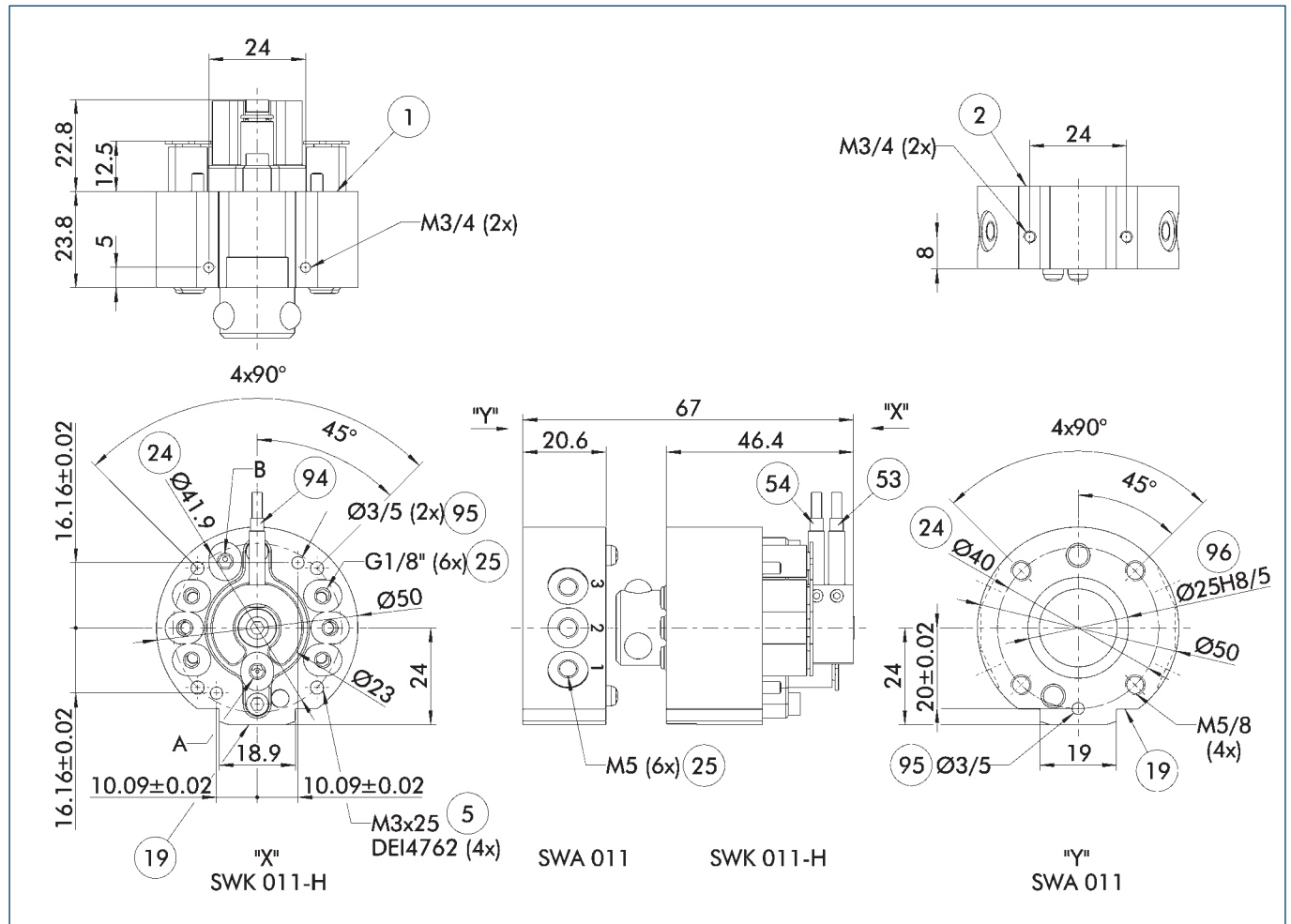
① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

# SWS 011

Quick change system

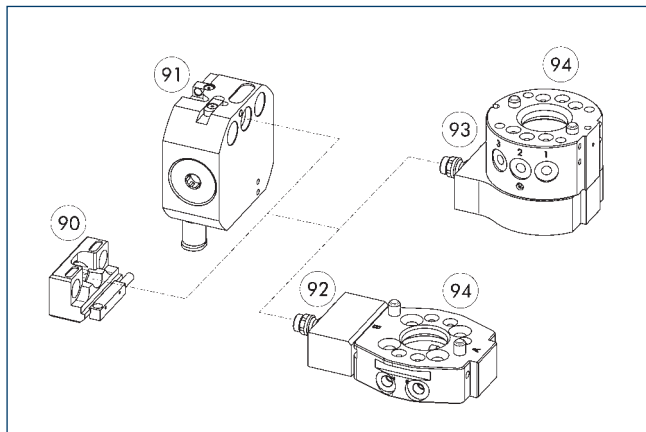
## SWK-011-H main view



Via axial air connections it is perfectly suited for robots with through bores.

- |   |                                 |
|---|---------------------------------|
| A, a Air connection locked                | 24 Bolt circle                  |
| B, b Air connection unlocked              | 25 Pneumatic feed-throughs      |
| 1 Robot-side connection                   | 53 Monitoring Position unlocked |
| 2 Tool-side connection                    | 54 Monitoring Position locked   |
| 5 Through hole for connection with screws | 94 Optional proximity switch    |
| 19 Mounting surface for options           | 95 Fit for centering pins       |
|   | 96 Fit for centering            |

Storage system SWM-B

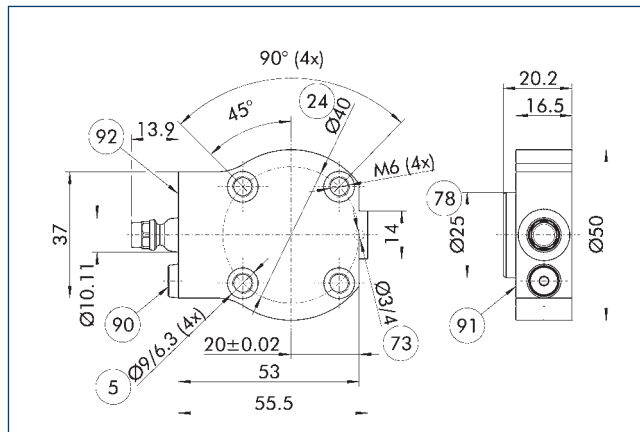


- 90 SWM-B 050
- 91 SWM-B 050-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 050	1459336	
SWM-B 050-V	1442568	

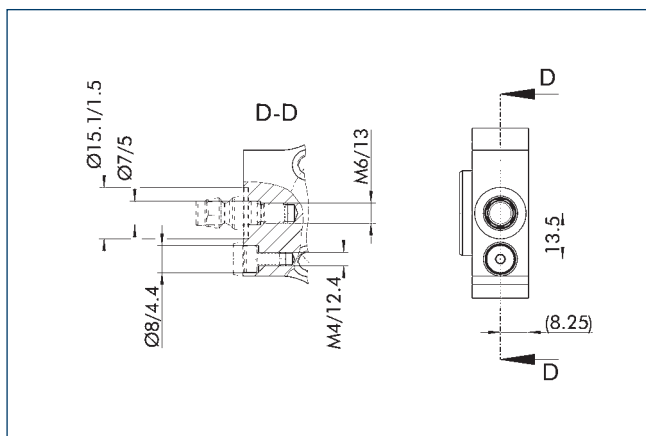
Adapter plate SWA 005/011



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-005/011-SWM-B 050	1523807	SWA 005, SWA 011
A-SWA-005/011-SWM-B 050-V	1523840	SWA 005, SWA 011

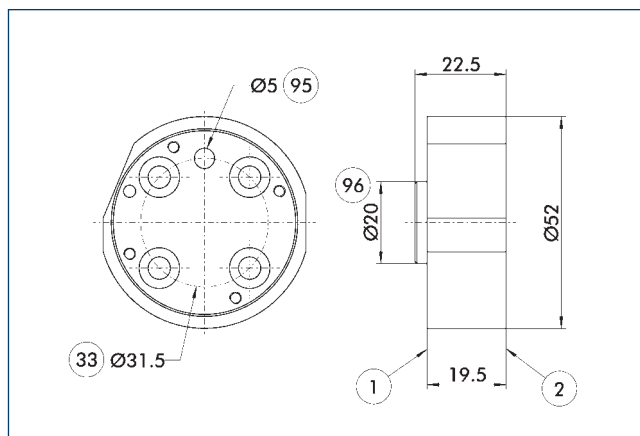
Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-005/011-SWM-B 050	1523807	SWA 005, SWA 011
A-SWA-005/011-SWM-B 050-V	1523840	SWA 005, SWA 011

Adapter plate ISO-A31.5-R



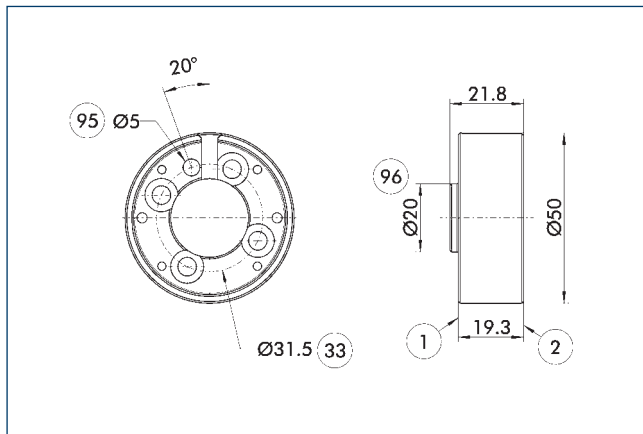
- 1 Robot-side connection
- 2 Tool-side connection
- 33 DIN ISO-9409 bolt circle
- 95 Fit for centering pins
- 96 Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-011-ISO-A31.5	0302221	

① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A31.5-SIP-R



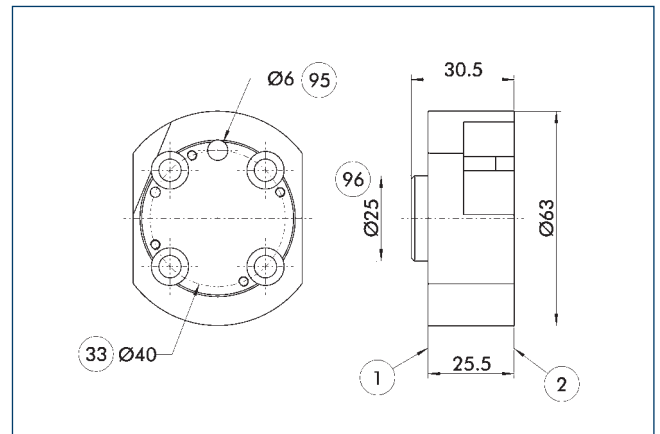
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-011-ISO-A31.5-SIP	0302226	

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A40-R



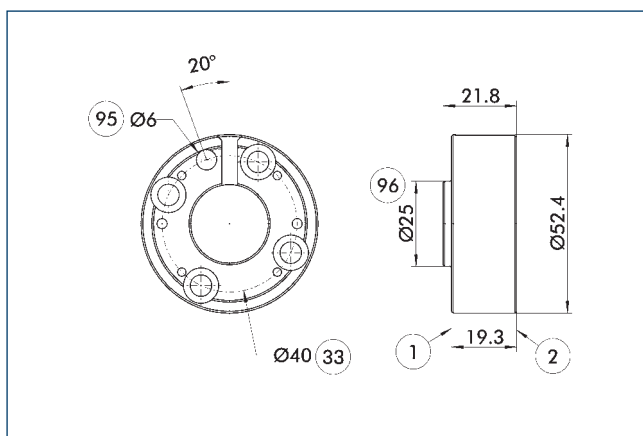
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-011-ISO-A40	0302222	

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A40-SIP-R



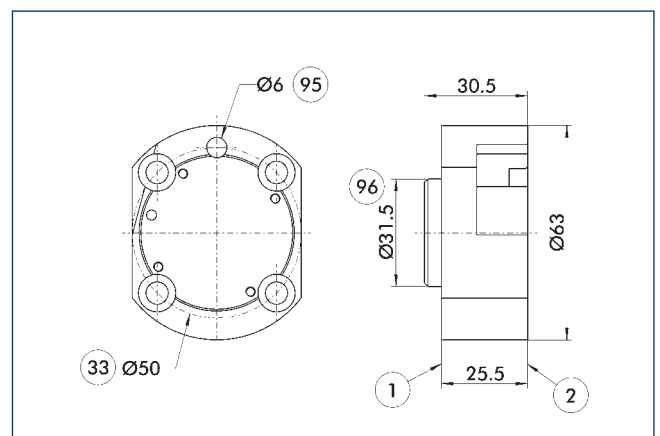
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-011-ISO-A40-SIP	0302227	

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A50-R



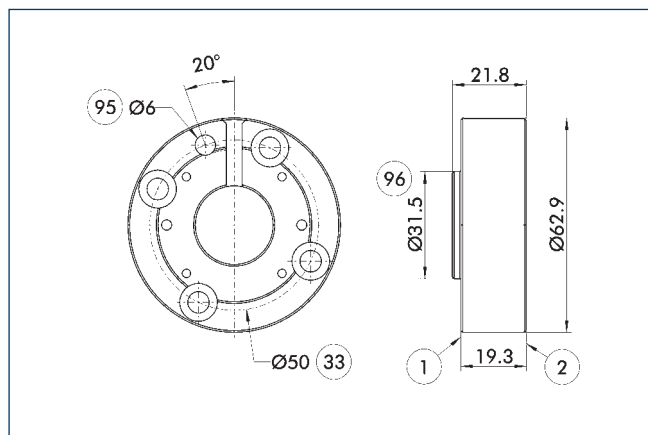
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-011-ISO-A50	0302223	

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

Adapter plate ISO-A50-SIP-R



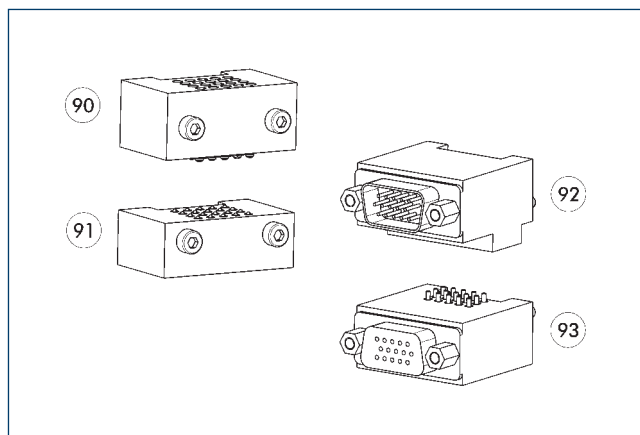
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-011-ISO-A50-SIP	0302228

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

Electric feed-through module



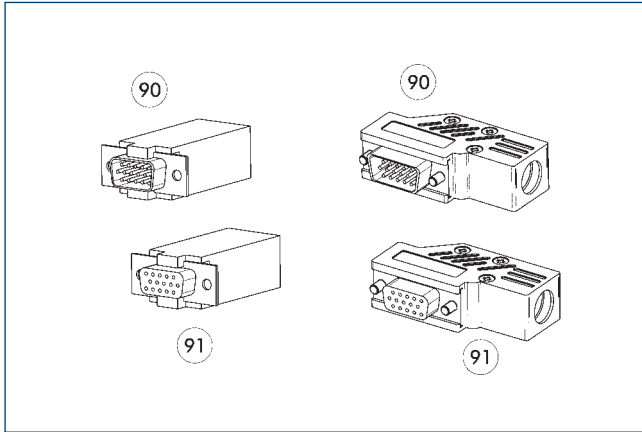
- ⑨① E..., robot-side
- ⑨② A.../B... robot-side
- ⑨③ E..., tool-side
- ⑨④ A.../B... tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for signal on the robot side		
SW0-A15-K	9936357	15
SW0-E10-011-K	9935801	10
SW0-E20-011-K	9936525	20
SW0-EM8-011-K	9966153	8
SW0-ML8A-K	1426624	8
Feed-through module for signal on the tool side		
SW0-A15-A	9936356	15
SW0-E10-011-A	9935802	10
SW0-E20-011-A	9936526	20
SW0-EM8-011-A	9966154	8
SW0-ML6-A	1426626	6
SW0-ML8A-A	1426625	8

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SW0" or visit our website.

## Cable connector



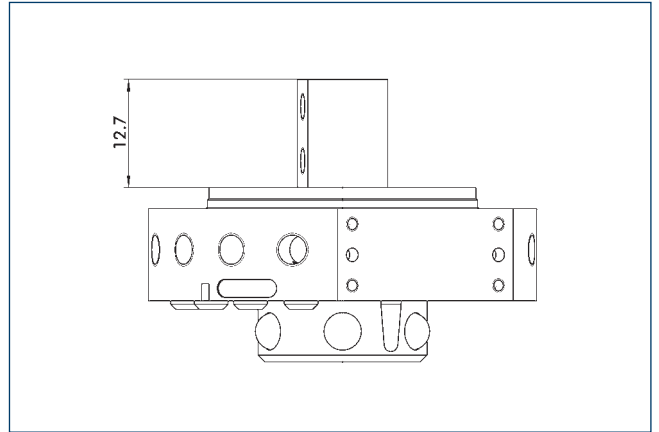
90 D-sub connecting plug

91 D-sub connector

Description	ID
Angled cable connector, robot-side	
KAS-A15-K-90	0301301
Angled cable connector, tool-side	
KAS-A15-A-90	0301302
Straight cable connector, robot-side	
KAS-A15-K-0	0301264
Straight cable connector, tool-side	
KAS-A15-A-0	0301265
Cable extension	
KV-2-SWA-08G-M8-0	0302181
KV-2-SWA-08G-M8-90	0302183
KV-5-SWK-08G-M8-0	0302180
KV-5-SWK-08G-M8-90	0302182

For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

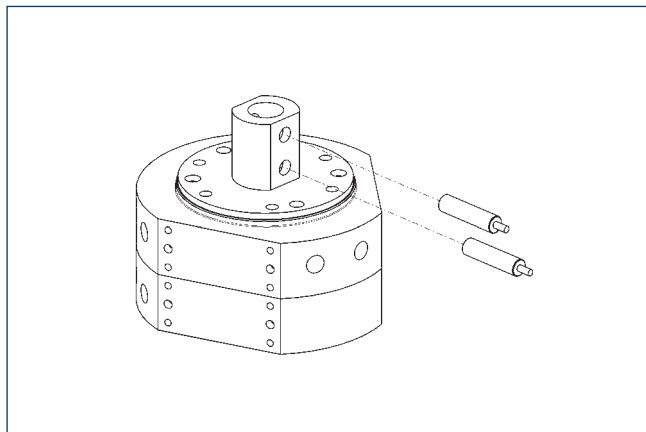
## Piston stroke control



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID
Piston stroke control	
SWK-011-SIP	0302318

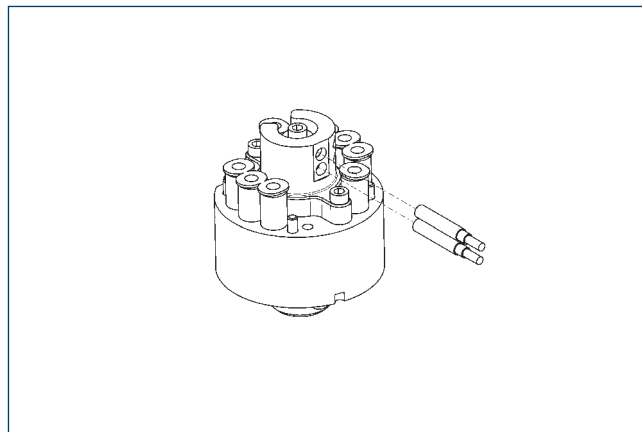
**Piston stroke control**



Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 41-S-M8-PNP	1325755	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
<b>Clip for connector/socket</b>		
CLI-M8	0301463	

① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

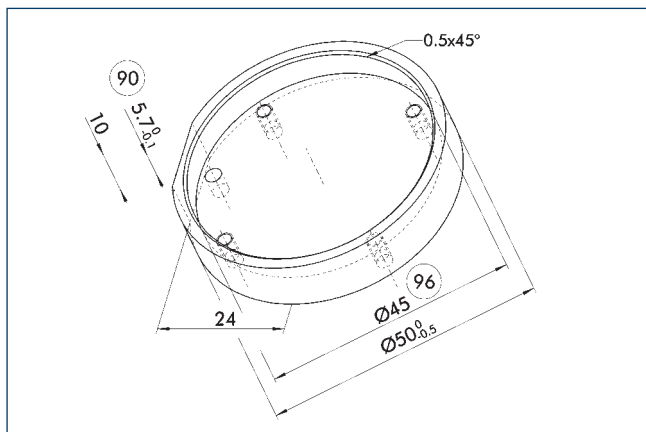
**Piston stroke monitoring for SWK-011-H**



Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 41-S-M8-PNP	1325755	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
<b>Clip for connector/socket</b>		
CLI-M8	0301463	

① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

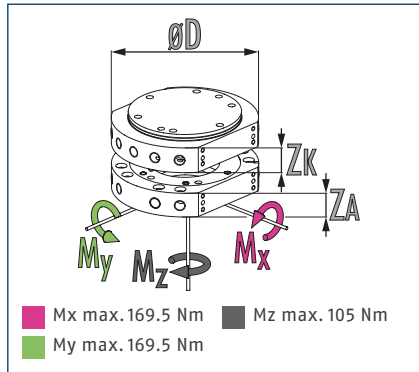
**Adapter plate design**



⑨ Recommended adapter plate      ⑨6 Fit for centering depth

Recommendation for the design of the adapter plate.

## Dimensions and maximum loads



ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

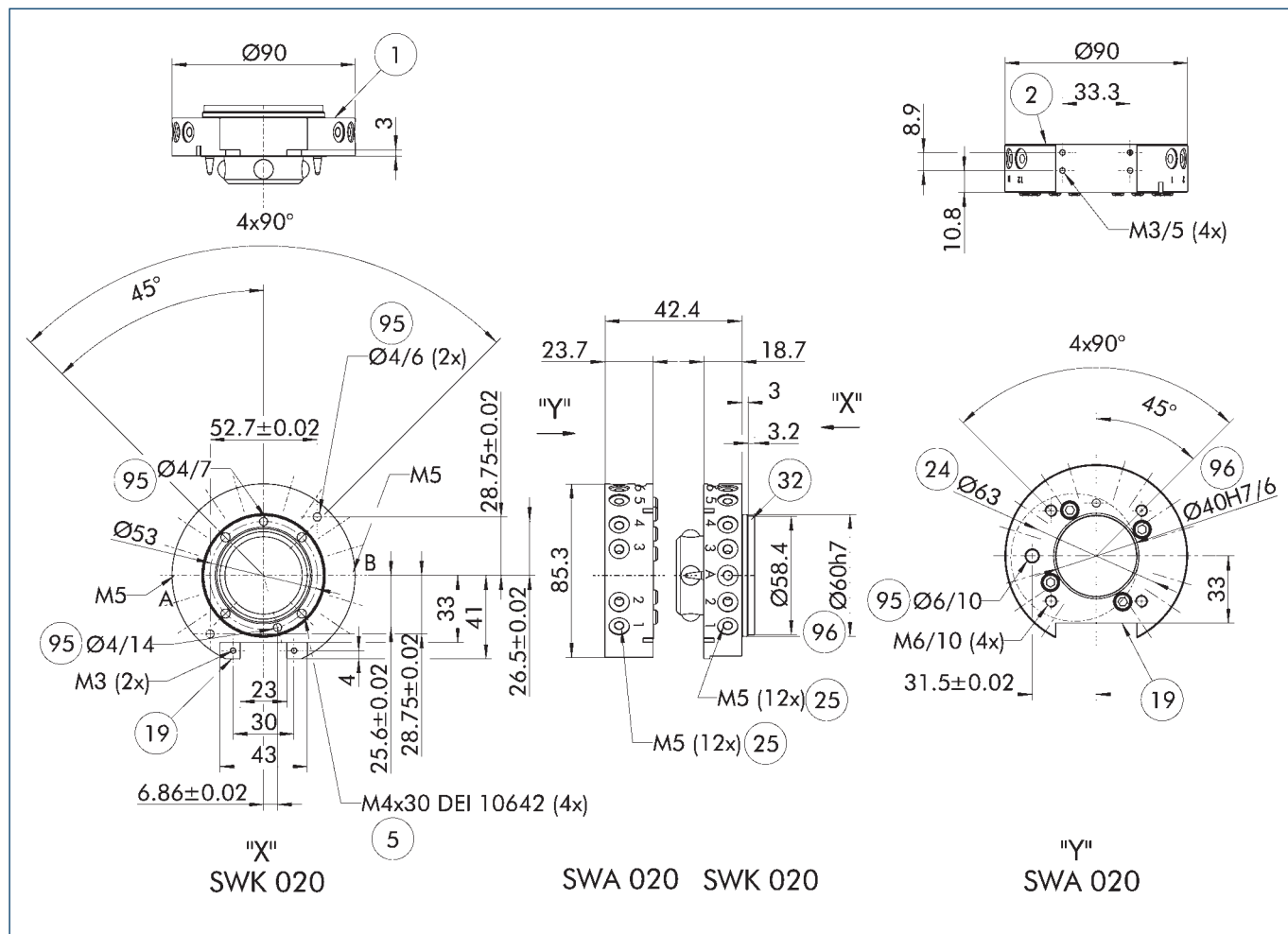
## Technical data

Description		SWK-020-000-000	SWK-020HM-000-000-SQ	SWA-020-000-000
		Quick-change master	Quick-Change master for hollow wrist robots	Quick-change adapter
ID		0302322		0302323
Recommended handling weight	[kg]	25	25	25
Piston stroke monitoring		optional	integrated	
Locking force	[N]	2300	2300	2300
Repeat accuracy	[mm]	0.015	0.015	0.015
Weight	[kg]	0.54	0.68	0.32
Max. distance when locking	[mm]	3	3	3
Air connection thread pneumatic feed-through		12x M5	12x M5	12x M5
Lock/unlock main connection		M5	M5	
Max. permissible XY axis offset	[mm]	±1	±1	±1
Max. permissible angular offset	[°]	±2	±2	±2
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9	4.5/6.9
Dimensions $\varnothing D \times Z^*$	[mm]	90 x 18.7	90 x 46	90 x 23.7
Screw connection diagram		K	K	K

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.



Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

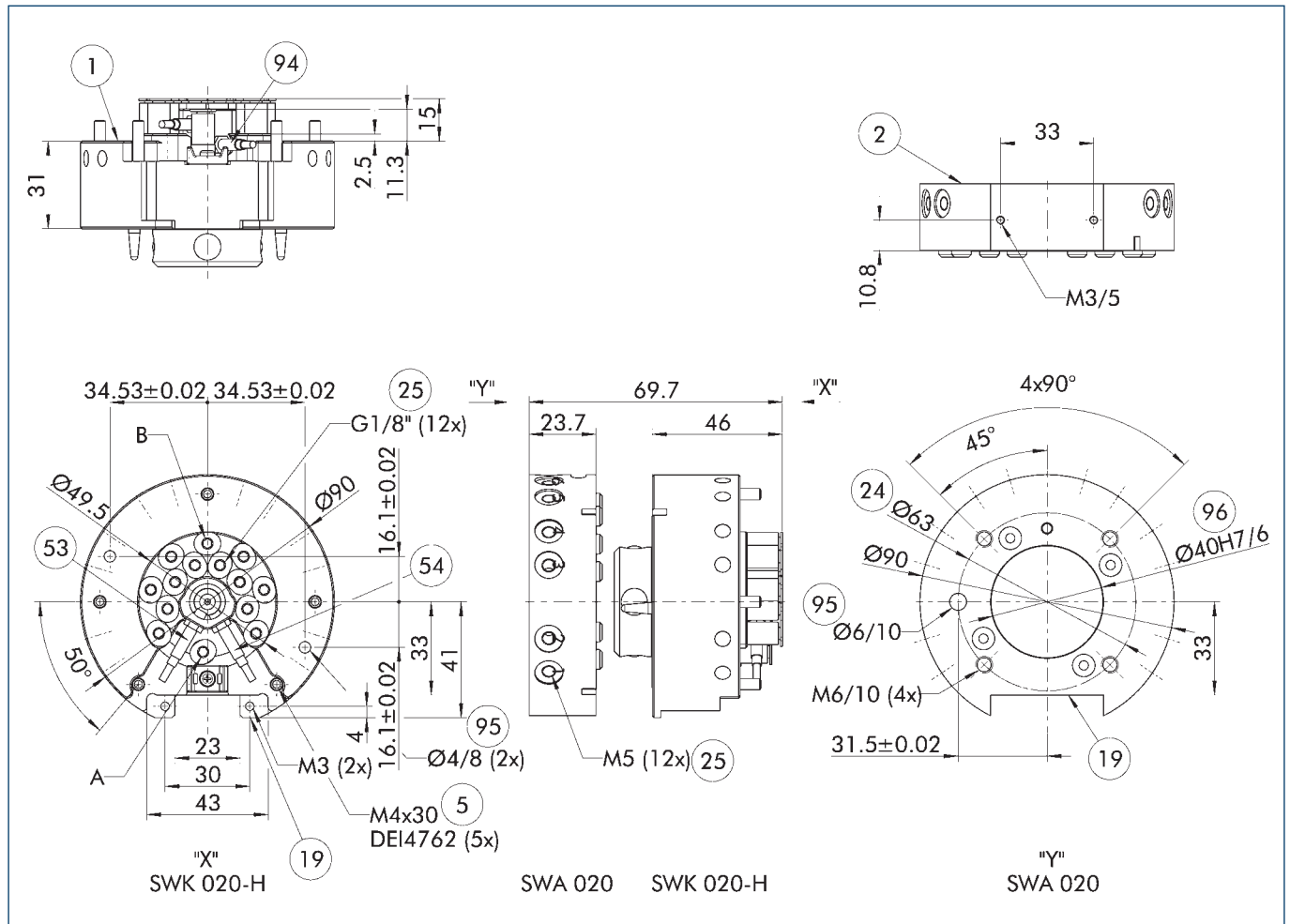
① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

# SWS 020

Quick change system

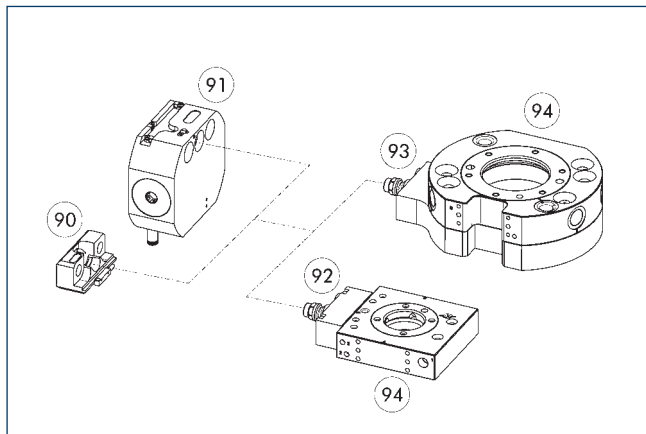
## SWK-020-H main view



Via axial air connections it is perfectly suited for robots with through bores.

- |   |                                 |
|---|---------------------------------|
| A, a Air connection locked                | 24 Bolt circle                  |
| B, b Air connection unlocked              | 25 Pneumatic feed-throughs      |
| 1 Robot-side connection                   | 53 Monitoring Position unlocked |
| 2 Tool-side connection                    | 54 Monitoring Position locked   |
| 5 Through hole for connection with screws | 94 Optional proximity switch    |
| 19 Mounting surface for options           | 95 Fit for centering pins       |
|   | 96 Fit for centering            |

Storage system SWM-B

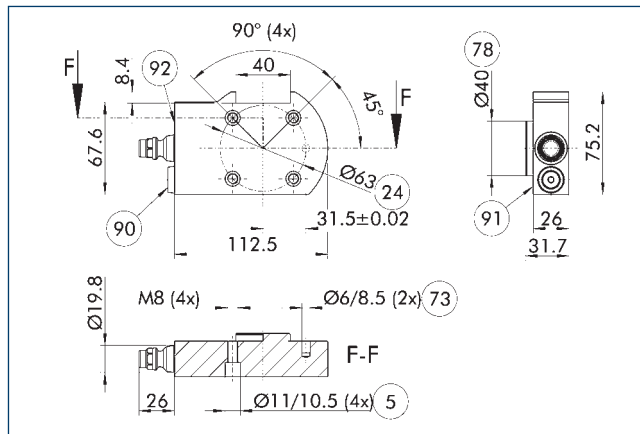


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	Suitable for
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

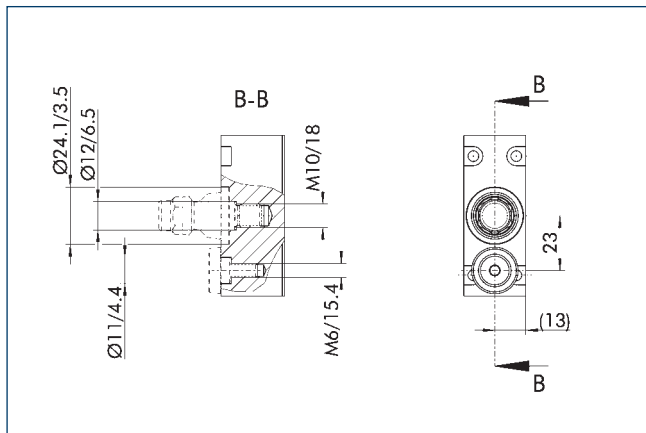
Adapter plate SWA 020/021/022



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022

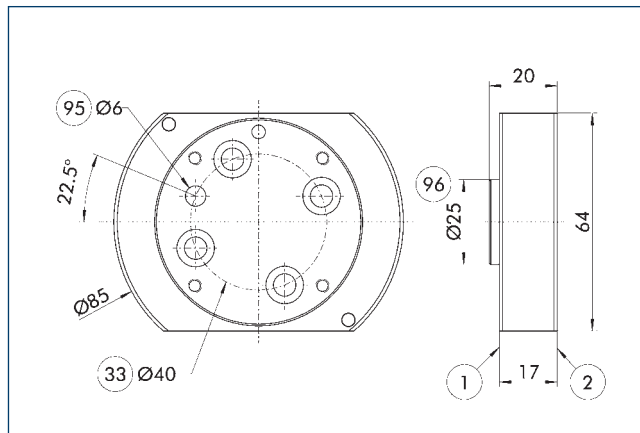
Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022

Adapter plate ISO-A40-R



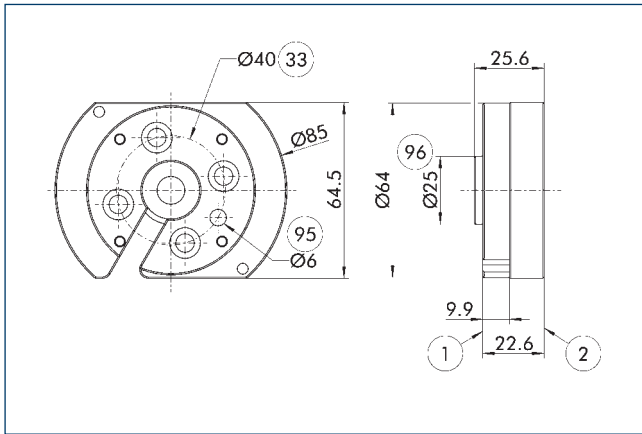
- 1 Robot-side connection
- 2 Tool-side connection
- 33 DIN ISO-9409 bolt circle
- 95 Fit for centering pins
- 96 Fit for centering

Robot side adapter plate

Description	ID	Suitable for
Robot side		
A-SWK-020/021-ISO-A40	0302200	

① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A40-SIP-R



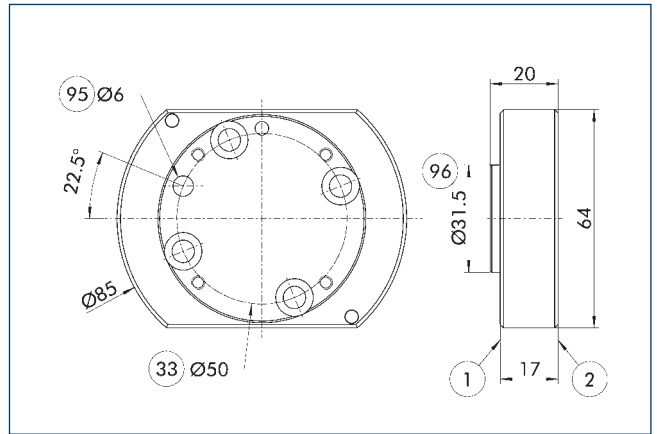
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A40-SIP	0302229

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A50-R



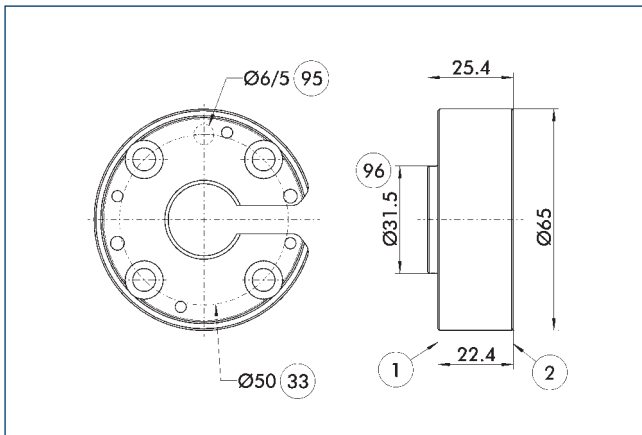
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A50	0302201

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A50-SIP-R



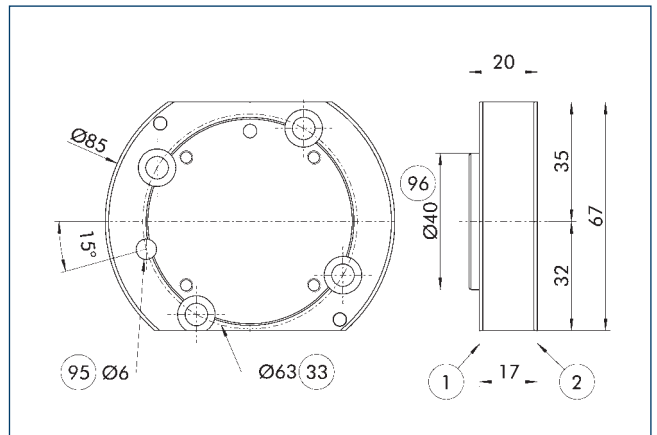
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A50-SIP	0302230

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A63-R



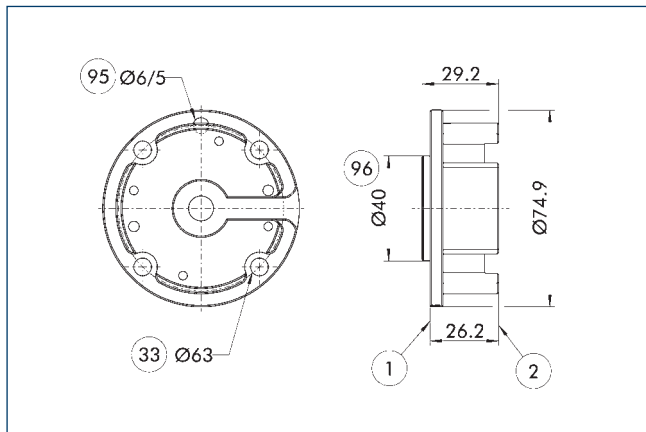
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A63	0302202

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

Adapter plate ISO-A63-SIP-R



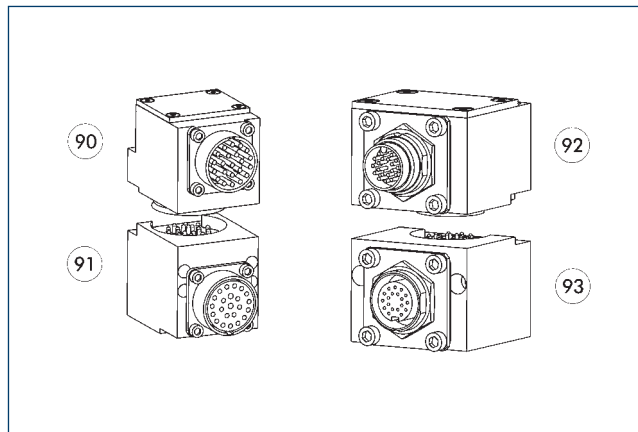
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A63-SIP	0302231

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

Electric feed-through module



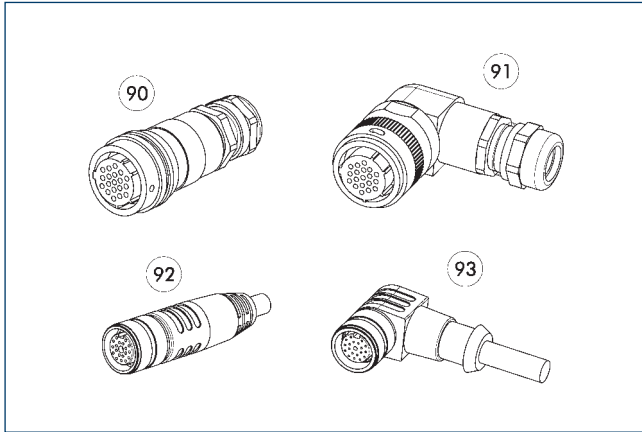
- ⑨① Electric module with bayonet fitting, robot-side
- ⑨② Electric module with metric thread, robot-side
- ⑨③ Electric module with bayonet fitting, tool-side
- ⑨④ Electric module with metric thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SW0-KE7-K	9960993	
Feed-through module for communication on the tool side		
SW0-KE7-A	9960994	
Feed-through module for signal on the robot side		
SW0-K12-K	9948701	12
SW0-K19-K	9937328	19
SW0-K19P-K	9949315	15
SW0-K26-K	9937798	26
SW0-KF19-K	9959886	19
Feed-through module for signal on the tool side		
SW0-K12-A	9948702	12
SW0-K19-A	9937329	19
SW0-K26-A	9937799	26
SW0-KF19-A	9959887	19

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SW0" or visit our website.

### Cable plug/cable extension



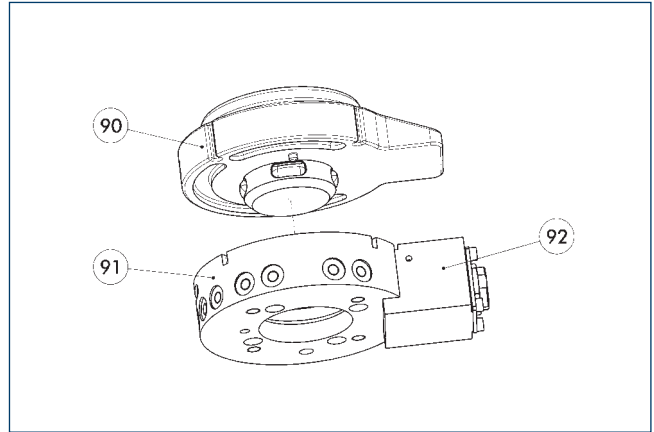
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

### Dust cover SWD-020

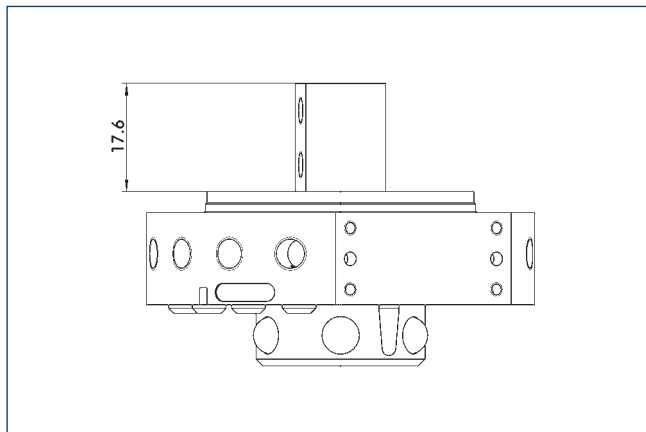


- 90 Dust cover SWD
- 91 Quick-change adapter SWA
- 92 Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID	
<b>Dust cover</b>		
SWD-020-K00-000	0302252	

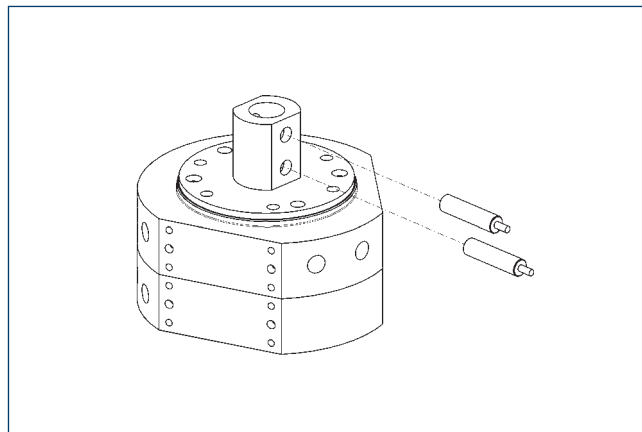
Piston stroke control



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID	
Piston stroke control		
SWK-020-SIP	0302325	

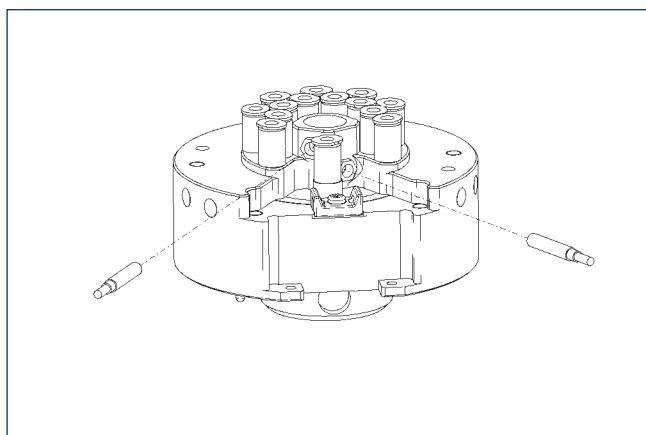
Piston stroke control



Description	ID	Often combined
Inductive proximity switches		
IN 41-S-M8-PNP	1325755	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	

① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

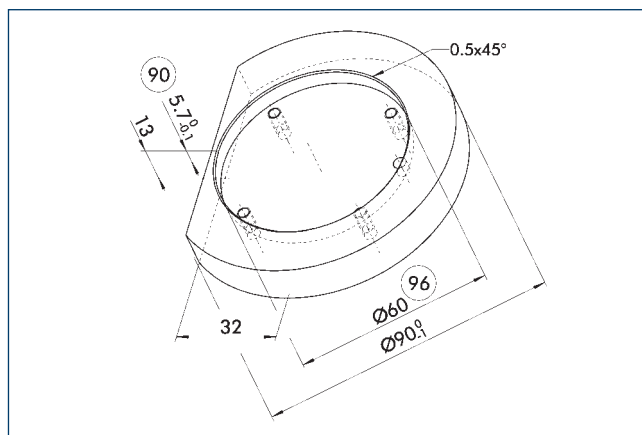
Piston stroke control



Description	ID	Often combined
Inductive proximity switches		
IN 41-S-M8-PNP	1325755	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	

① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

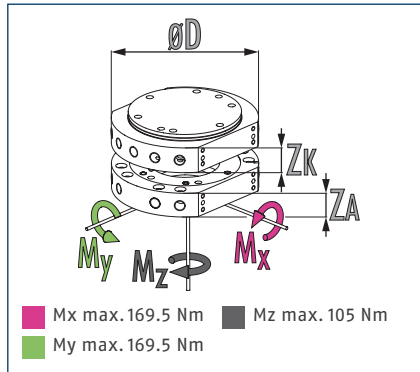
Adapter plate design



⑨0 Recommended adapter plate      ⑨6 Fit for centering depth

Recommendation for the design of the adapter plate.

## Dimensions and maximum loads



ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

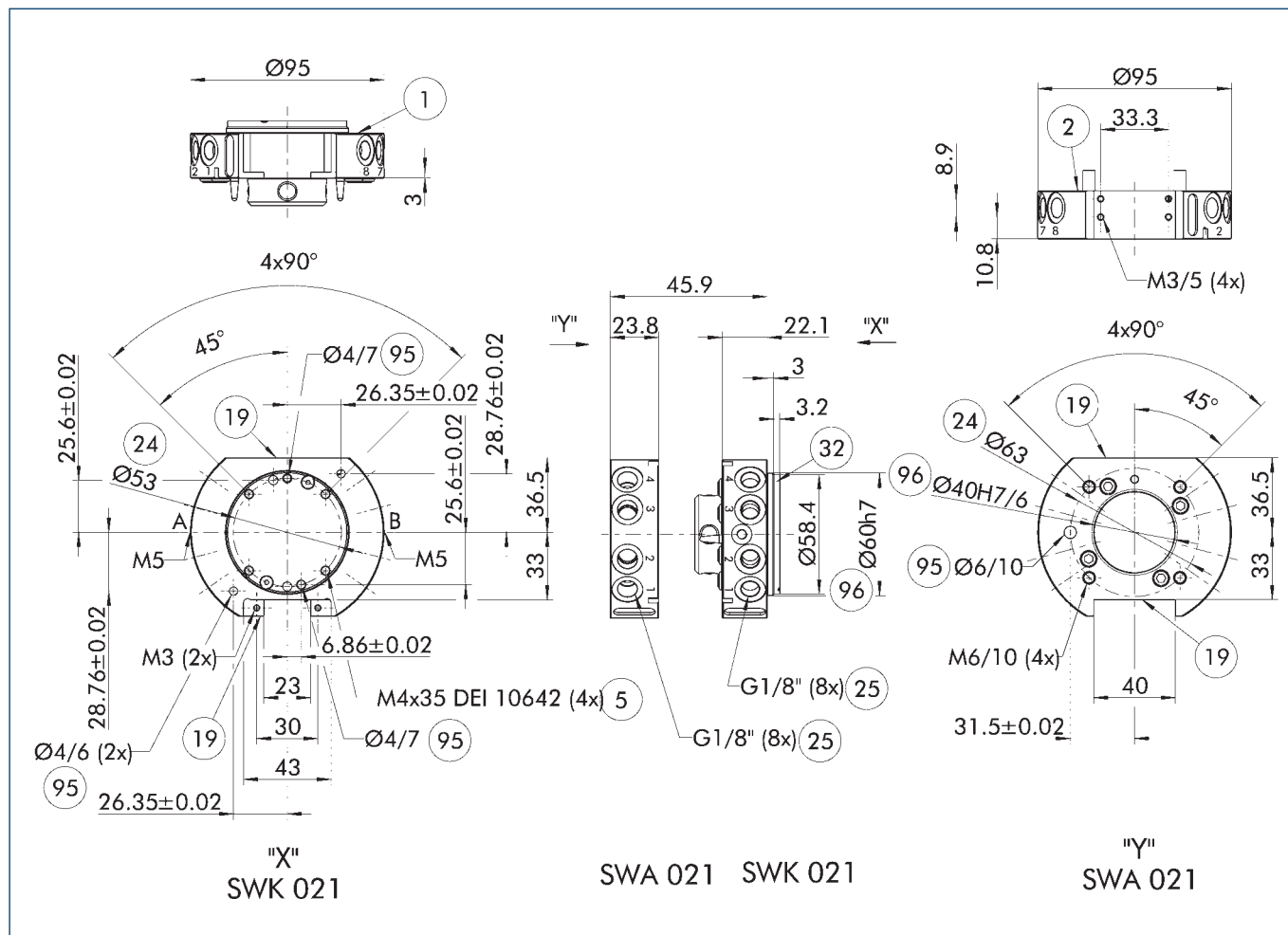
## Technical data

Description		SWK-021-000-000	SWK-021HM-000-000-SQ	SWA-021-000-000
		Quick-change master	Quick-Change master for hollow wrist robots	Quick-change adapter
ID		0302326		0302327
Recommended handling weight	[kg]	25	25	25
Piston stroke monitoring		optional	integrated	
Locking force	[N]	2300	2300	2300
Repeat accuracy	[mm]	0.015	0.015	0.015
Weight	[kg]	0.5	0.7	0.3
Max. distance when locking	[mm]	3	3	3
Air connection thread pneumatic feed-through		8x G1/8"	8x G1/8"	8x G1/8"
Lock/unlock main connection		M5	M5	
Max. permissible XY axis offset	[mm]	±1	±1	±1
Max. permissible angular offset	[°]	±1	±1	±1
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	95 x 22.1	95 x 58.9	95 x 23.8
Screw connection diagram		K side A/K J via adapter plate side B	K side A/K J via adapter plate side B	K side A/K J via adapter plate side B

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.



Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

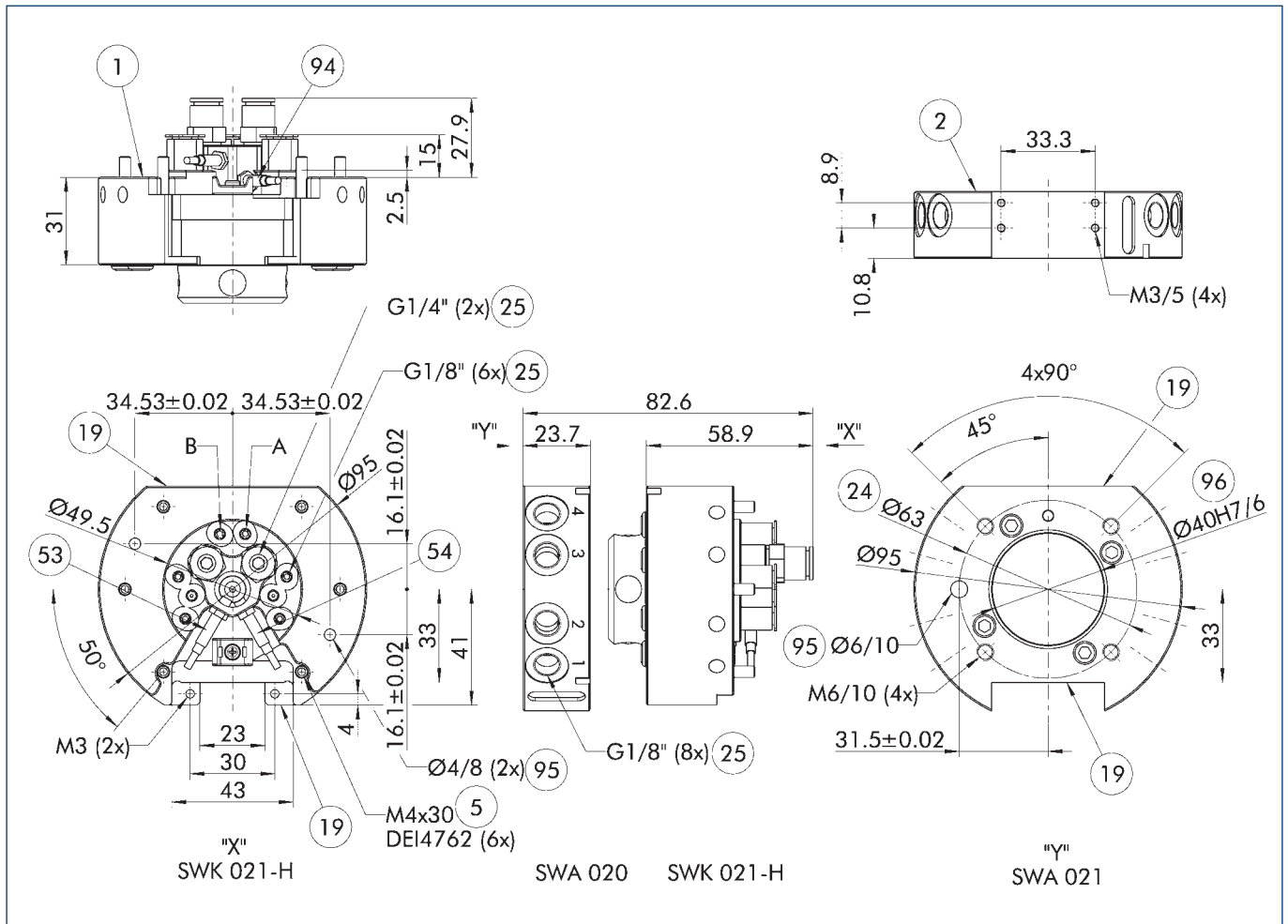
① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

# SWS 021

Quick change system

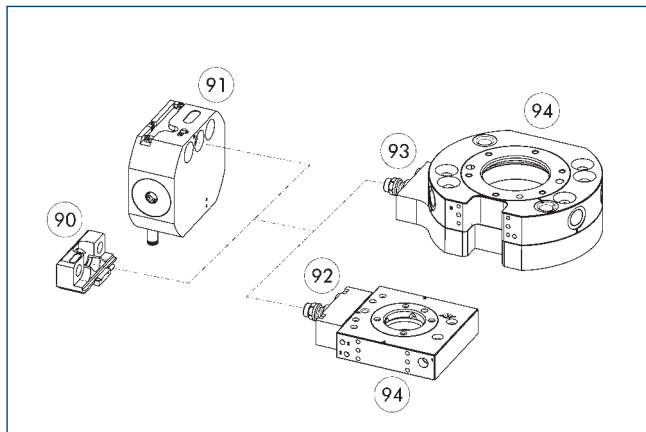
## SWK-021-H main view



Via axial air connections it is perfectly suited for robots with through bores.

- |   |                                 |
|---|---------------------------------|
| A, a Air connection locked                | 24 Bolt circle                  |
| B, b Air connection unlocked              | 25 Pneumatic feed-throughs      |
| 1 Robot-side connection                   | 53 Monitoring Position unlocked |
| 2 Tool-side connection                    | 54 Monitoring Position locked   |
| 5 Through hole for connection with screws | 94 Optional proximity switch    |
| 19 Mounting surface for options           | 95 Fit for centering pins       |
|   | 96 Fit for centering            |

Storage system SWM-B

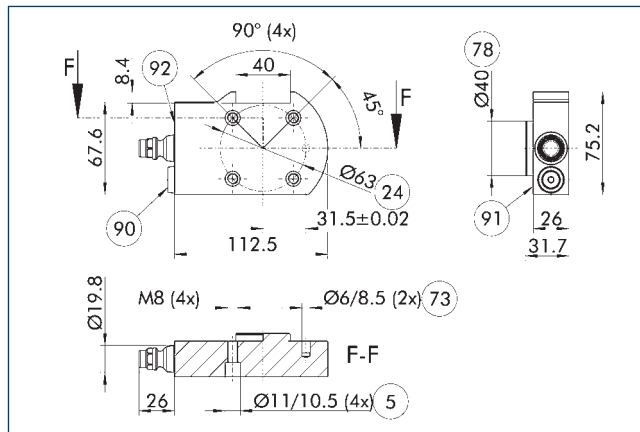


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	Suitable for
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

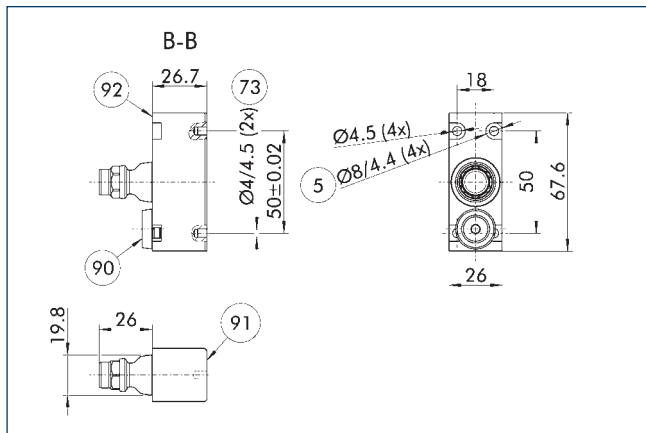
Adapter plate SWA 020/021/022



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022

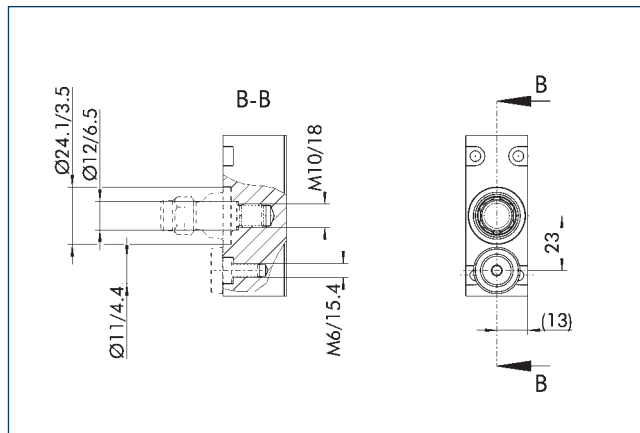
Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

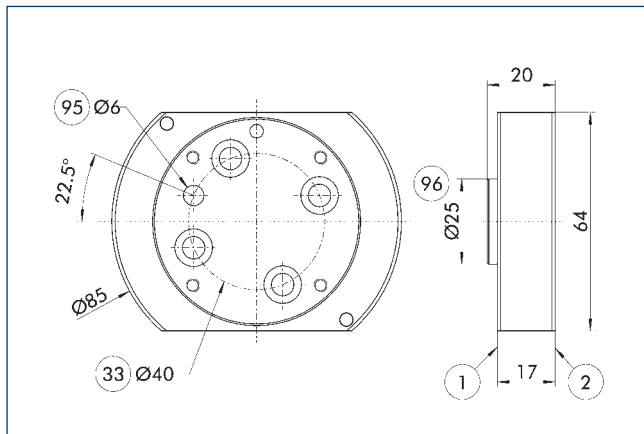
Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

## Adapter plate ISO-A40-R



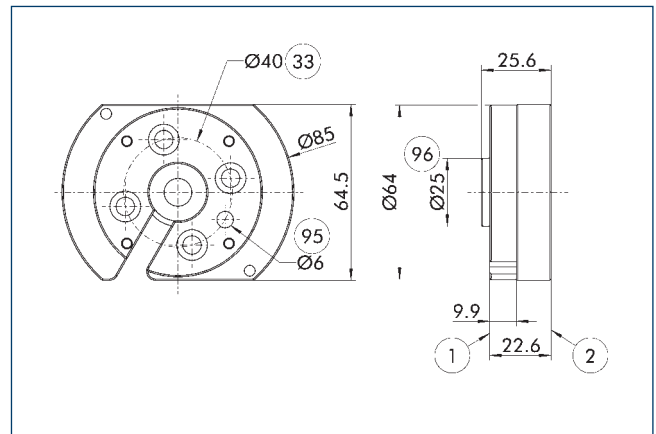
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A40	0302200

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A40-SIP-R



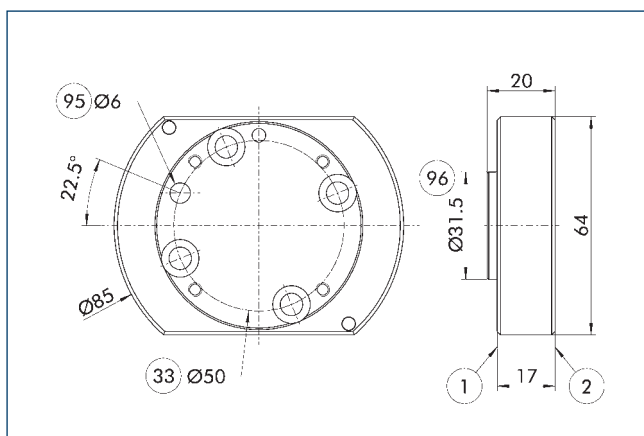
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A40-SIP	0302229

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A50-R



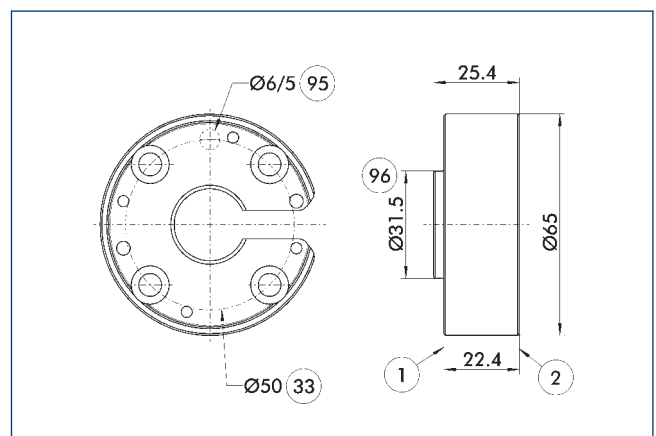
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A50	0302201

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Adapter plate ISO-A50-SIP-R



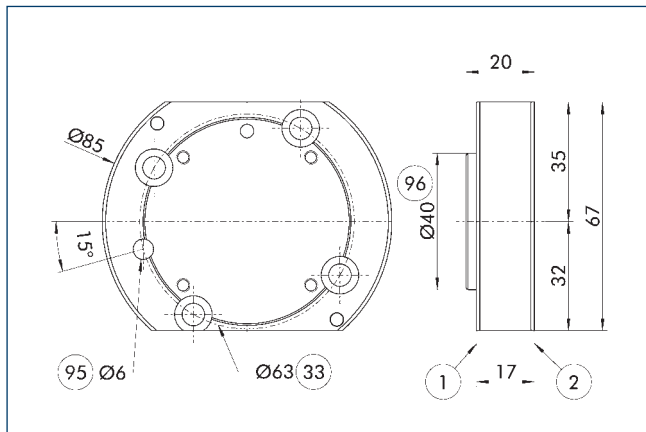
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A50-SIP	0302230

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

Adapter plate ISO-A63-R



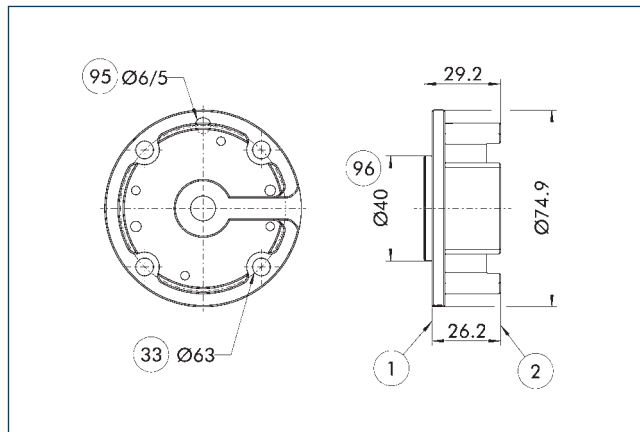
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A63	0302202

- ① Adapter plate for quick-change master without piston stroke control, not suitable on quick-change head for hollow wrist robots.

Adapter plate ISO-A63-SIP-R



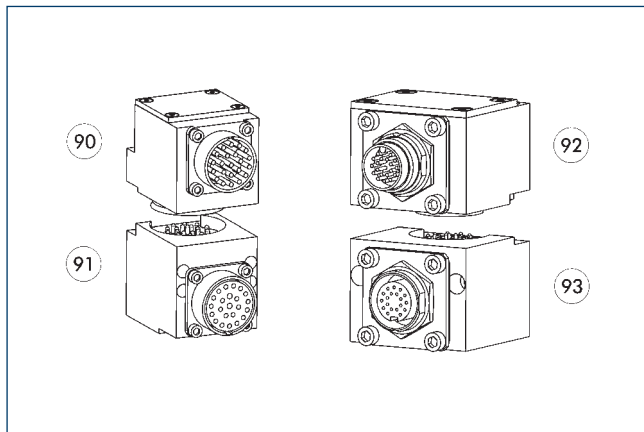
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-020/021-ISO-A63-SIP	0302231

- ① Adapter plate for quick-change master with piston stroke control, not suitable on quick-change head for hollow wrist robots.

## Electric feed-through module



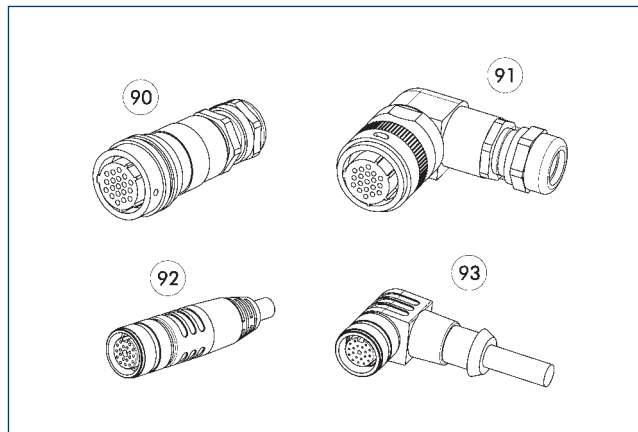
- ⑨⑩ Electric module with bayonet fitting, robot-side
- ⑨① Electric module with bayonet fitting, tool-side
- ⑨② Electric module with metric thread, robot-side
- ⑨③ Electric module with metric thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
<b>Feed-through module for communication on the robot side</b>		
SWO-KE7-K	9960993	
<b>Feed-through module for communication on the tool side</b>		
SWO-KE7-A	9960994	
<b>Feed-through module for signal on the robot side</b>		
SWO-K12-K	9948701	12
SWO-K19-K	9937328	19
SWO-K19P-K	9949315	15
SWO-K26-K	9937798	26
SWO-KF19-K	9959886	19
<b>Feed-through module for signal on the tool side</b>		
SWO-K12-A	9948702	12
SWO-K19-A	9937329	19
SWO-K26-A	9937799	26
SWO-KF19-A	9959887	19

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

## Cable plug/cable extension



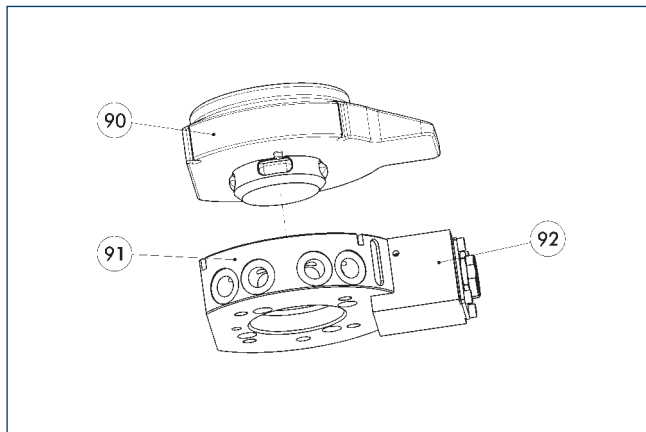
- ⑨⑩ Plug/socket straight
- ⑨① Connector/angled socket
- ⑨② Connector/straight socket with extension cable
- ⑨③ Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

Dust cover SWD-021

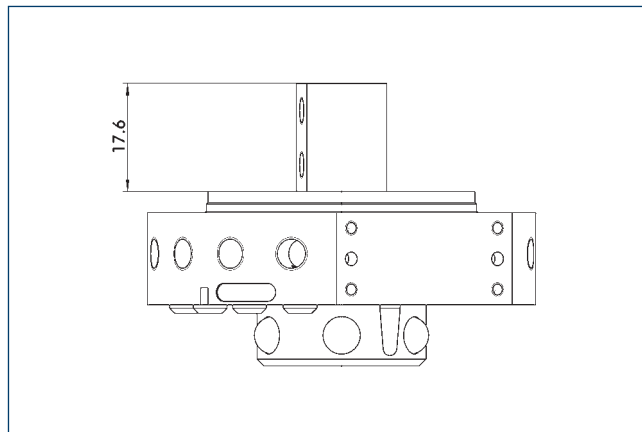


- 90 Dust cover SWD
- 91 Quick-change adapter SWA
- 92 Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
Dust cover	
SWD-021-K00-000	0302253

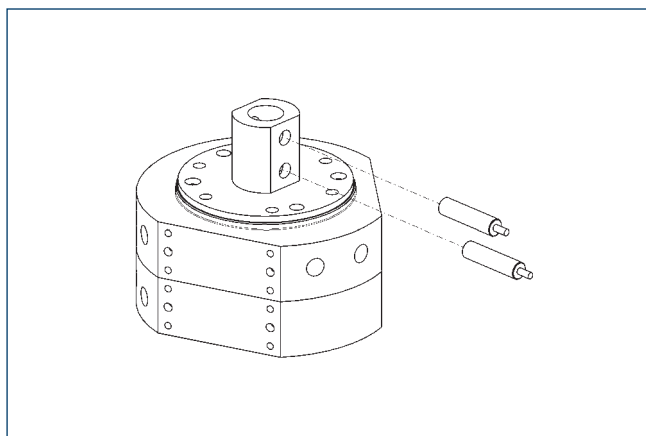
Piston stroke control



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID
Piston stroke control	
SWK-021-SIP	0302328

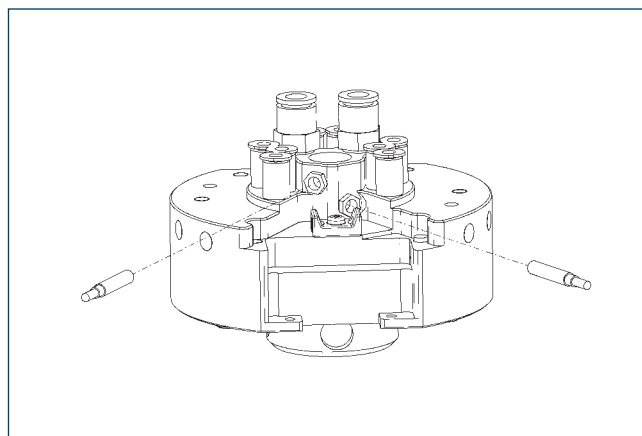
Piston stroke control



Description	ID	Often combined
Inductive proximity switches		
IN 41-S-M8-PNP	1325755	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	

- ① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

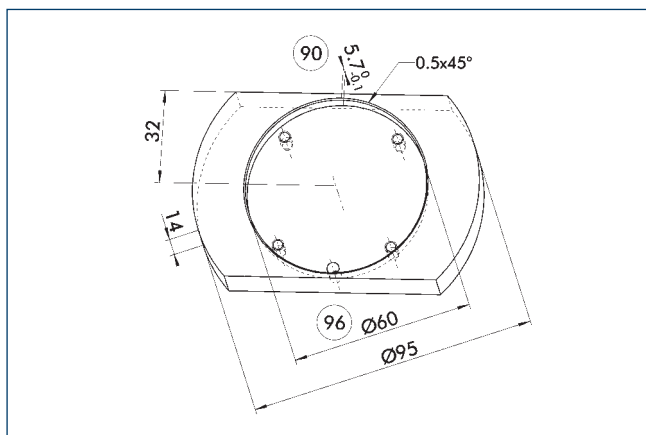
Piston stroke control



Description	ID	Often combined
Inductive proximity switches		
IN 41-S-M8-PNP	1325755	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

## Adapter plate design



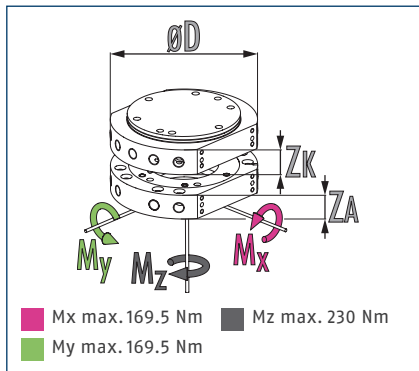
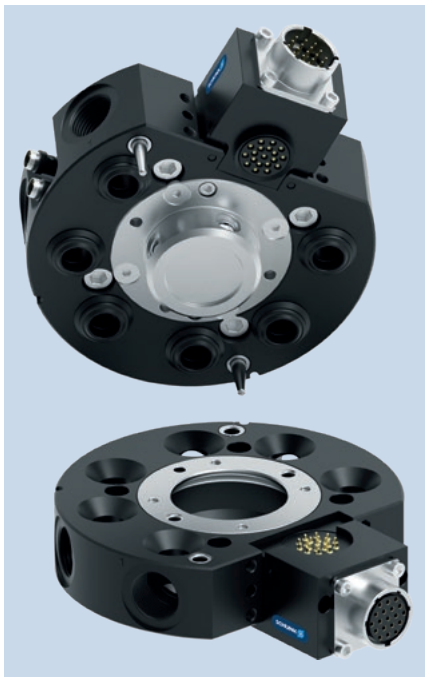
- ⑨⑩ Recommended adapter plate      ⑨⑥ Fit for centering depth

Recommendation for the design of the adapter plate.





## Dimensions and maximum loads



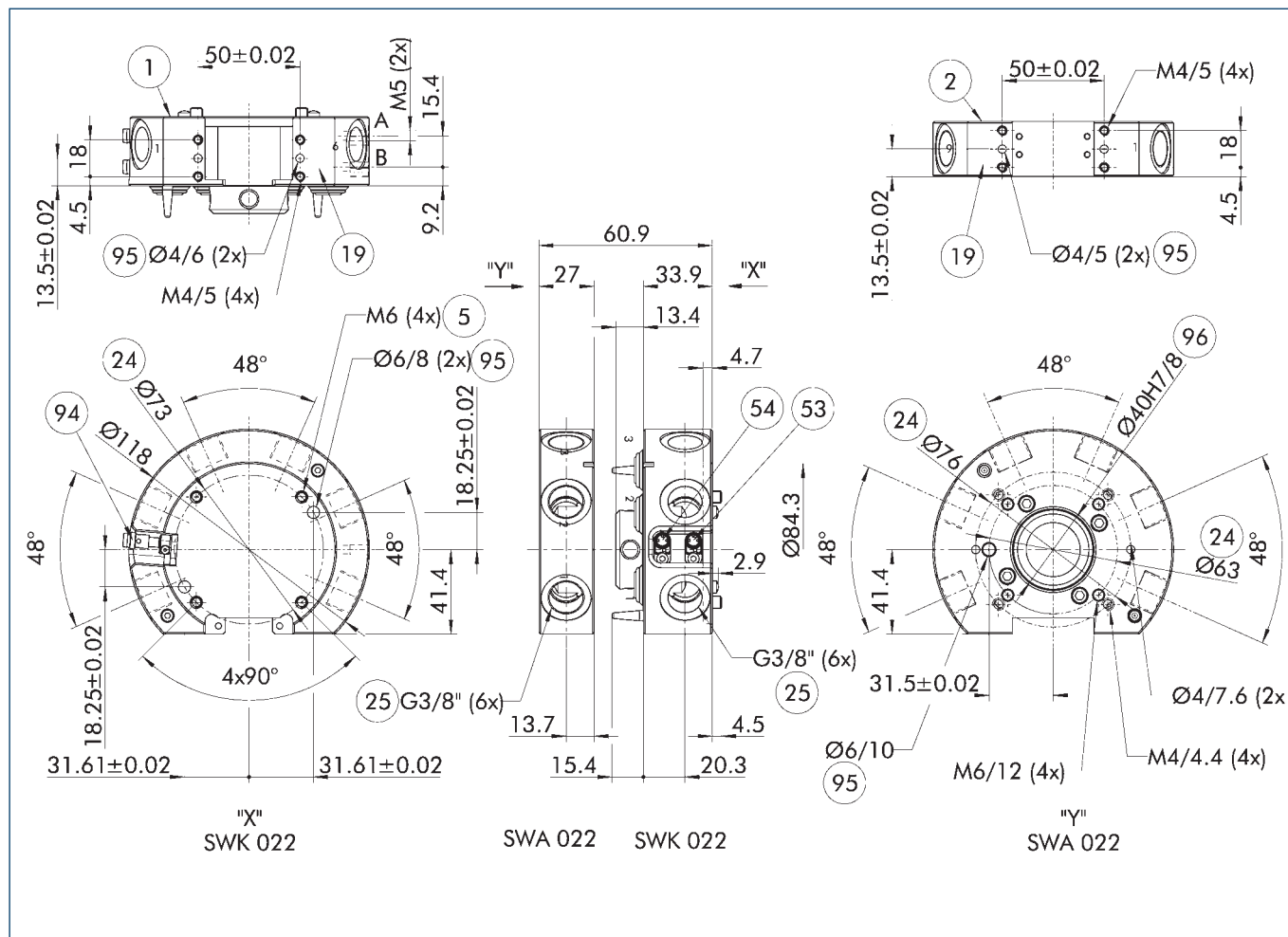
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-022-000-000-SM	SWA-022-000-000
		Quick-change master	Quick-change adapter
ID		1326008	1326013
Recommended handling weight	[kg]	25	25
Piston stroke monitoring		integrated	
Locking force	[N]	2300	2300
Repeat accuracy	[mm]	0.0152	0.0152
Weight	[kg]	0.87	0.55
Max. distance when locking	[mm]	2	2
Air connection thread pneumatic feed-through		6x G3/8"	6x G3/8"
Lock/unlock main connection		M5	M5
Max. permissible XY axis offset	[mm]	0.9	0.9
Max. permissible angular offset	[°]	0.8	0.8
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	118 x 29.1	118 x 27.1
Screw connection diagram		K/J	K/J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

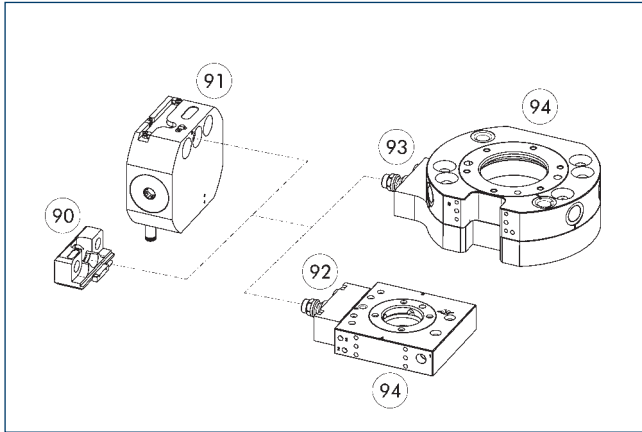
Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- |   |                                 |
|---|---------------------------------|
| A, a Air connection locked                | 24 Bolt circle                  |
| B, b Air connection unlocked              | 25 Pneumatic feed-throughs      |
| 1 Robot-side connection                   | 53 Monitoring Position unlocked |
| 2 Tool-side connection                    | 54 Monitoring Position locked   |
| 5 Through hole for connection with screws | 94 Proximity switch             |
| 19 Mounting surface for options           | 95 Fit for centering pins       |
|   | 96 Fit for centering            |

## Storage system SWM-B

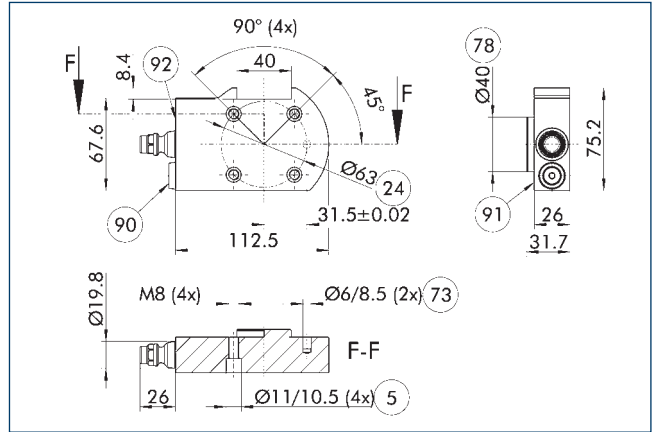


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

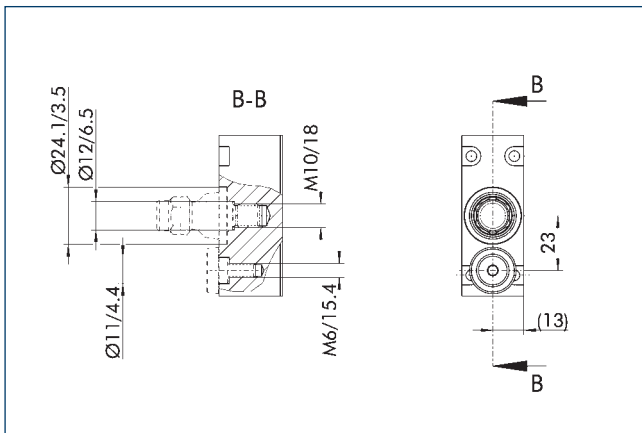
## Adapter plate SWA 020/021/022



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022

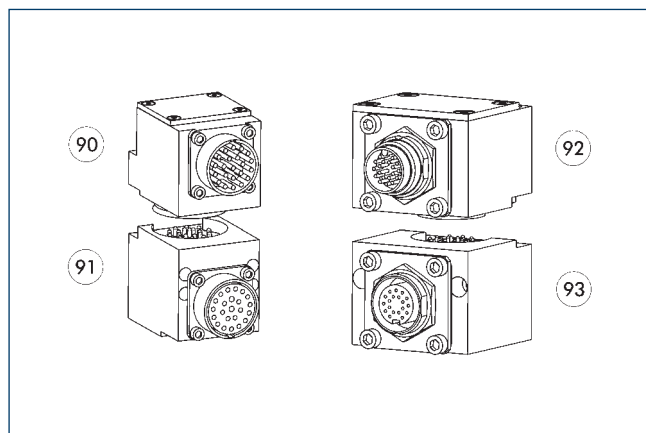
## Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-020/021/022-SWM-B 085	1523816	SWA 020/021/022
A-SWA-020/021/022-SWM-B 085-V	1523845	SWA 020/021/022

## Electric feed-through module



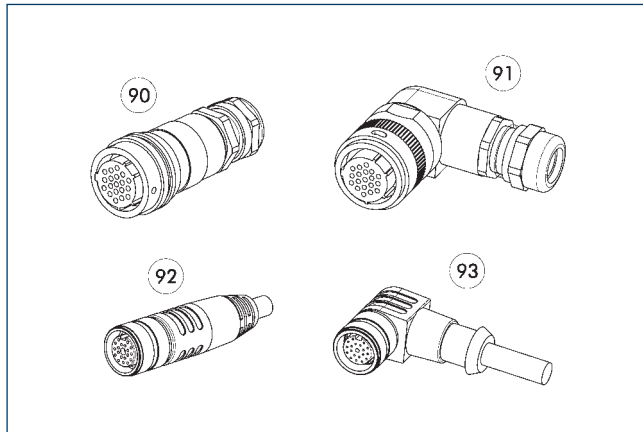
- 90 Electric module with bayonet fitting, robot-side  
 91 Electric module with bayonet fitting, tool-side  
 92 Electric module with metric thread, robot-side  
 93 Electric module with metric thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-TP-K	9871166	
Feed-through module for communication on the tool side		
SWO-TP-A	9871165	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-K19-K	9937328	19
SWO-K26-K	9937798	26
SWO-KF19-K	9959886	19
SWO-R19W-K	9942041	15
Feed-through module for signal on the tool side		
SWO-K19-A	9937329	19
SWO-K26-A	9937799	26
SWO-KF19-A	9959887	19
SWO-R19-A	9935816	19

- ⓘ For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

### Cable plug/cable extension



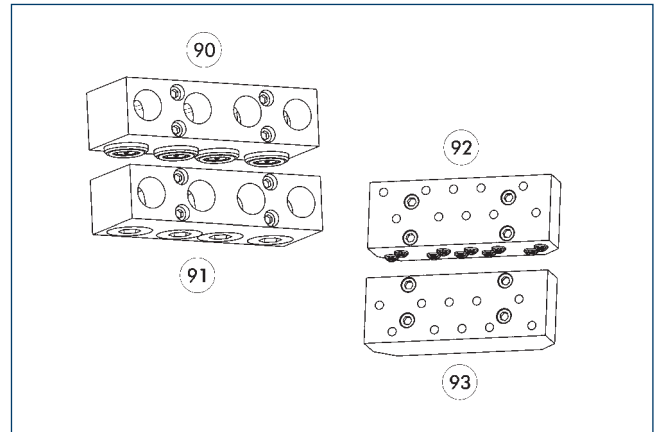
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length
		[m]
<b>Angled cable connector, robot-side</b>		
KAS-08G-K-90	0301270	
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-08G-A-90	0301271	
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

For more detailed information and other cable connectors, see catalog chapter "SW0" or visit our website.

### Pneumatic/ fluidic feed-through modules



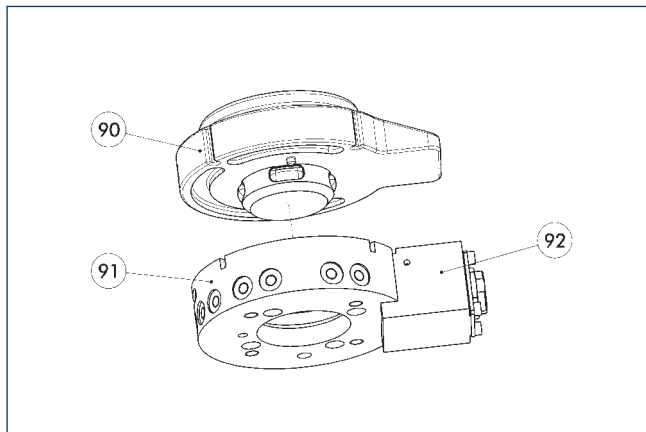
- 90 Self-sealing fluid module, robot-side
- 91 Self-sealing fluid module, tool-side
- 92 Pneumatic module, robot-side
- 93 Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SW0-FG2-K	9936817	2
<b>Feed-through module for liquids on the tool side</b>		
SW0-FG2-A	9936818	2

For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

Dust cover SWD-022

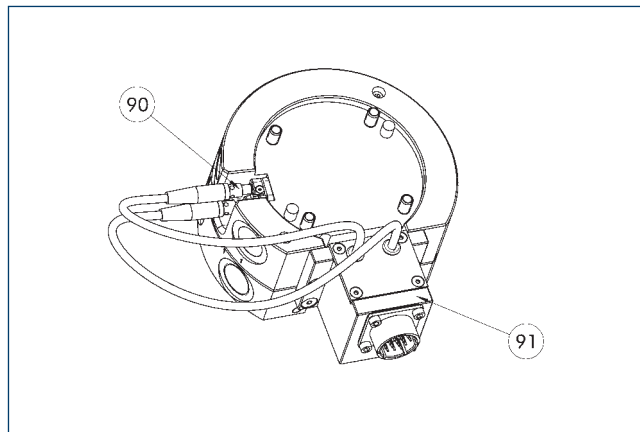


- ⑨0 Dust cover SWD
- ⑨1 Quick-change adapter SWA
- ⑨2 Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
Dust cover	
SWD-022-K00-000	1501957
SWD-022-R00-000	1502827

Assembly situation of the locking monitoring

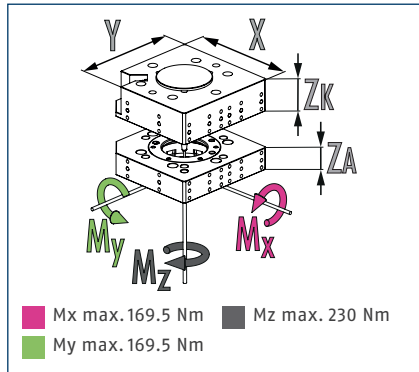


- ⑨0 AS-SWK 022
- ⑨1 Electric optional module ...W-master with integrated sensor connection

Description	ID
Robot side	
AS-SWK-022/029-SM	1501841

- ① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

### Dimensions and maximum loads



ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

### Technical data

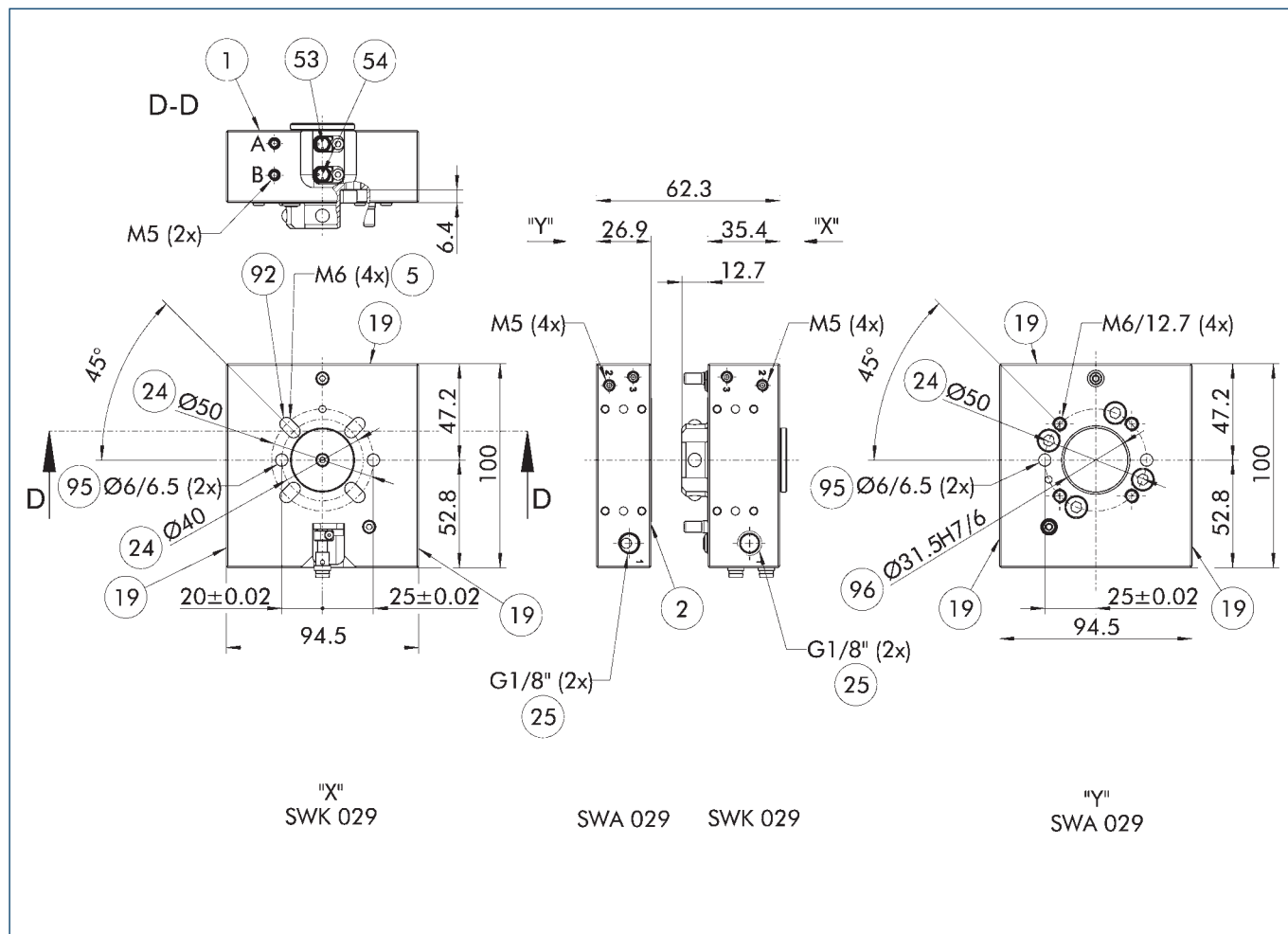
Description		SWK-029-0-0-0-SM	SWA-029-0-0-0
		Quick-change master	Quick-change adapter
ID		1499175	1499191
Recommended handling weight	[kg]	35	35
Piston stroke monitoring		integrated	
Locking force	[N]	2850	2850
Repeat accuracy	[mm]	0.0152	0.0152
Weight	[kg]	0.99	0.67
Max. distance when locking	[mm]	1.5	1.5
Air connection thread pneumatic feed-through		2x G1/8"	2x G1/8"
Air connection thread pneumatic feed-through		4x M5	4x M5
Lock/unlock main connection		M5	M5
Max. permissible XY axis offset	[mm]	0.9	0.9
Max. permissible angular offset	[°]	0.8	0.8
Robot-side connection		ISO 9409-1-50-4-M6 **	ISO 9409-1-50-4-M6
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions X x Y x Z*	[mm]	100 x 94.5 x 35.4	100 x 94.5 x 26.9
Screw connection diagram		3 x J	3 x J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

\*\* Robot side direct connection for ISO 9409-40-4-M6 available on request.



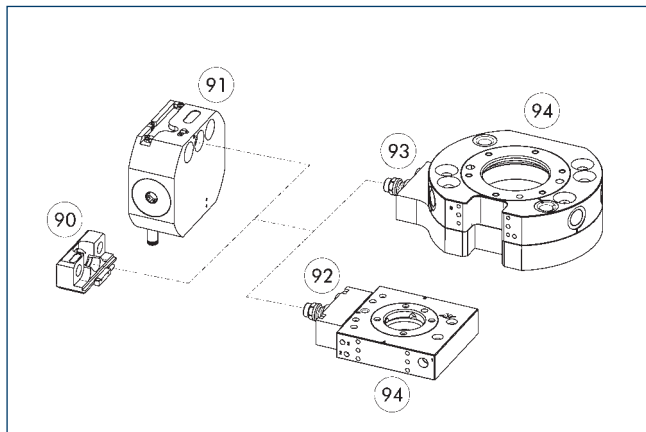
Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑱ Mounting surface for options
- ⑳ Bolt circle
- ㉔ Pneumatic feed-throughs
- ⑤③ Monitoring Position unlocked
- ⑤④ Monitoring Position locked
- ⑨② Oblong hole with countersink (from opposite side)
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

### Storage system SWM-B

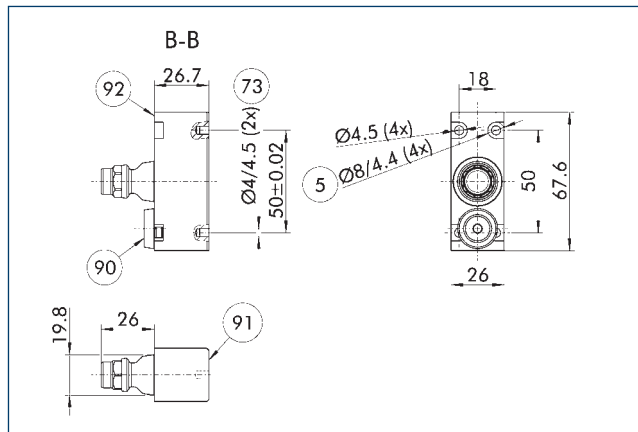


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

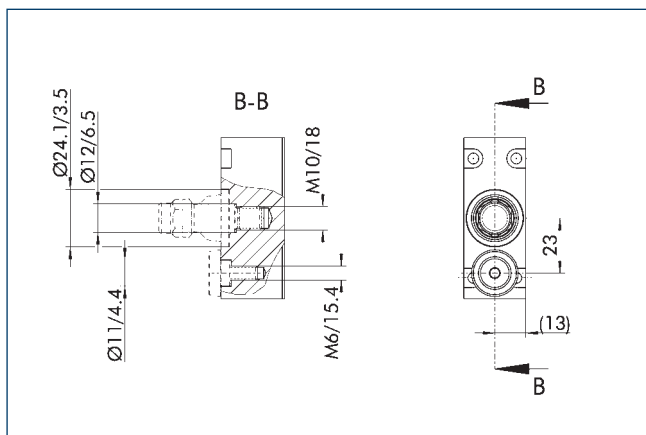
### Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

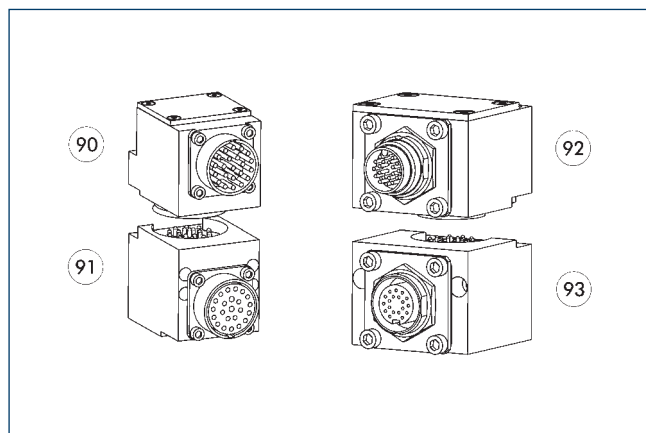
### Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

## Electric feed-through module



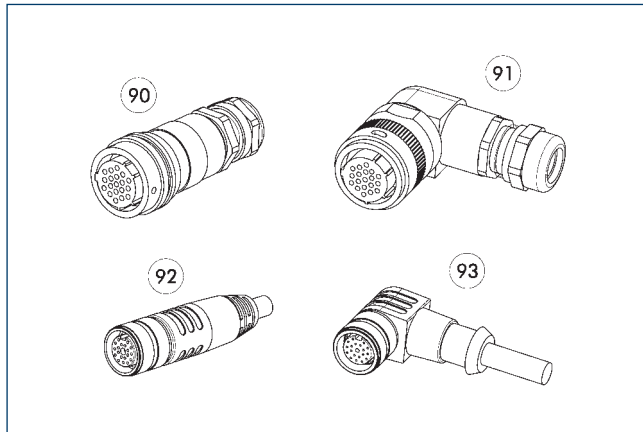
- 90 Electric module with bayonet fitting, robot-side  
 91 Electric module with bayonet fitting, tool-side  
 92 Electric module with metric thread, robot-side  
 93 Electric module with metric thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-RE5-K	9957444	
Feed-through module for communication on the tool side		
SWO-RE5-A	9957445	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-G19-K	9940649	19
SWO-R19-K	9935815	19
SWO-R19R-K	9942391	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SWO-G19-A	9940650	19
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

- ⓘ For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

### Cable plug/cable extension



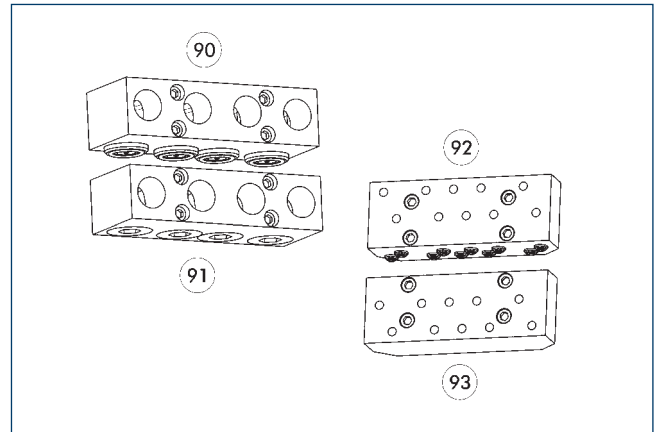
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-08G-K-90	0301270	
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-08G-A-90	0301271	
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SW0" or visit our website.

### Pneumatic/ fluidic feed-through modules



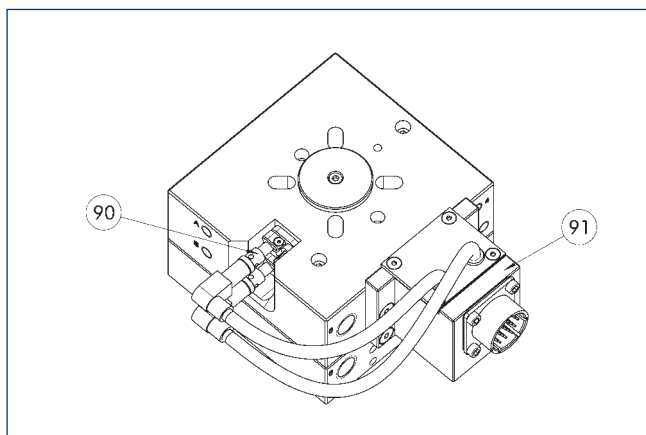
- 90 Self-sealing fluid module, robot-side
- 91 Self-sealing fluid module, tool-side
- 92 Pneumatic module, robot-side
- 93 Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SW0-FG2-K	9936817	2
<b>Feed-through module for liquids on the tool side</b>		
SW0-FG2-A	9936818	2
<b>Feed-through module for pneumatics on the robot side</b>		
SW0-P238-K	9940578	2
SW0-P8M5-K	9872067	8
<b>Feed-through module for pneumatics on the tool side</b>		
SW0-P238-A	9940580	2
SW0-P8M5-A	9872068	8

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

### Assembly situation of the locking monitoring



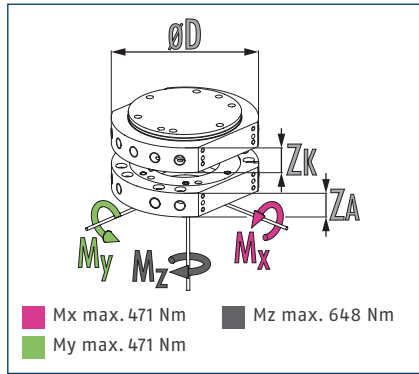
90 AS-SWK 029

91 Optional electrical module  
...R-master with integrated  
sensor connection

Description	ID	
Robot side		
AS-SWK-022/029-SM	1501841	

- ① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

## Dimensions and maximum loads



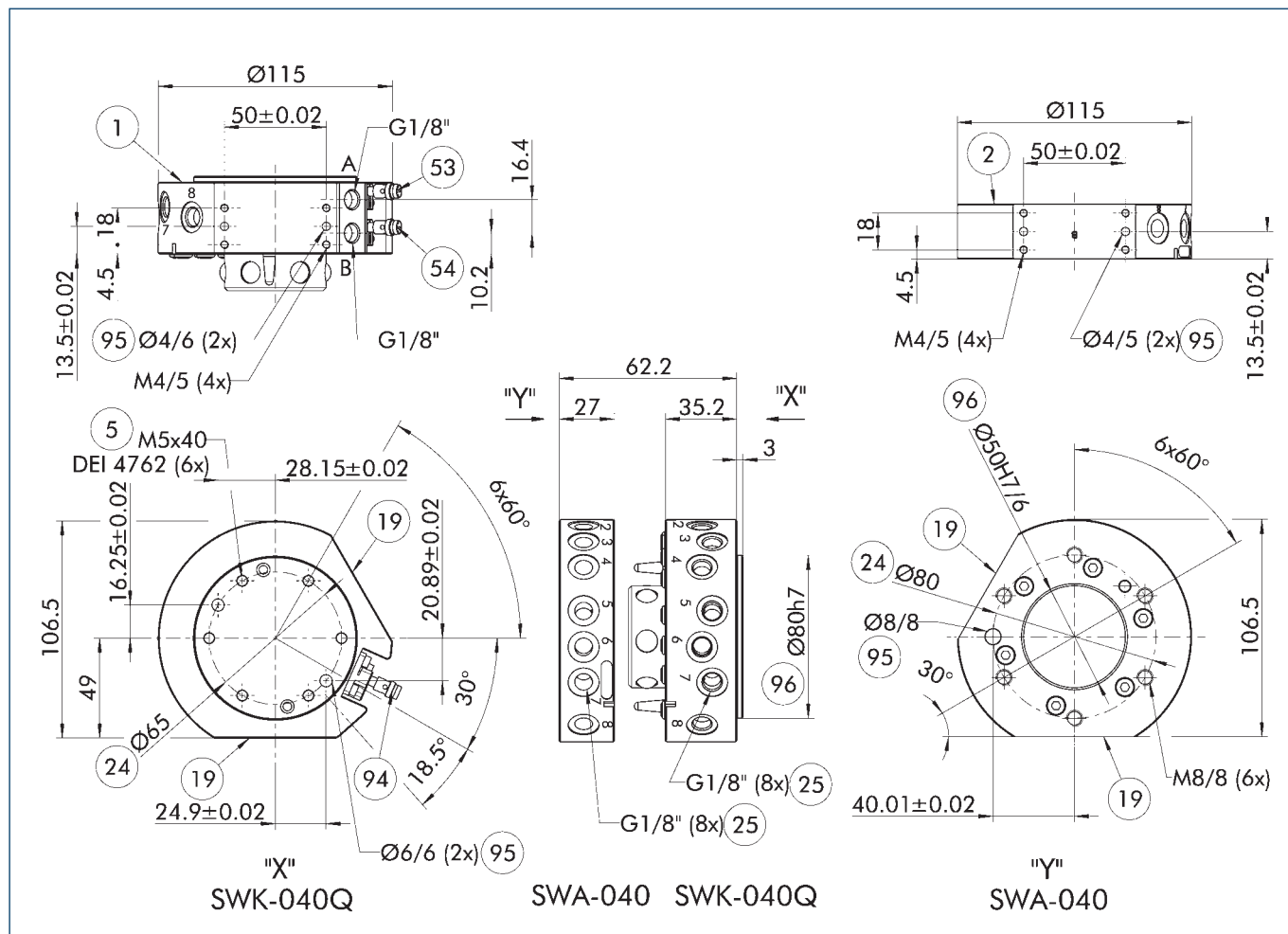
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-040Q-000-000-SG	SWA-040-000-000
		Quick-change master	Quick-change adapter
ID		0302364	0302343
Recommended handling weight	[kg]	50	50
Piston stroke monitoring		integrated	
Locking force	[N]	5650	5650
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	1.27	0.6
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		8x G1/8"	8x G1/8"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±2	±2
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions $\varnothing D \times Z^*$	[mm]	115 x 35.2	115 x 27.1
Screw connection diagram		J	J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view



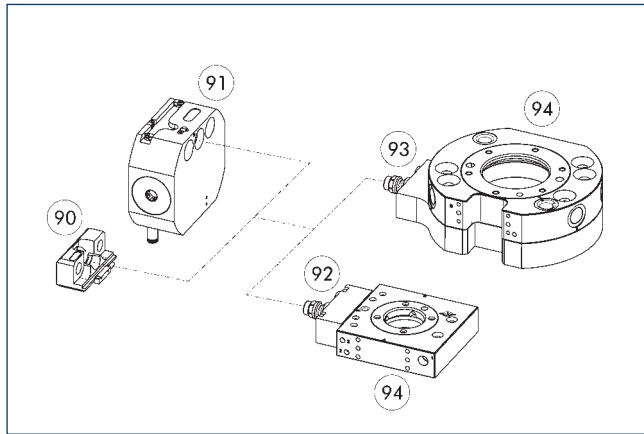
The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- |   |                                 |
|---|---------------------------------|
| A, a Air connection locked                | 24 Bolt circle                  |
| B, b Air connection unlocked              | 25 Pneumatic feed-throughs      |
| 1 Robot-side connection                   | 53 Monitoring Position unlocked |
| 2 Tool-side connection                    | 54 Monitoring Position locked   |
| 5 Through hole for connection with screws | 94 Optional proximity switch    |
| 19 Mounting surface for options           | 95 Fit for centering pins       |
|   | 96 Fit for centering            |

# SWS 040

Quick change system

## Storage system SWM-B

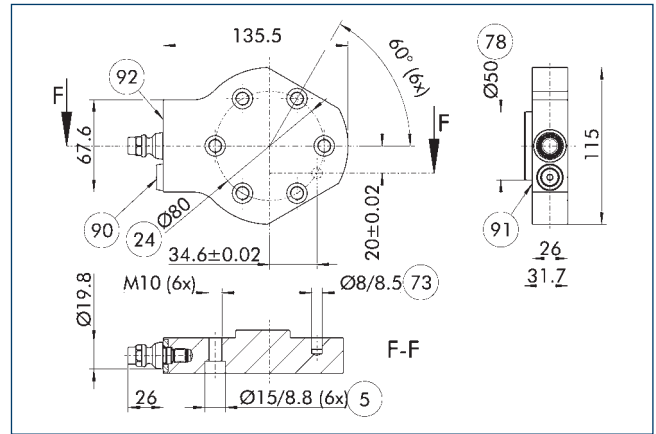


- ⑨⑩ SWM-B 085
- ⑨① SWM-B 085-V
- ⑨② Side plate
- ⑨③ Intermediate plate
- ⑨④ Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

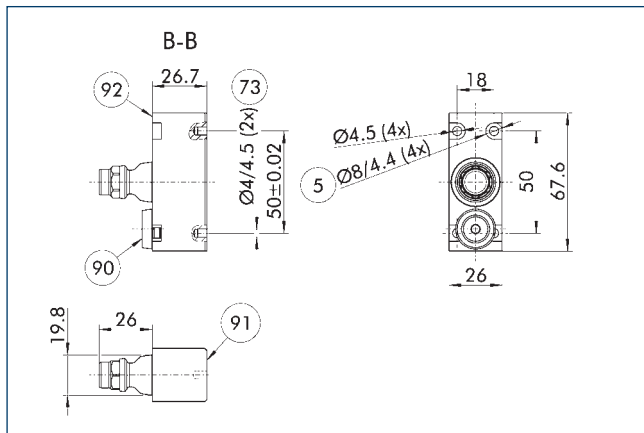
## Adapter plate SWA 040



- ⑤ Through hole for connection with screws
- ②④ Bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering
- ⑨⑩ Anti-rotation protection (only for the SWM-B -V adapter plate)
- ⑨① Mounting side SWA
- ⑨② Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-040-SWM-B 085	1523817	SWA 040
A-SWA-040-SWM-B 085-V	1523846	SWA 040

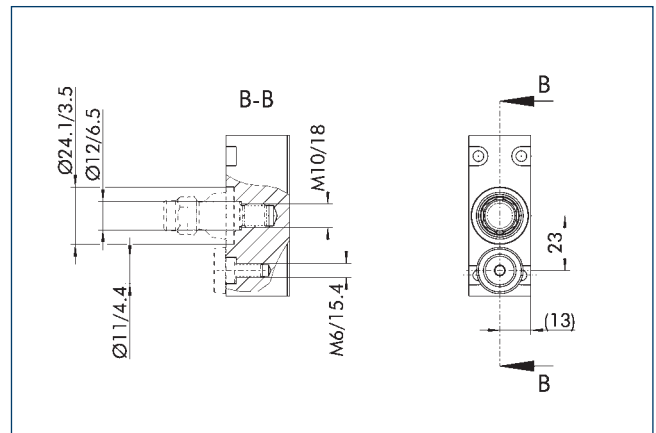
## Adapter plate J screw connection diagram



- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins
- ⑨⑩ Anti-rotation protection (only for the SWM-B -V adapter plate)
- ⑨① Mounting side SWA
- ⑨② Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

## Adapter plate design SWM-B

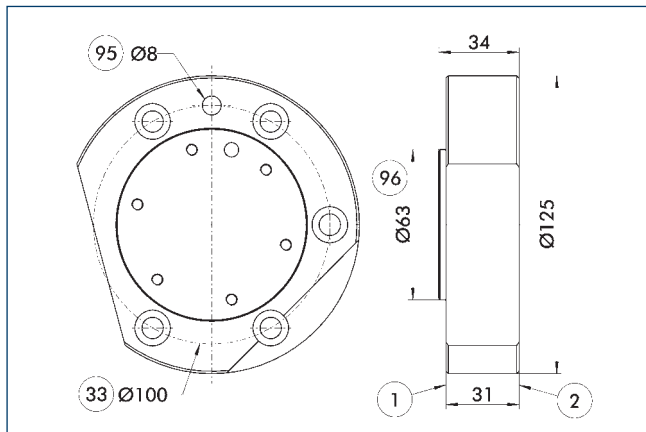


Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-040-SWM-B 085	1523817	SWA 040
A-SWA-040-SWM-B 085-V	1523846	SWA 040
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram



Adapter plate ISO-A100-R



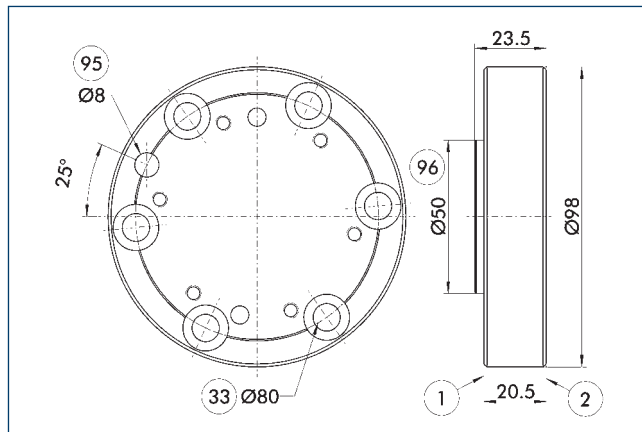
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-040-ISO-A100	0302204

- ① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A80-R



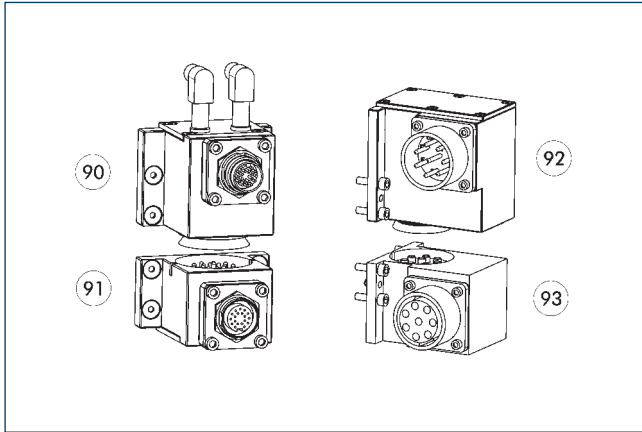
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-040-ISO-A80	0302203

- ① Adapter plate for quick change master without piston stroke control

## Electric feed-through module



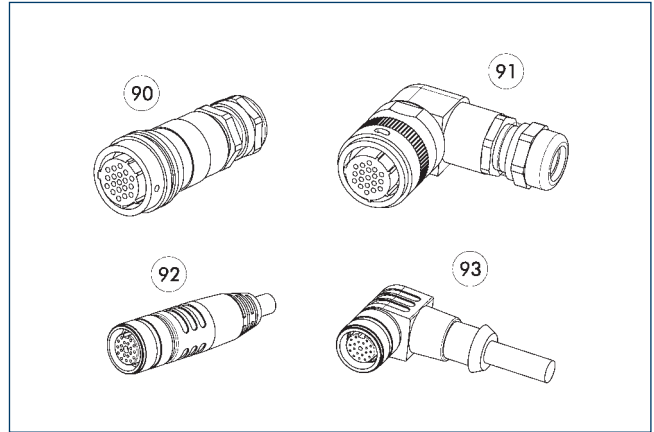
- ⑨⑩ Electric module with metric thread, robot-side
- ⑨① Electric module with metric thread, tool-side
- ⑨② Electric module with MIL-Spec thread, robot-side
- ⑨③ Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
<b>Feed-through module for communication on the robot side</b>		
SWO-RE5-K	9957444	
<b>Feed-through module for communication on the tool side</b>		
SWO-RE5-A	9957445	
<b>Feed-through module for power on the robot side</b>		
SWO-MT8-K	9937157	
<b>Feed-through module for power on the tool side</b>		
SWO-MT8-A	9937158	
<b>Feed-through module for signal on the robot side</b>		
SWO-G19-K	9940649	19
SWO-R19-K	9935815	19
SWO-R19W-K	9942041	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
<b>Feed-through module for signal on the tool side</b>		
SWO-G19-A	9940650	19
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

## Cable plug/cable extension



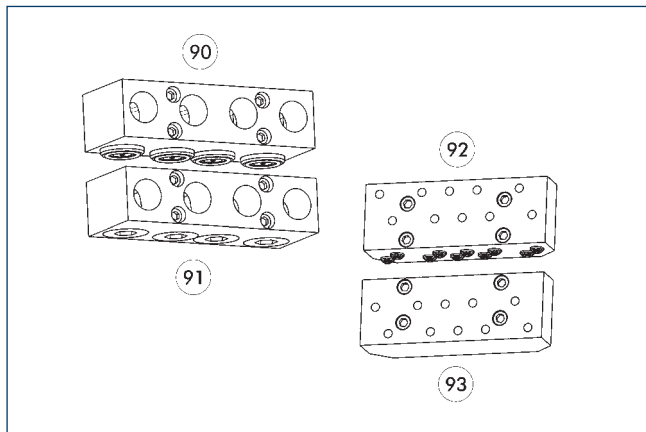
- ⑨⑩ Plug/socket straight
- ⑨① Connector/angled socket
- ⑨② Connector/straight socket with extension cable
- ⑨③ Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

**Pneumatic/ fluidic feed-through modules**



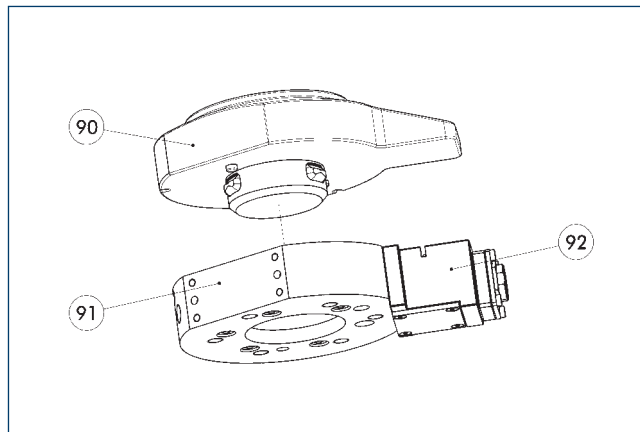
- ⑨⑩ Self-sealing fluid module, robot-side
- ⑨① Self-sealing fluid module, tool-side
- ⑨② Pneumatic module, robot-side
- ⑨③ Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
Feed-through module for liquids on the robot side		
SWO-FG2-K	9936817	2
Feed-through module for liquids on the tool side		
SWO-FG2-A	9936818	2
Feed-through module for pneumatics on the robot side		
SWO-P8M5-K	9872067	8
Feed-through module for pneumatics on the tool side		
SWO-P8M5-A	9872068	8

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

**Dust cover SWD-040**



- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

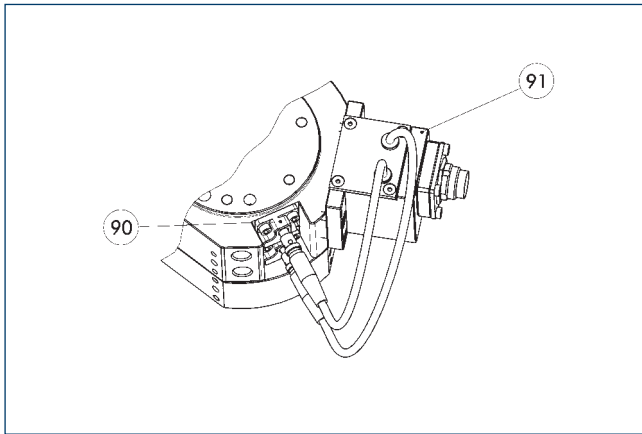
The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID	
Dust cover		
SWD-040-R00-000	0302254	

# SWS 040

Quick change system

## Assembly situation of the locking monitoring



90 AS-SWK 040Q

91 Optional electrical module with integrated sensor connection

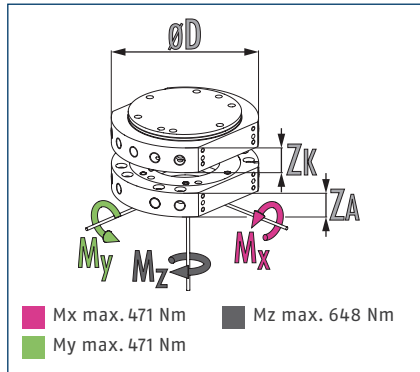
The drawing shows the quick-change system with integrated piston stroke monitoring and built-in proximity switch; this is directly connected to the electric modules.

Description	ID
Attachment kit for proximity switch	
AS-SWK-40Q/076 attachment kit including sensor	9955216

① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.



## Dimensions and maximum loads



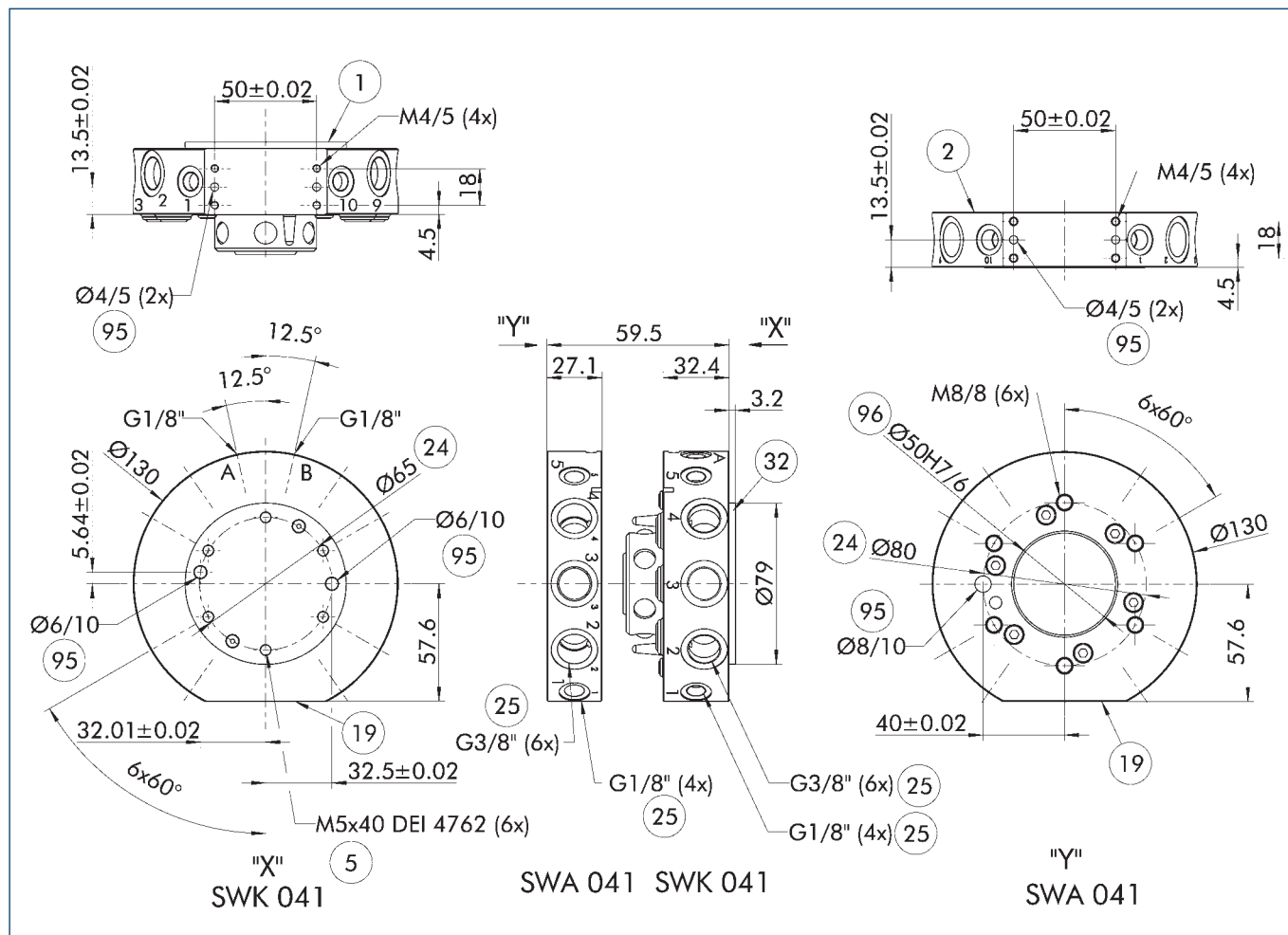
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-041-000-000	SWA-041-000-000
		Quick-change master	Quick-change adapter
ID		0302346	0302347
Recommended handling weight	[kg]	50	50
Piston stroke monitoring		optional	
Locking force	[N]	4500	4500
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	1.4	0.7
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		6x G3/8"	6x G3/8"
Air connection thread pneumatic feed-through		4x G1/8"	4x G1/8"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±2	±2
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	130 x 32.3	130 x 27
Screw connection diagram		J	J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

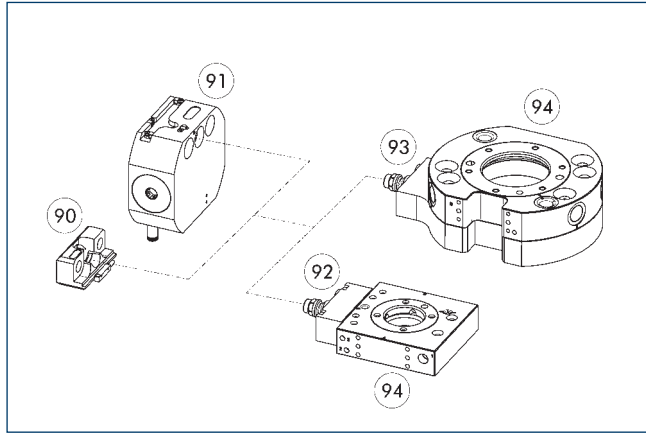
① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

# SWS 041

Quick change system

## Storage system SWM-B

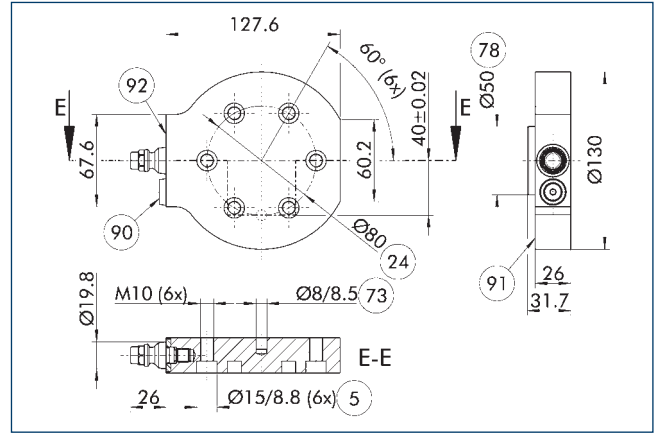


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	Suitable for
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

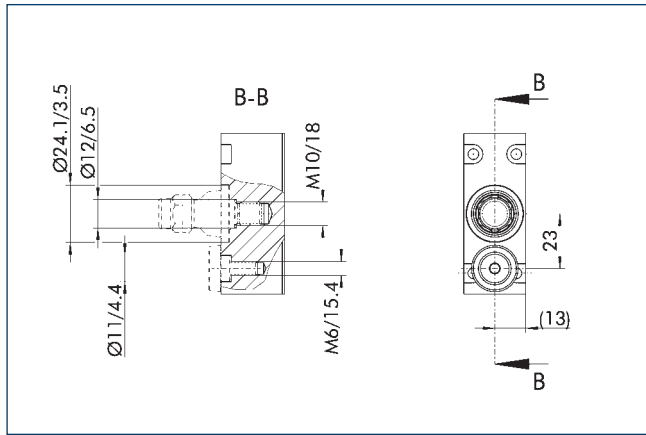
## Adapter plate SWA 041



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-041-SWM-B 085	1523819	SWA 041
A-SWA-041-SWM-B 085-V	1523860	SWA 041

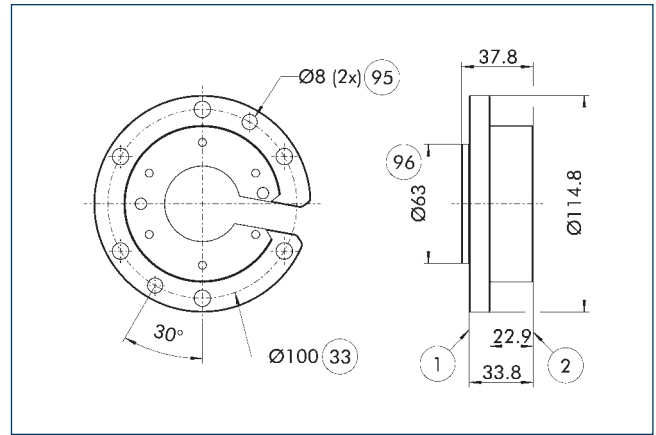
## Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-041-SWM-B 085	1523819	SWA 041
A-SWA-041-SWM-B 085-V	1523860	SWA 041

## Adapter plate ISO-A100-SIP-R



- 1 Robot-side connection
- 2 Tool-side connection
- 33 DIN ISO-9409 bolt circle
- 95 Fit for centering pins
- 96 Fit for centering

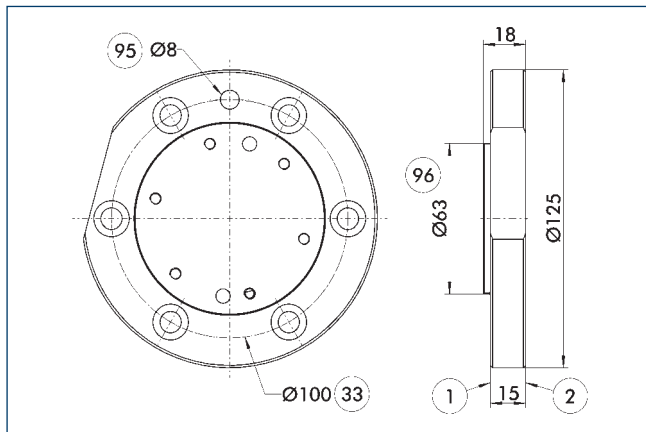
Robot side adapter plate

Description	ID	Suitable for
Robot side		
A-SWK-040/041-ISO-A100-SIP	0302232	

- 1 Adapter plate for quick change master with piston stroke control



Adapter plate ISO-A100-R



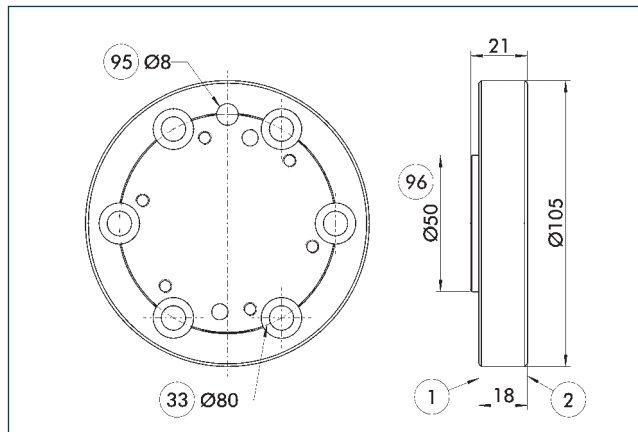
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-041-ISO-A100	0302206

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A80-R



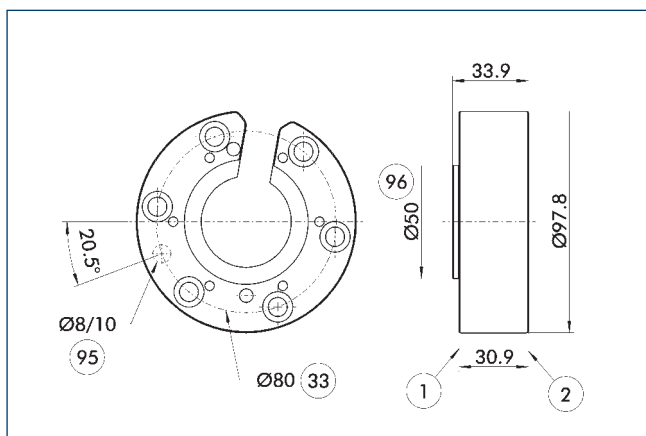
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-041-ISO-A80	0302205

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A80-SIP-R



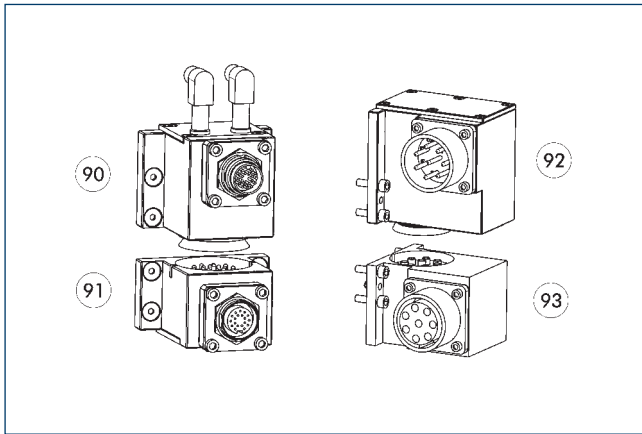
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-041-ISO-A80-SIP	0302235

① Adapter plate for quick change master with piston stroke control

## Electric feed-through module



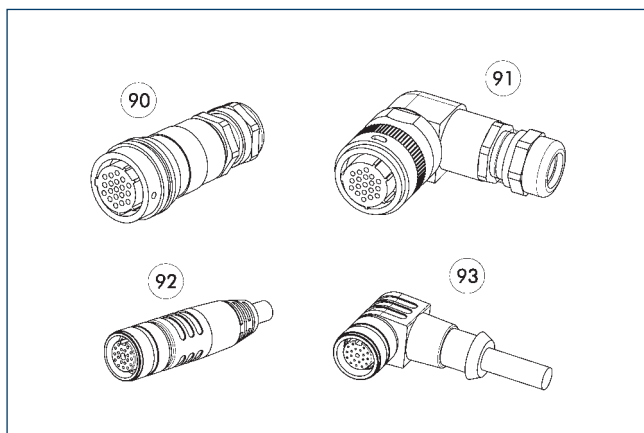
- ⑨⑩ Electric module with metric thread, robot-side
- ⑨① Electric module with metric thread, tool-side
- ⑨② Electric module with MIL-Spec thread, robot-side
- ⑨③ Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SW0-RE5-K	9957444	
Feed-through module for communication on the tool side		
SW0-RE5-A	9957445	
Feed-through module for power on the robot side		
SW0-MT8-K	9937157	
Feed-through module for power on the tool side		
SW0-MT8-A	9937158	
Feed-through module for signal on the robot side		
SW0-G19-K	9940649	19
SW0-R19-K	9935815	19
SW0-R19W-K	9942041	15
SW0-R26-K	9935819	26
SW0-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SW0-G19-A	9940650	19
SW0-R19-A	9935816	19
SW0-R26-A	9935820	26
SW0-RF19-A	9948657	19

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SW0" or visit our website.

## Cable plug/cable extension



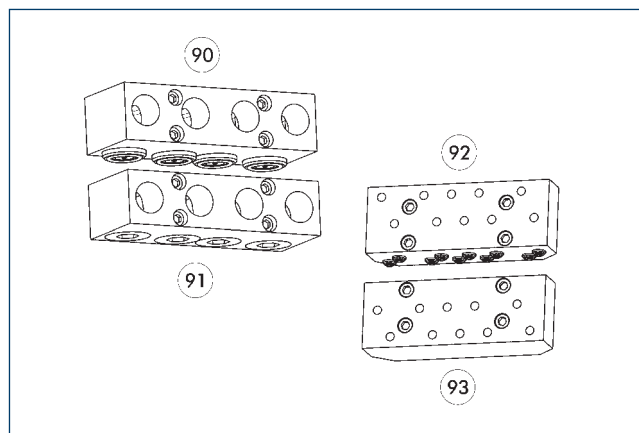
- 90 Plug/socket straight  
 91 Connector/angled socket  
 92 Connector/straight socket with extension cable  
 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

## Pneumatic/ fluidic feed-through modules



- 90 Self-sealing fluid module, robot-side  
 91 Self-sealing fluid module, tool-side  
 92 Pneumatic module, robot-side  
 93 Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

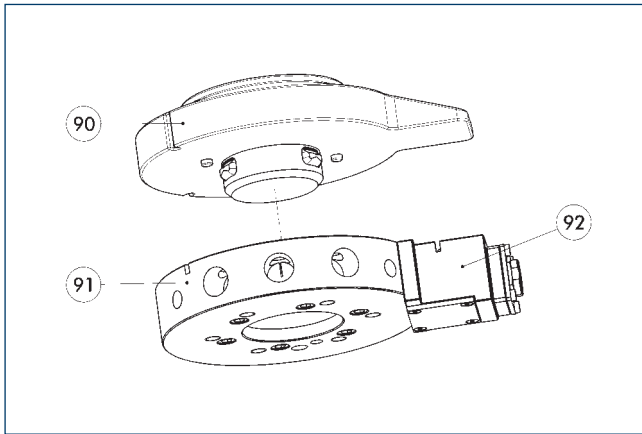
Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SWO-FG2-K	9936817	2
<b>Feed-through module for liquids on the tool side</b>		
SWO-FG2-A	9936818	2
<b>Feed-through module for pneumatics on the robot side</b>		
SWO-P8M5-K	9872067	8
<b>Feed-through module for pneumatics on the tool side</b>		
SWO-P8M5-A	9872068	8

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

# SWS 041

Quick change system

## Dust cover SWD-041

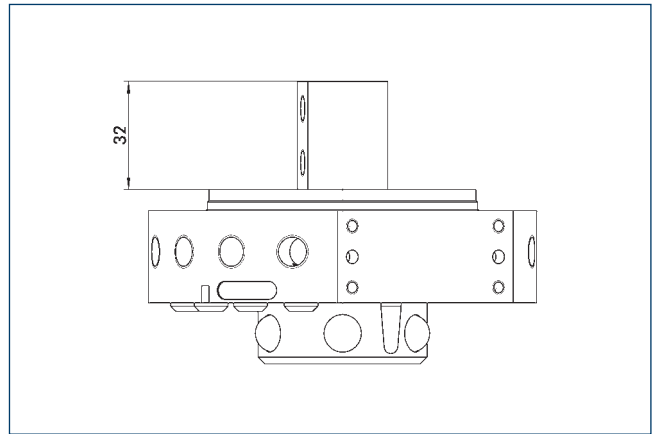


- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
Dust cover	
SWD-041-R00-000	0302255

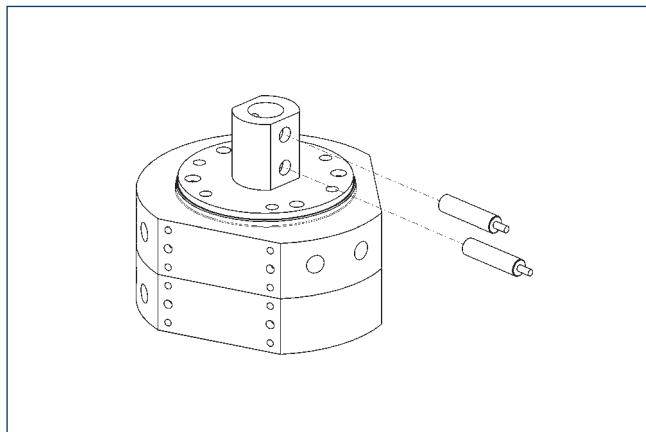
## Piston stroke control



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID
Piston stroke control	
SWK-041-SIP	0302348

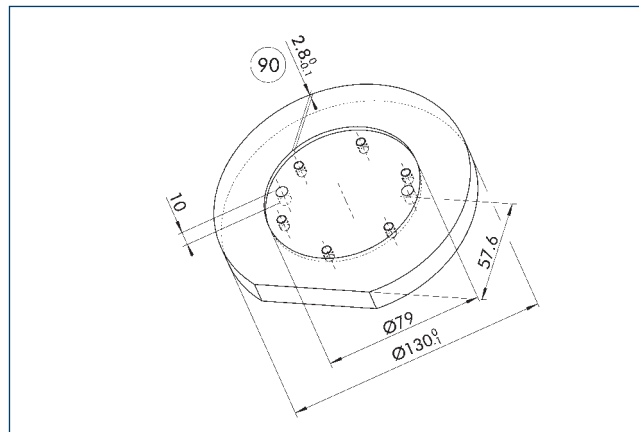
## Piston stroke control



Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
<b>Clip for connector/socket</b>		
CLI-M12	0301464	
CLI-M8	0301463	
<b>Cable extension</b>		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
<b>Sensor distributor</b>		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

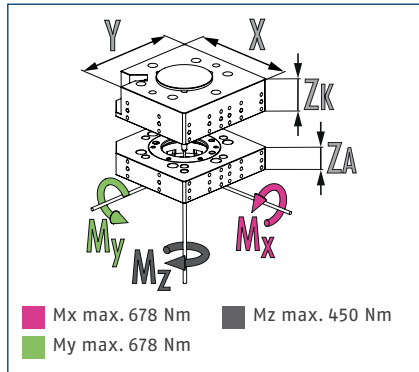
## Adapter plate design



⑨ Recommended adapter plate depth

Recommendation for the design of the adapter plate.

## Dimensions and maximum loads



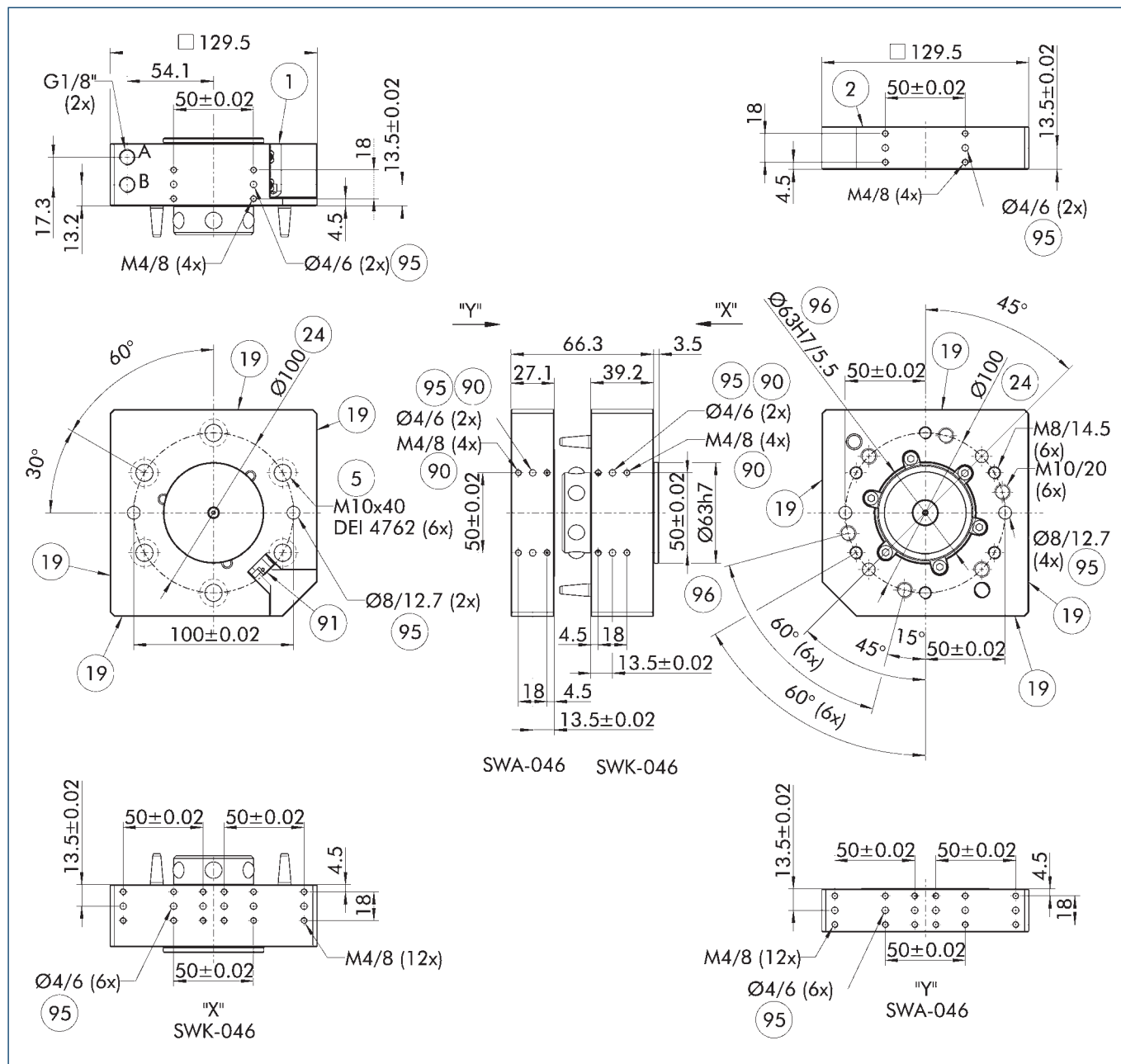
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-046-0-0-000-0-SM	SWA-046-0-0-000-0
		Quick-change master	Quick-change adapter
ID		1330577	1315663
Recommended handling weight	[kg]	50	50
Piston stroke monitoring		integrated	
Locking force	[N]	5800	5800
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	1.95	1.03
Max. distance when locking	[mm]	2.5	2.5
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±1.5	±1.5
Max. permissible angular offset	[°]	±2	±2
Robot-side connection		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions X x Y x Z*	[mm]	129.5 x 129.5 x 39.1	129.5 x 129.5 x 27
Screw connection diagram		5 x J	5 x J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

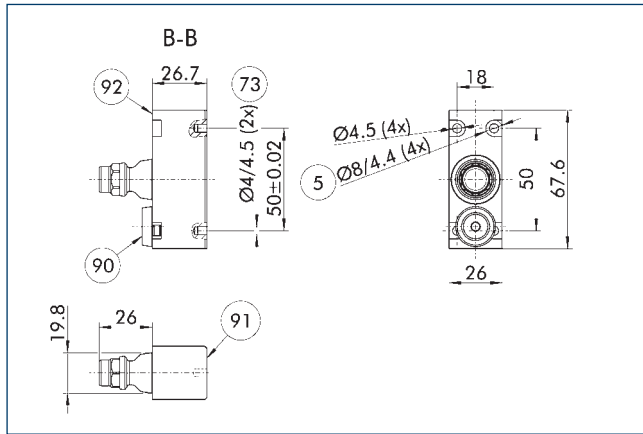
Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑳ Connection for electric feed-through
- ㉔ Bolt circle
- ⑨⑩ on both sides
- ⑨① Sensor connections for the lock monitoring
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

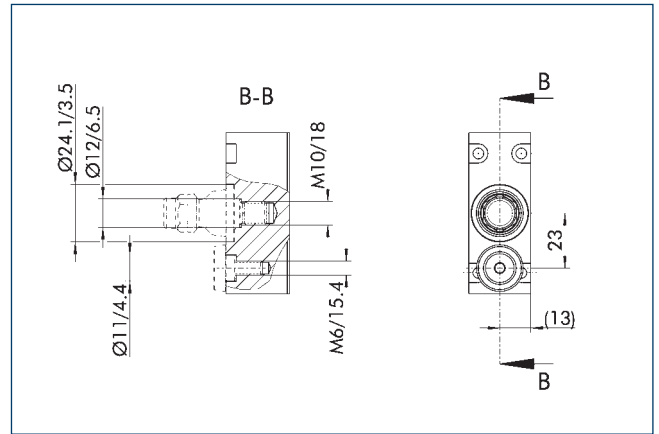
## Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

## Adapter plate design SWM-B

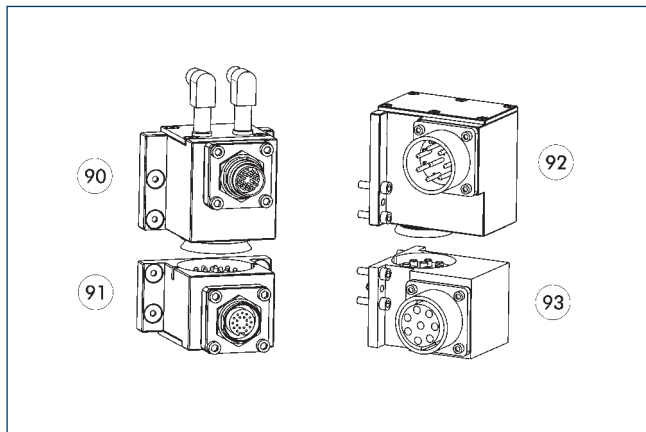


Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram



**Electric feed-through module**



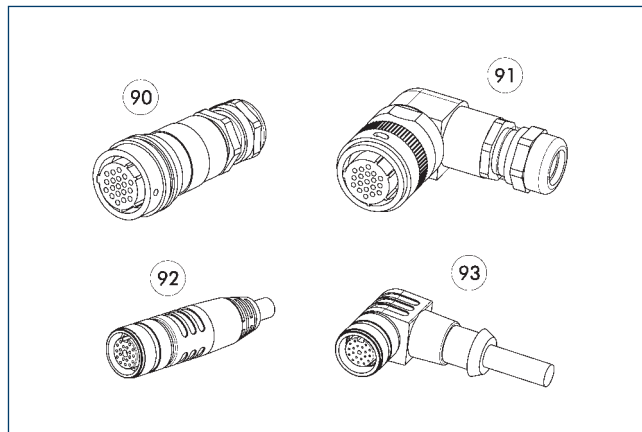
- 90 Electric module with metric thread, robot-side
- 91 Electric module with metric thread, tool-side
- 92 Electric module with MIL-Spec thread, robot-side
- 93 Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
<b>Feed-through module for communication on the robot side</b>		
SWO-RE5-K	9957444	
<b>Feed-through module for communication on the tool side</b>		
SWO-RE5-A	9957445	
<b>Feed-through module for power on the robot side</b>		
SWO-MT8-K	9937157	
<b>Feed-through module for power on the tool side</b>		
SWO-MT8-A	9937158	
<b>Feed-through module for signal on the robot side</b>		
SWO-G19-K	9940649	19
SWO-R19-K	9935815	19
SWO-R19W-K	9942041	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
<b>Feed-through module for signal on the tool side</b>		
SWO-G19-A	9940650	19
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

**Cable plug/cable extension**



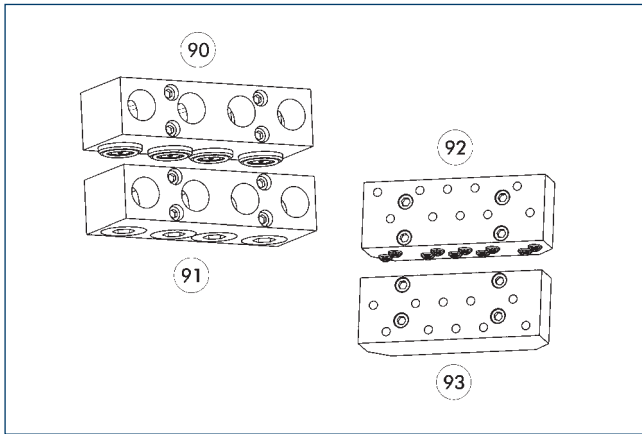
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-08G-K-90	0301270	
KAS-19B-K-90-C	0301294	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-08G-A-90	0301271	
KAS-19B-A-90-C	0301295	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

## Pneumatic/ fluidic feed-through modules



- ⑨⑩ Self-sealing fluid module, robot-side
- ⑨① Self-sealing fluid module, tool-side
- ⑨② Pneumatic module, robot-side
- ⑨③ Pneumatic module, tool-side

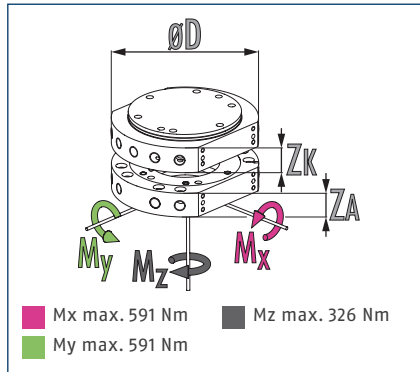
Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
Feed-through module for liquids on the robot side		
SWO-FG2-K	9936817	2
Feed-through module for liquids on the tool side		
SWO-FG2-A	9936818	2
Feed-through module for pneumatics on the robot side		
SWO-P8M5-K	9872067	8
Feed-through module for pneumatics on the tool side		
SWO-P8M5-A	9872068	8

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.



## Dimensions and maximum loads



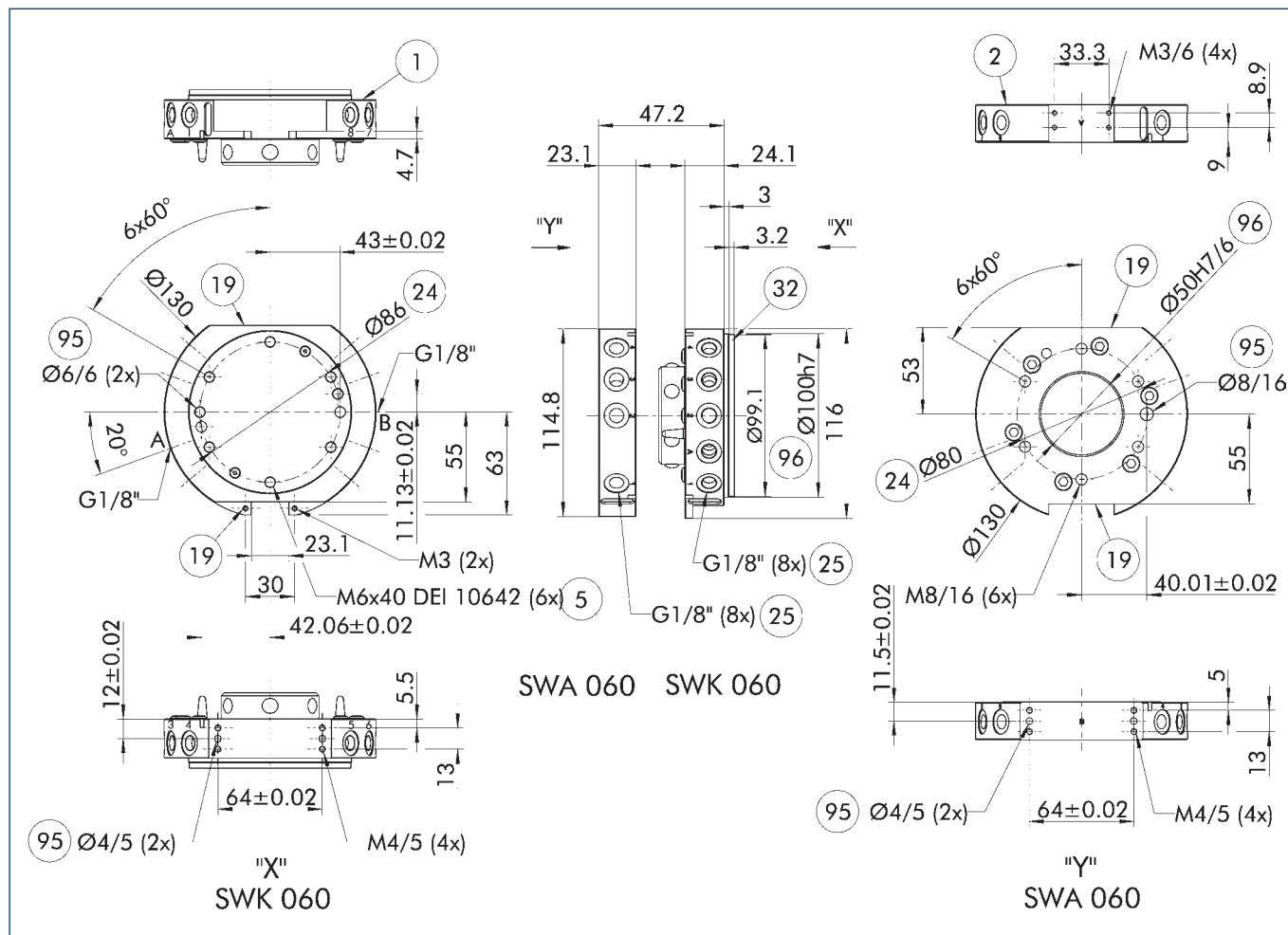
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-060-000-000	SWA-060-000-000
		Quick-change master	Quick-change adapter
ID		0302362	0302363
Recommended handling weight	[kg]	75	75
Piston stroke monitoring		optional	
Locking force	[N]	7400	7400
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	1.3	0.7
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		8x G1/8"	8x G1/8"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±1	±1
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	130 x 24.1	130 x 23.1
Screw connection diagram		K side S/J via adapter plate side B	K side S/J via adapter plate side B

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view

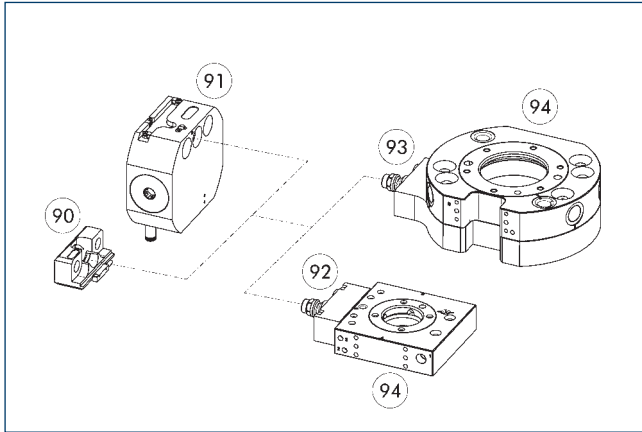


The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

## Storage system SWM-B

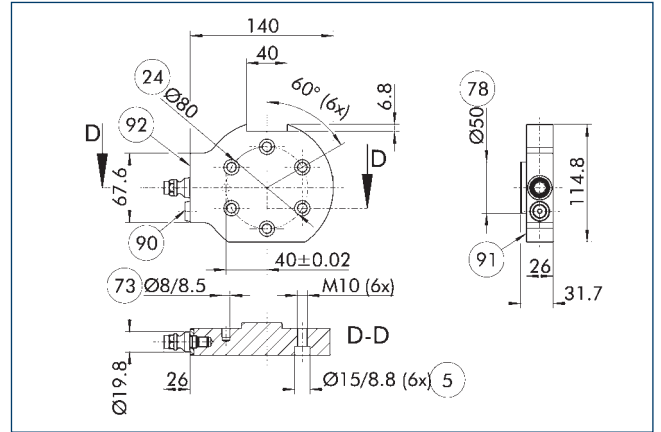


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

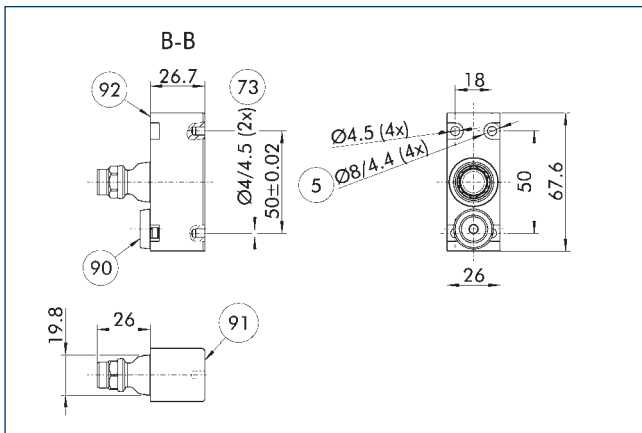
## Adapter plate SWA 060



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-060-SWM-B 085	1523828	SWA 060
A-SWA-060-SWM-B 085-V	1523862	SWA 060

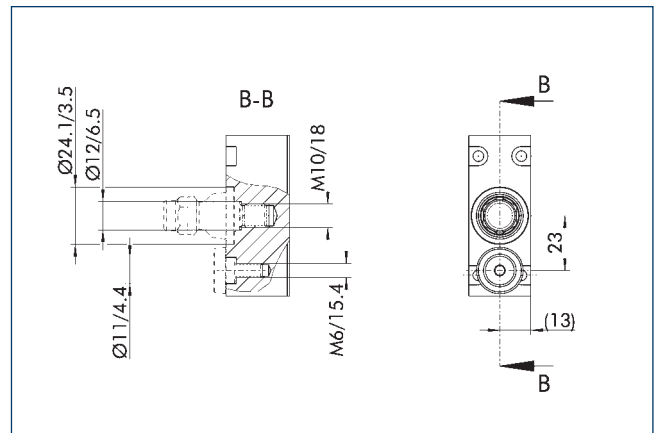
## Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

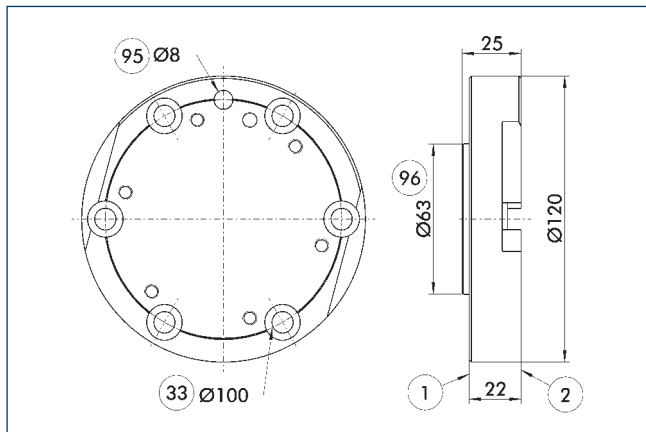
## Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-060-SWM-B 085	1523828	SWA 060
A-SWA-060-SWM-B 085-V	1523862	SWA 060
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

Adapter plate ISO-A100-R



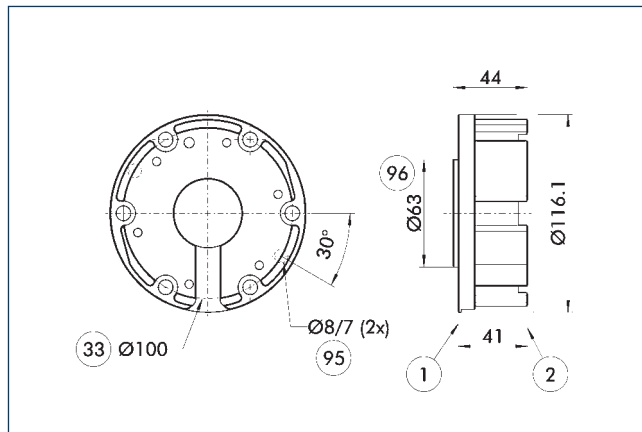
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-060/062-ISO-A100	0302208

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A100-SIP-R



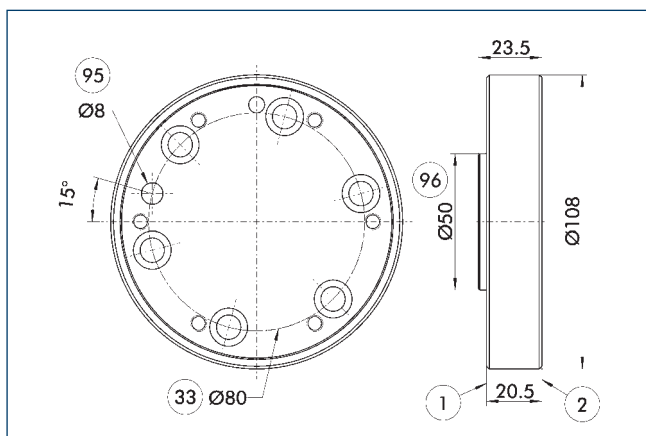
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-060/062-ISO-A100-SIP	0302236

① Adapter plate for quick change master with piston stroke control

Adapter plate ISO-A80-R



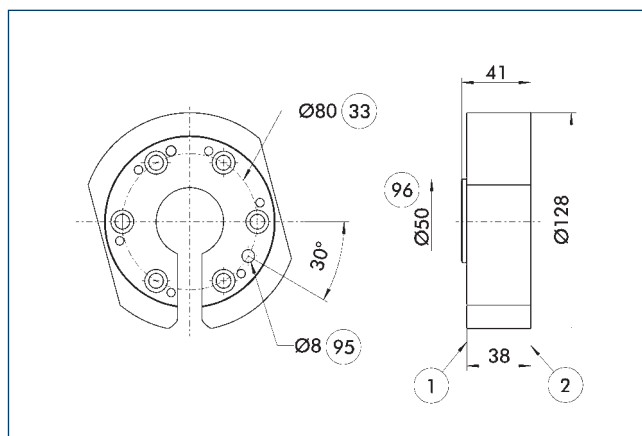
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-060/062-ISO-A80	0302207

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A80-SIP-R



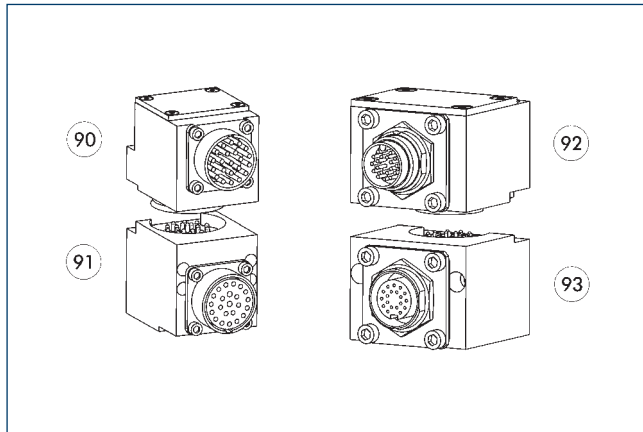
- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-060/062-ISO-A80-SIP	0302237

① Adapter plate for quick change master with piston stroke control

## Electric feed-through module



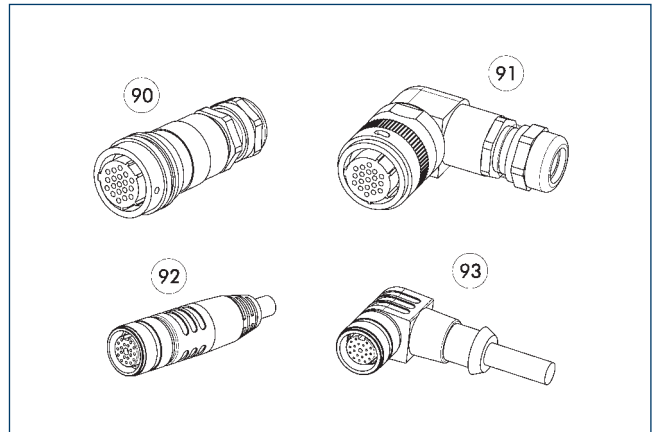
- ⑨⑩ Electric module with bayonet fitting, robot-side
- ⑨① Electric module with bayonet fitting, tool-side
- ⑨② Electric module with metric thread, robot-side
- ⑨③ Electric module with metric thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
<b>Feed-through module for communication on the robot side</b>		
SWO-KE7-K	9960993	
<b>Feed-through module for communication on the tool side</b>		
SWO-KE7-A	9960994	
<b>Feed-through module for signal on the robot side</b>		
SWO-K12-K	9948701	12
SWO-K19-K	9937328	19
SWO-K19W-K	9949316	15
SWO-K26-K	9937798	26
SWO-KF19-K	9959886	19
<b>Feed-through module for signal on the tool side</b>		
SWO-K12-A	9948702	12
SWO-K19-A	9937329	19
SWO-K26-A	9937799	26
SWO-KF19-A	9959887	19

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

## Cable plug/cable extension



- ⑨⑩ Plug/socket straight
- ⑨① Connector/angled socket
- ⑨② Connector/straight socket with extension cable
- ⑨③ Connector/angled socket with extension cable

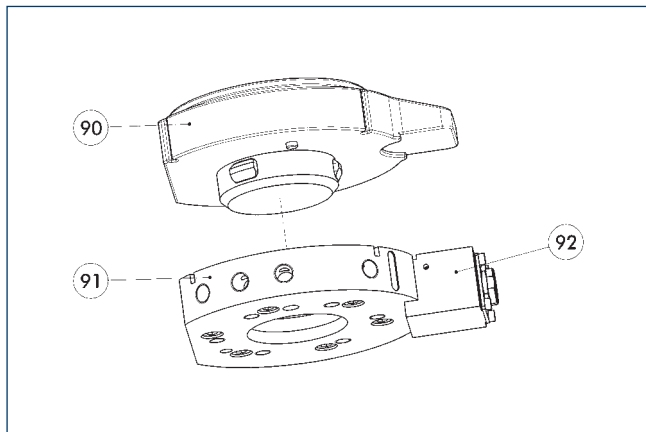
Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.



Dust cover SWD-060

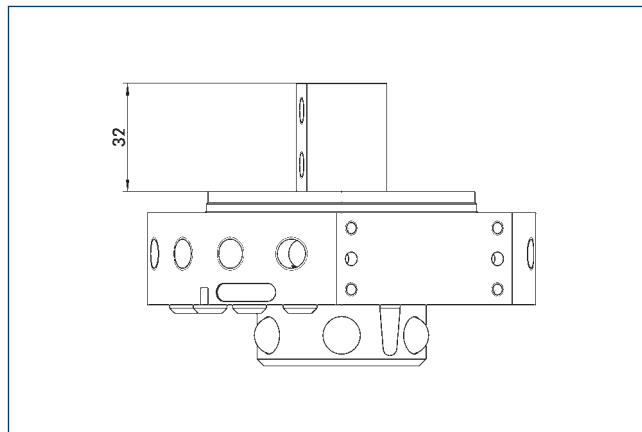


- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
Dust cover	
SWD-060-K00-000	0302256

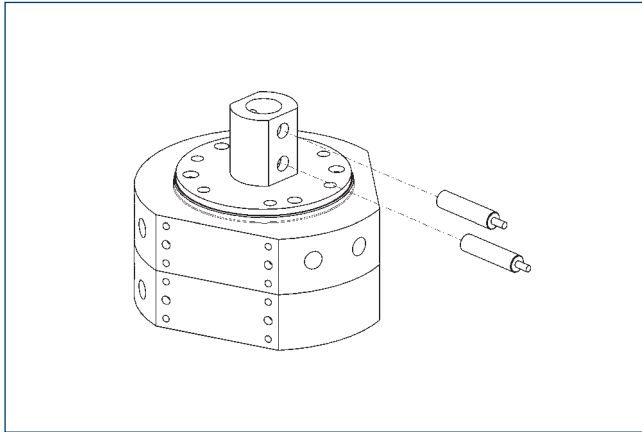
Piston stroke control



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID
Piston stroke control	
SWK-060-SIP	0302365

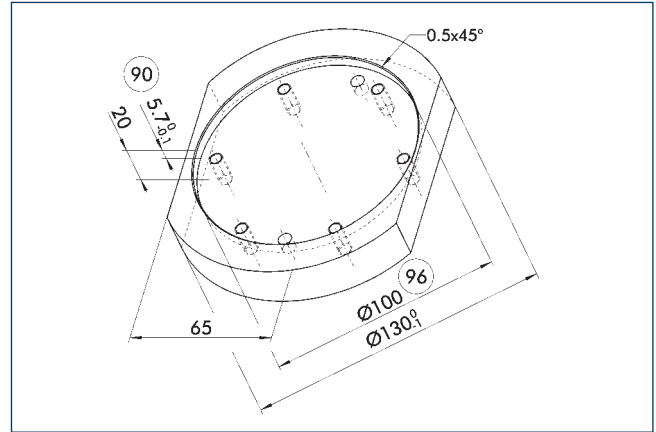
## Piston stroke control



Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
<b>Clip for connector/socket</b>		
CLI-M12	0301464	
CLI-M8	0301463	
<b>Cable extension</b>		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
<b>Sensor distributor</b>		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

## Adapter plate design

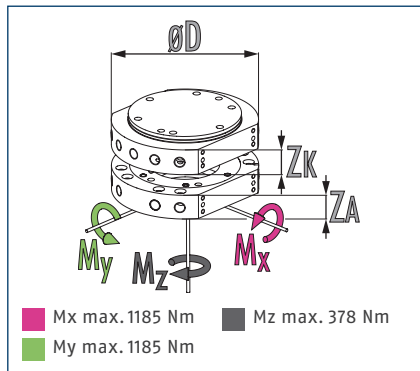


⑨ Recommended adapter plate      ⑨ Fit for centering depth

Recommendation for the design of the adapter plate.



## Dimensions and maximum loads



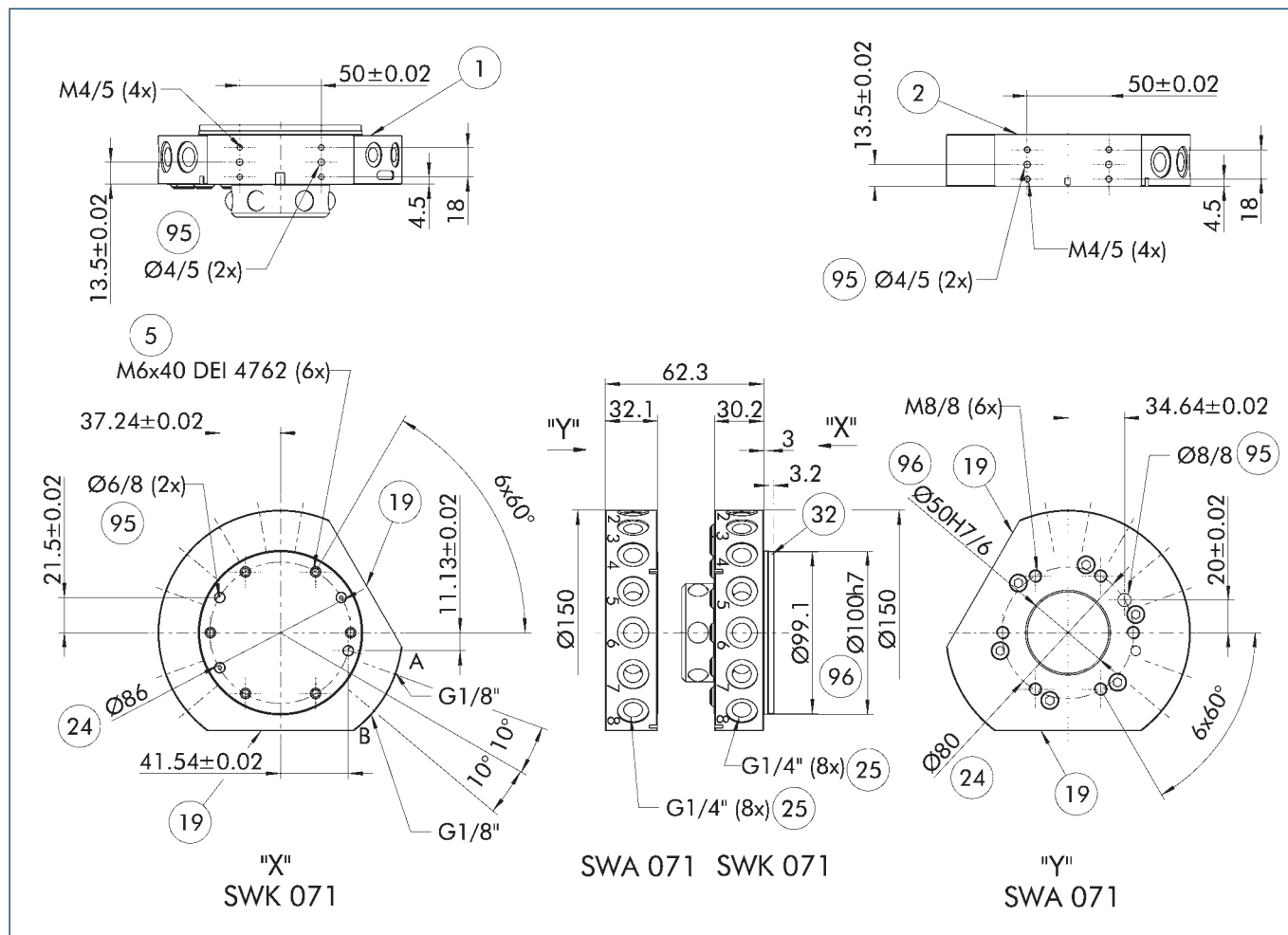
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-071-000-000	SWA-071-000-000
		Quick-change master	Quick-change adapter
ID		0302370	0302371
Recommended handling weight	[kg]	79	79
Piston stroke monitoring		optional	
Locking force	[N]	8100	8100
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	1.8	1.3
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		8x G1/4"	8x G1/4"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±1	±1
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions $\varnothing D \times Z^*$	[mm]	150 x 30.2	150 x 32.1
Screw connection diagram		2 x J	2 x J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

Main view

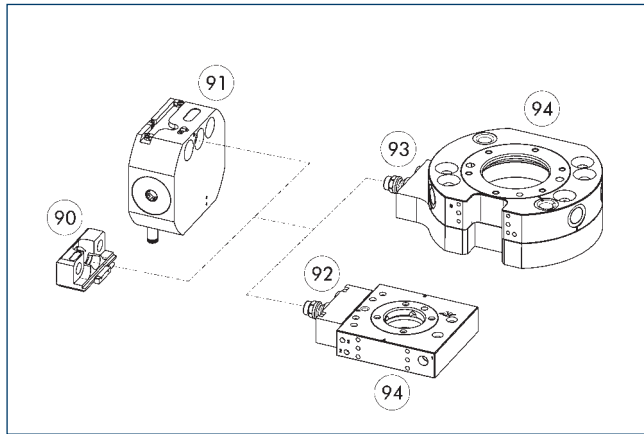


The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

① The robot-side plate mounted on the SWK is a cover for the piston chamber. It is essential that it is supported by the adapter plate. See the further product information for a note on how to design this adapter plate.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑭ Bolt circle
- ⑮ Pneumatic feed-throughs
- ⑯ Cover
- ⑰ Fit for centering pins
- ⑱ Fit for centering

### Storage system SWM-B

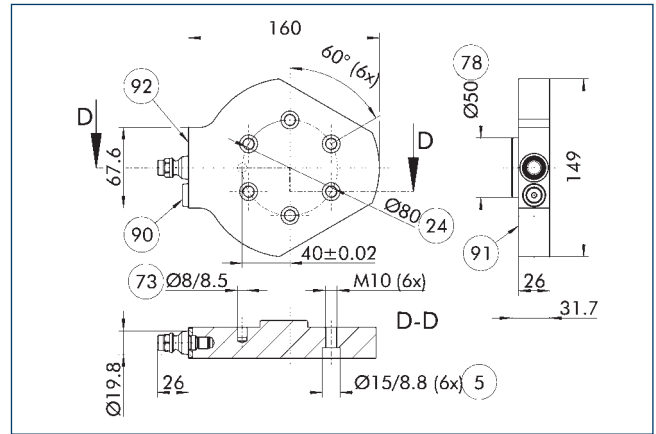


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

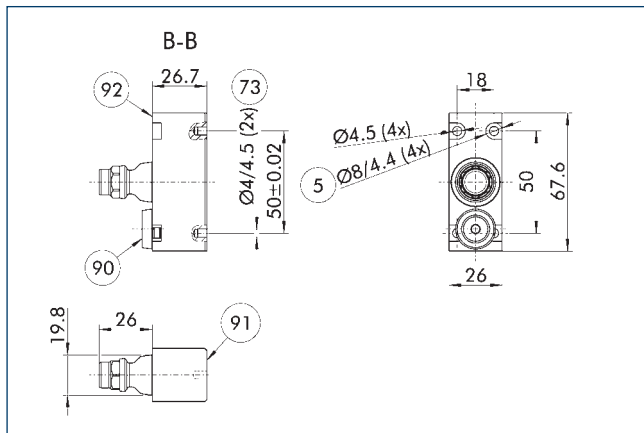
### Adapter plate SWA 071



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-071-SWM-B 085	1523830	SWA 071
A-SWA-071-SWM-B 085-V	1523865	SWA 071

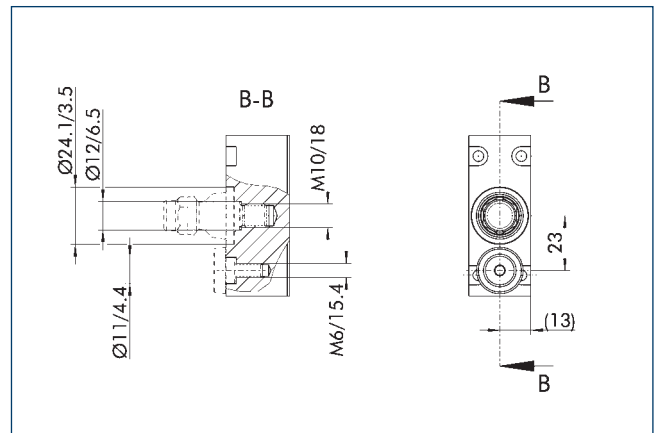
### Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

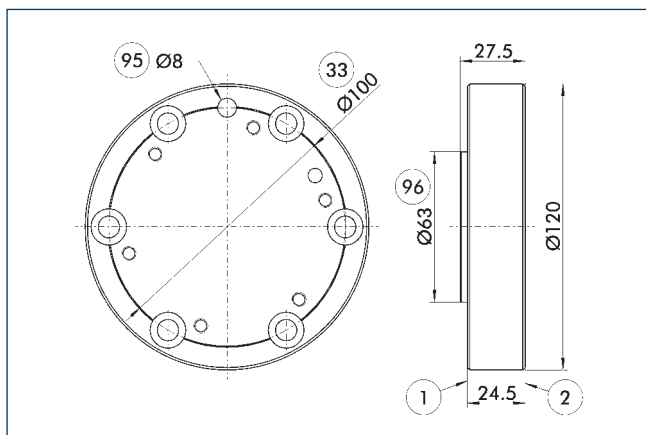
### Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-071-SWM-B 085	1523830	SWA 071
A-SWA-071-SWM-B 085-V	1523865	SWA 071
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

Adapter plate ISO-A100-R



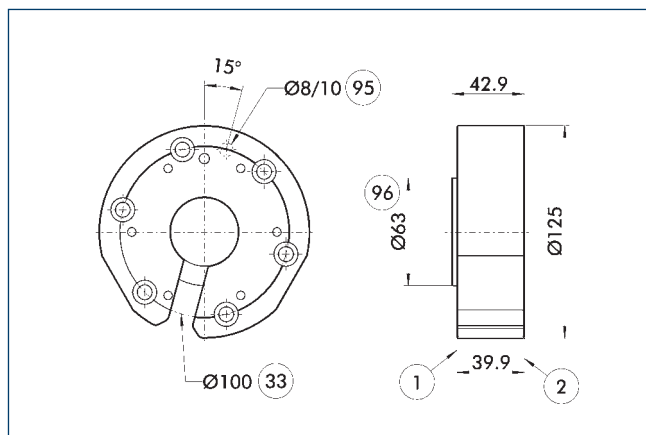
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨5 Fit for centering pins
- ⑨6 Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-071-ISO-A100	0321555	

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A100-SIP-R



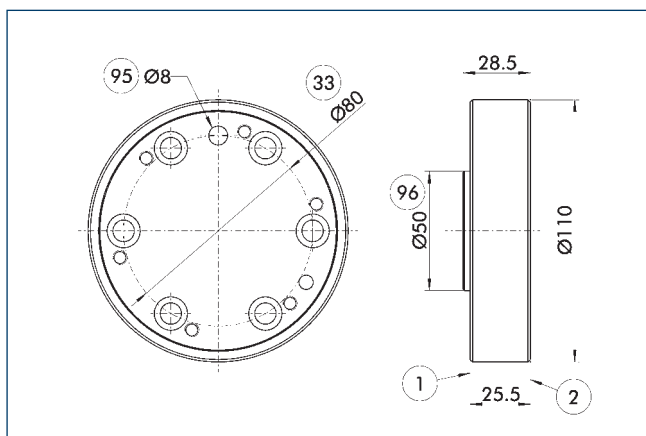
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨5 Fit for centering pins
- ⑨6 Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-071-ISO-A100-SIP	0302238	

① Adapter plate for quick change master with piston stroke control

Adapter plate ISO-A80-R



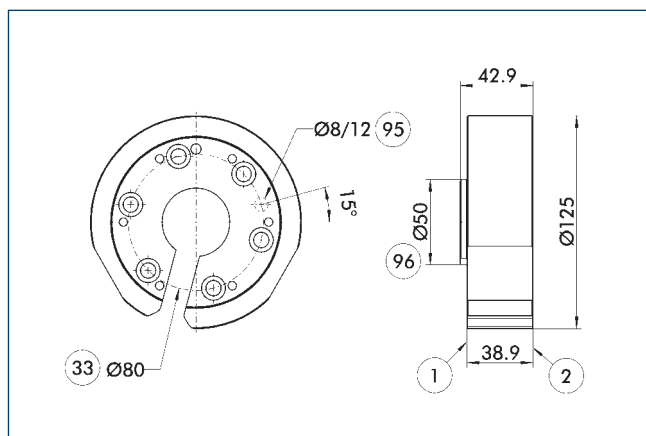
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨5 Fit for centering pins
- ⑨6 Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-071-ISO-A80	0321554	

① Adapter plate for quick change master without piston stroke control

Adapter plate ISO-A80-SIP-R



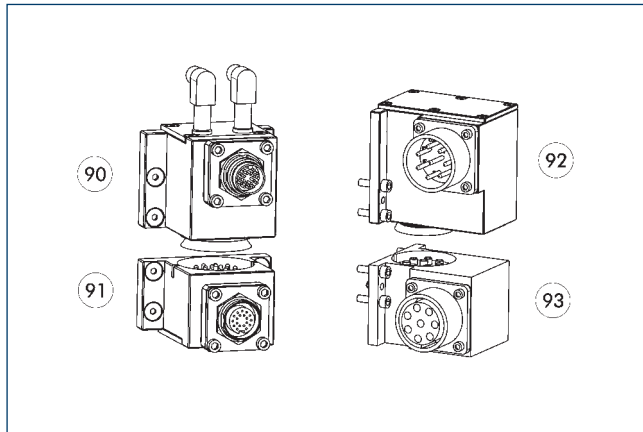
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨5 Fit for centering pins
- ⑨6 Fit for centering

Robot side adapter plate

Description	ID	
Robot side		
A-SWK-071-ISO-A80-SIP	0302239	

① Adapter plate for quick change master with piston stroke control

## Electric feed-through module



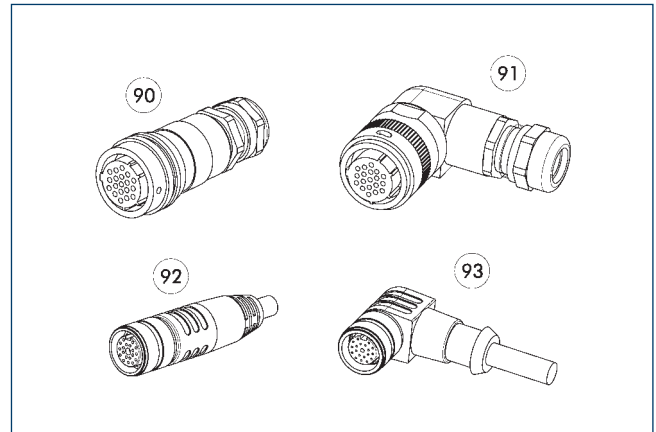
- 90 Electric module with metric thread, robot-side
- 91 Electric module with metric thread, tool-side
- 92 Electric module with MIL-Spec thread, robot-side
- 93 Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-RE5-K	9957444	
Feed-through module for communication on the tool side		
SWO-RE5-A	9957445	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-G19-K	9940649	19
SWO-R19-K	9935815	19
SWO-R19W-K	9942041	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SWO-G19-A	9940650	19
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

## Cable plug/cable extension



- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

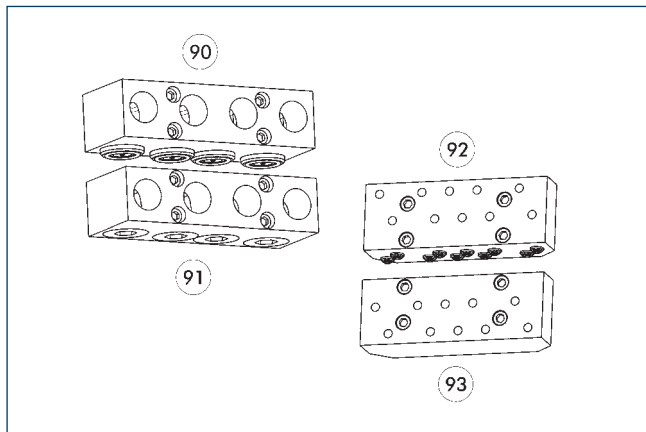
Other cable lengths on request.

Description	ID	Length [m]
Angled cable connector, robot-side		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
Angled cable connector, tool-side		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
Angled cable connector with cable, robot-side		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
Angled cable connector with cable, tool-side		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
Straight cable connector, robot-side		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
Straight cable connector, tool-side		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
Straight cable connector with cable, robot-side		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
Straight cable connector with cable, tool-side		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.



**Pneumatic/ fluidic feed-through modules**



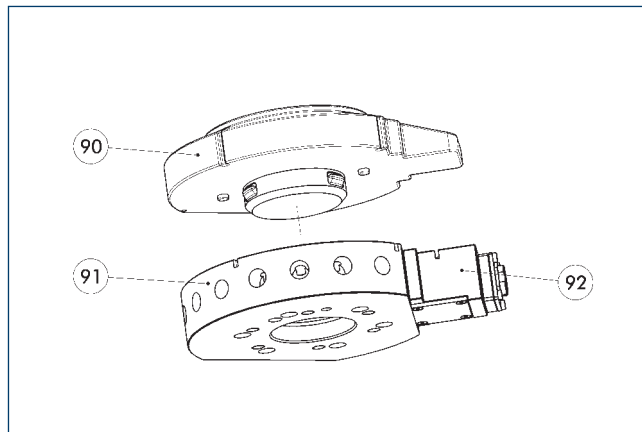
- ⑨⑩ Self-sealing fluid module, robot-side
- ⑨① Self-sealing fluid module, tool-side
- ⑨② Pneumatic module, robot-side
- ⑨③ Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
Feed-through module for liquids on the robot side		
SWO-FG2-K	9936817	2
Feed-through module for liquids on the tool side		
SWO-FG2-A	9936818	2
Feed-through module for pneumatics on the robot side		
SWO-P8M5-K	9872067	8
Feed-through module for pneumatics on the tool side		
SWO-P8M5-A	9872068	8

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

**Dust cover SWD-071**

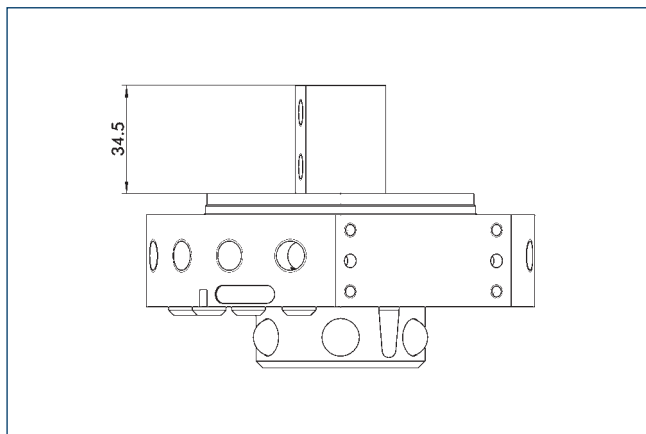


- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID	
Dust cover		
SWD-071-R00-000	0302257	

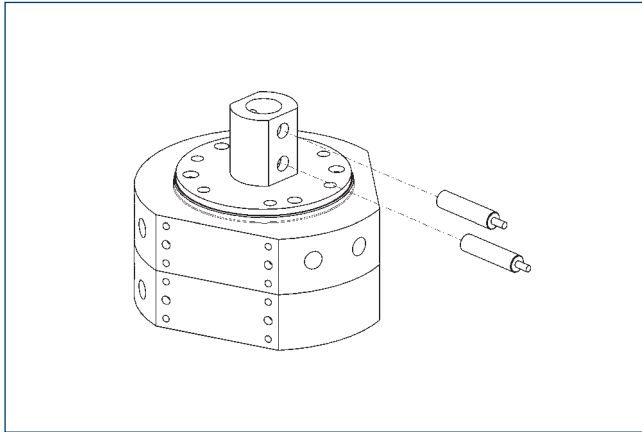
**Piston stroke control**



The drawing shows the minimal height of the adapter plate for installing a piston stroke control.

Description	ID	
Piston stroke control		
SWK-071-SIP	0302375	

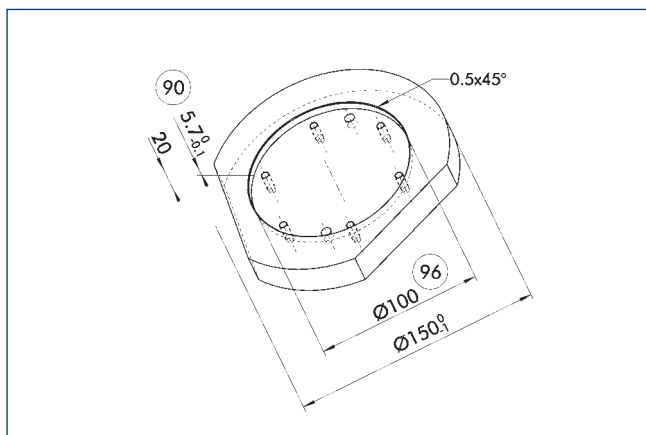
### Piston stroke control



Description	ID	Often combined
<b>Inductive proximity switches</b>		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
<b>Connection cables</b>		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
<b>Clip for connector/socket</b>		
CLI-M12	0301464	
CLI-M8	0301463	
<b>Cable extension</b>		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
<b>Sensor distributor</b>		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Per unit two sensors (closer/S) are required for each unit, as well as extension cables on option. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

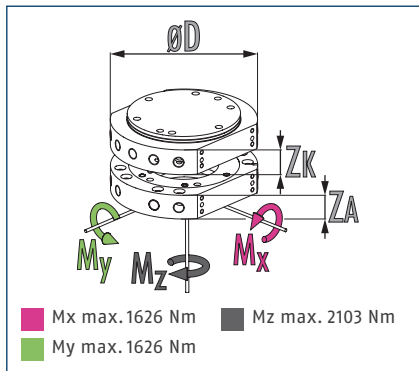
Adapter plate design



- $\textcircled{90}$  Recommended adapter plate depth
- $\textcircled{96}$  Fit for centering depth

Recommendation for the design of the adapter plate.

## Dimensions and maximum loads



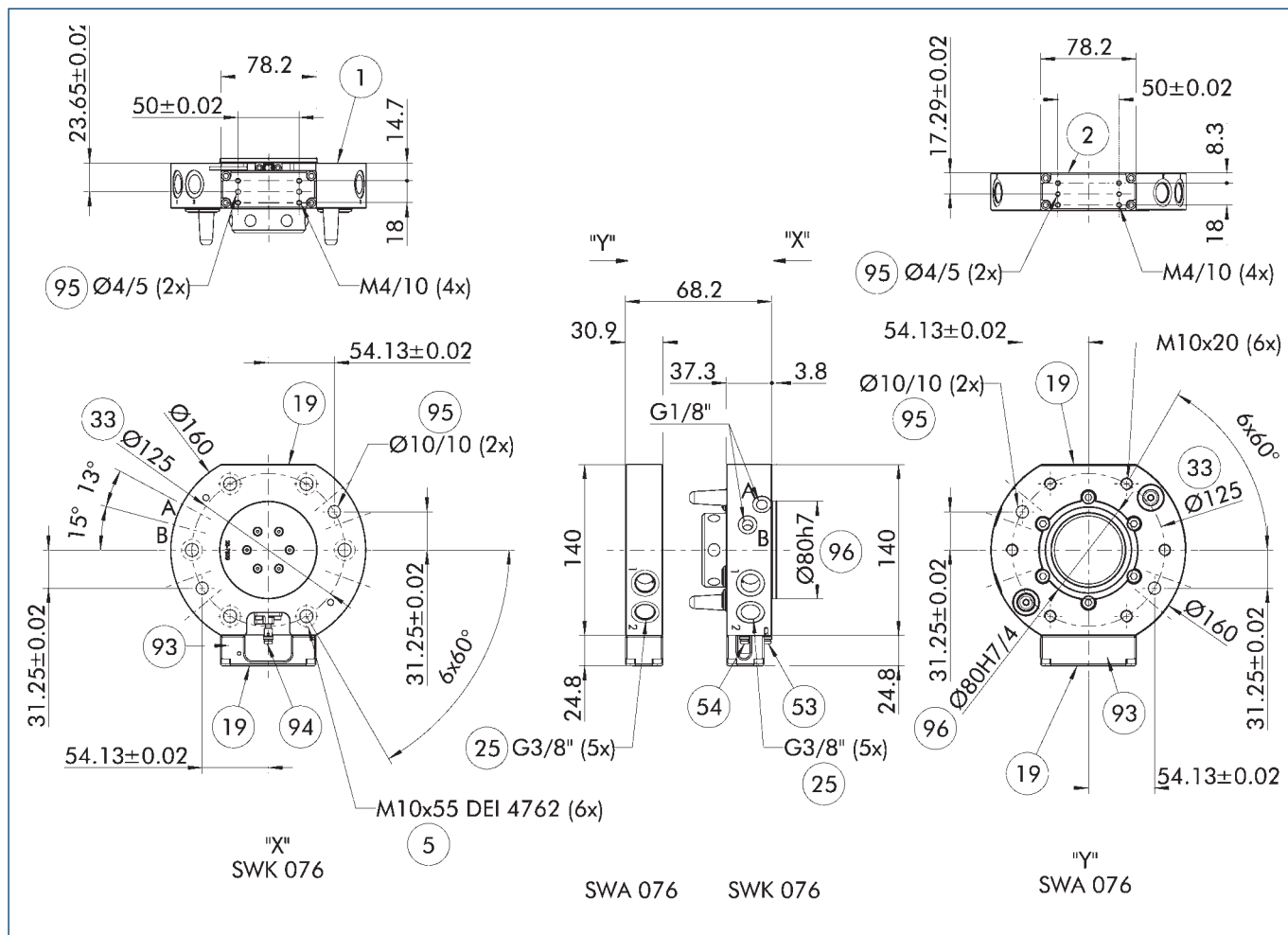
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-076-000-000-SG	SWA-076-000-000
		Quick-change master	Quick-change adapter
ID		0302392	0302391
Recommended handling weight	[kg]	100	100
Piston stroke monitoring		integrated	
Locking force	[N]	12000	12000
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	2.25	1.43
Max. distance when locking	[mm]	2	2
Air connection thread pneumatic feed-through		5x G3/8"	5x G3/8"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±1	±1
Max. permissible angular offset	[°]	±1	±1
Robot-side connection		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions $\varnothing D \times Z^*$	[mm]	160 x 37.3	160 x 30.9
Screw connection diagram		2 x J	2 x J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

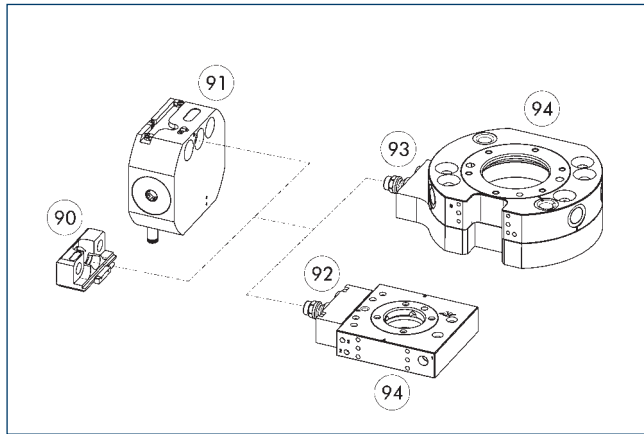
Main view



The drawing shows the basic design of the quick-change system with an integrated electric feed-through without dimensional consideration of the options described below.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑬ Mounting surface for options
- ⑮ Pneumatic feed-throughs
- ③③ DIN ISO-9409 bolt circle
- ⑤③ Monitoring Position unlocked
- ⑤④ Monitoring Position locked
- ⑨③ Optional distance adapter included in the scope of delivery
- ⑨④ Optional proximity switch
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

## Storage system SWM-B

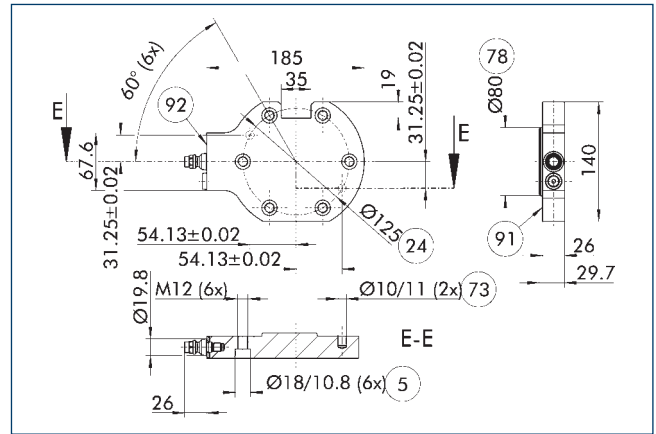


- 90 SWM-B 085
- 91 SWM-B 085-V
- 92 Side plate
- 93 Intermediate plate
- 94 Quick-change adapter SWA

Storage system with (-V) and without locking for safe tool storage. Detailed information and further accessories can be found in the catalog chapter "SWM-B" and "SWM."

Description	ID	
Storage system		
SWM-B 085	1459339	
SWM-B 085-V	1442590	

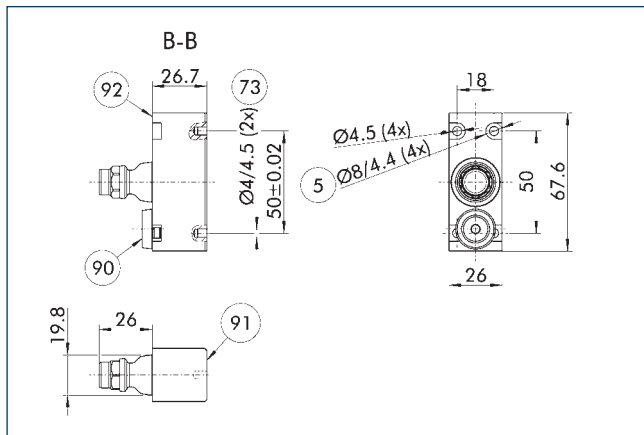
## Adapter plate SWA 076



- 5 Through hole for connection with screws
- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-076-SWM-B 085	1523831	SWA 076
A-SWA-076-SWM-B 085-V	1523869	SWA 076

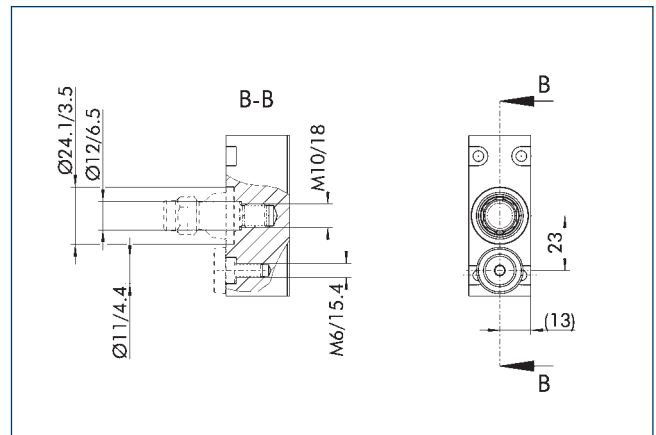
## Adapter plate J screw connection diagram



- 5 Through hole for connection with screws
- 73 Fit for centering pins
- 90 Anti-rotation protection (only for the SWM-B -V adapter plate)
- 91 Mounting side SWA
- 92 Attachment side SWM-B (-V)

Description	ID	Suitable for
Adapter plates		
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

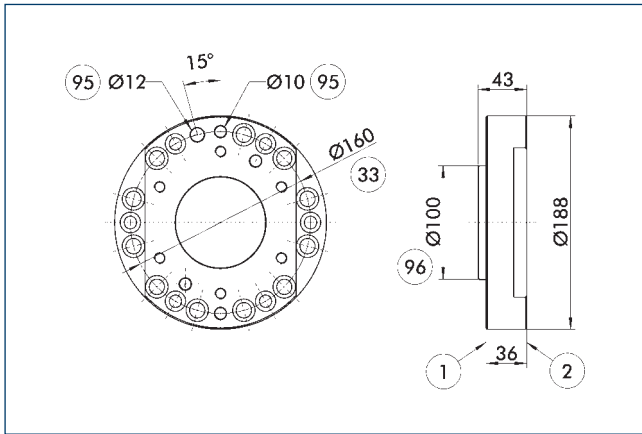
## Adapter plate design SWM-B



Instead of using a standard adapter plate, the storage pin and anti-twist protection can also be attached to a customized adapter plate. For error-free function, all dimensions according to the drawing must be taken into account, in particular the distances between the anti-twist protections to the storage pin. The drawing is also valid for all the standard plates listed below.

Description	ID	Suitable for
Adapter plates		
A-SWA-076-SWM-B 085	1523831	SWA 076
A-SWA-076-SWM-B 085-V	1523869	SWA 076
A-SWA-J16-SWM-B 085	1523836	all SWA with J screw connection diagram
A-SWA-J16-SWM-B 085-V	1523875	all SWA with J screw connection diagram

Adapter plate ISO-A160-M10/M12-R



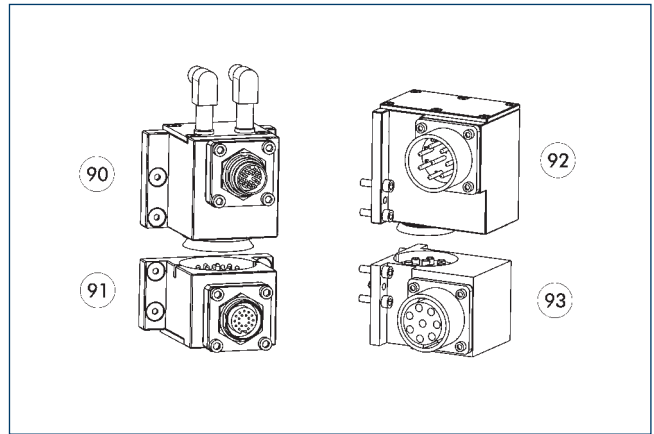
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨5 Fit for centering pins
- ⑨6 Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-076-ISO-A160-M10/M12	0302247

- ① Adapter plate for robots with M10 or M12 mounting patterns

Electric feed-through module



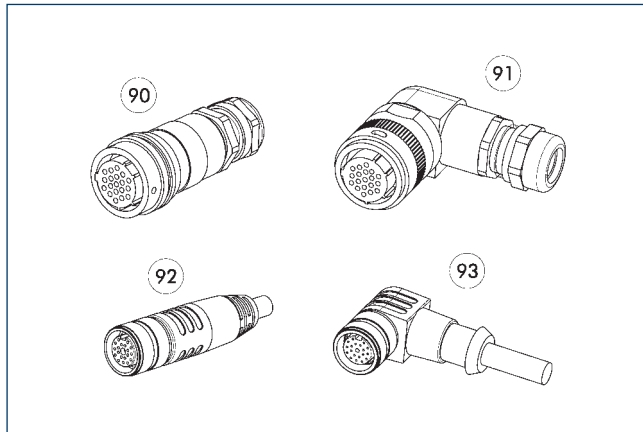
- ⑨0 Electric module with metric thread, robot-side
- ⑨1 Electric module with metric thread, tool-side
- ⑨2 Electric module with MIL-Spec thread, robot-side
- ⑨3 Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-RE5-K	9957444	
SWO-TP-K	9871166	
Feed-through module for communication on the tool side		
SWO-RE5-A	9957445	
SWO-TP-A	9871165	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-R19-K	9935815	19
SWO-R19R-K	9942391	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

### Cable plug/cable extension



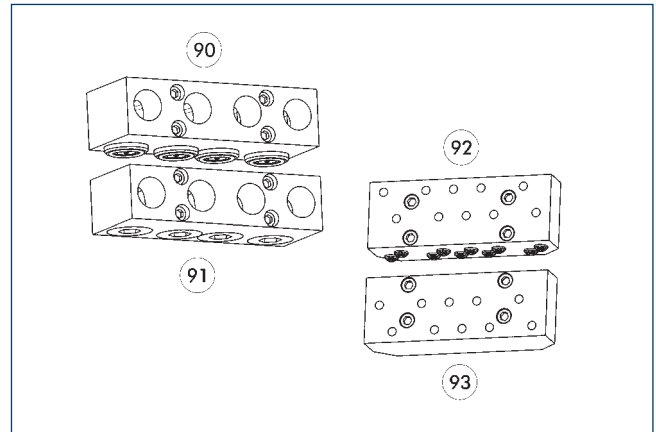
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

### Pneumatic/ fluidic feed-through modules



- 90 Self-sealing fluid module, robot-side
- 91 Self-sealing fluid module, tool-side
- 92 Pneumatic module, robot-side
- 93 Pneumatic module, tool-side

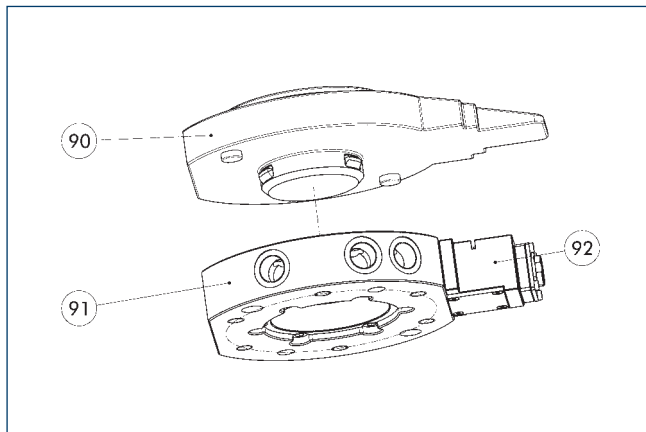
Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SWO-FG4-K	9937333	4
<b>Feed-through module for liquids on the tool side</b>		
SWO-FG4-A	9937334	4
<b>Feed-through module for pneumatics on the robot side</b>		
SWO-P186-K	9939024	6
<b>Feed-through module for pneumatics on the tool side</b>		
SWO-P186-A	9939025	6

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.



**Dust cover SWD-076**

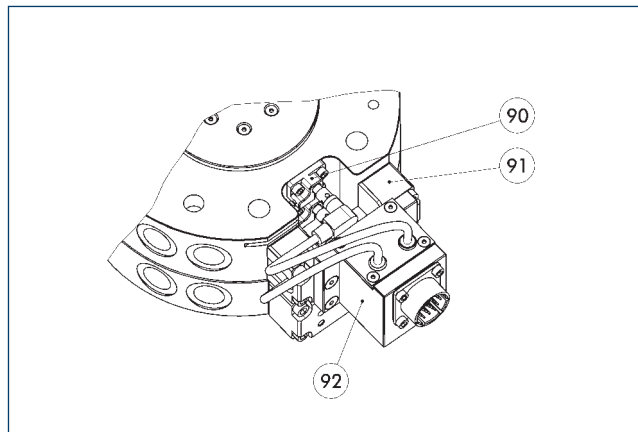


- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
Dust cover	
SWD-076-000-R00	0302258

**Assembly situation of the locking monitoring**



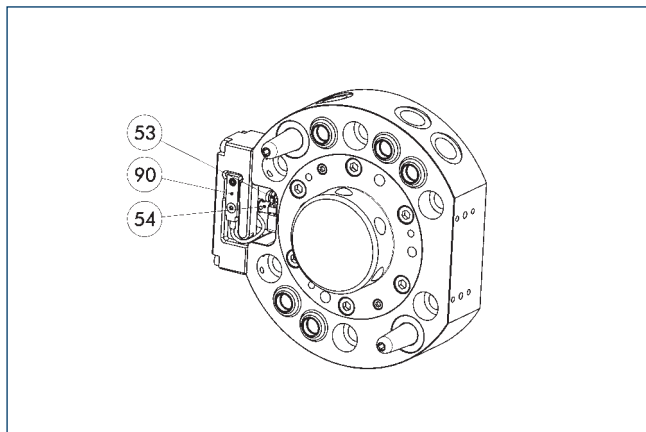
- ⑨⑩ AS-SWK 076
- ⑨① Spacer
- ⑨② Optional electrical module ...R-master with integrated sensor connection

When using the integrated piston stroke monitoring, a spacer is required between the electric optional module and the SWK. The spacer is included in the scope of delivery of the SWK (and the SWA). If the piston stroke monitoring is not used, the spacer is not required.

Description	ID
Attachment kit for proximity switch	
AS-SWK-40Q/076 attachment kit including sensor	9955216

① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

**Installation situation presence monitoring**

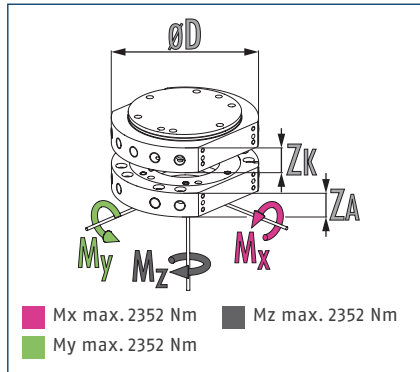
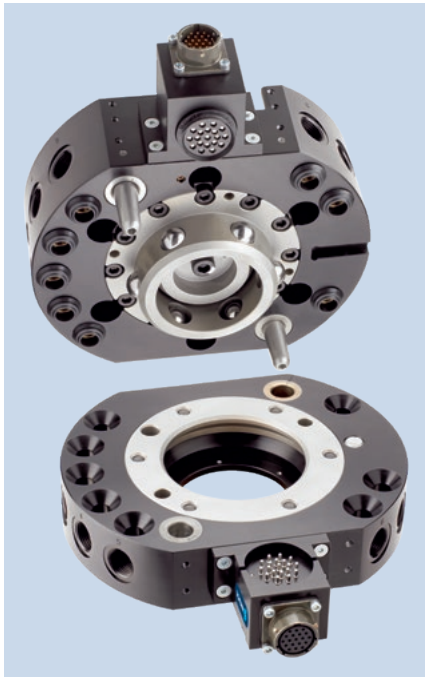


- ⑤③ Monitoring Position unlocked
- ⑤④ Monitoring Position locked
- ⑨⑩ Sensor for presence control

Description	ID
Inductive proximity switches	
INK 8-SL	0302456

① For each SWK, a proximity switch is required for presence monitoring.

## Dimensions and maximum loads



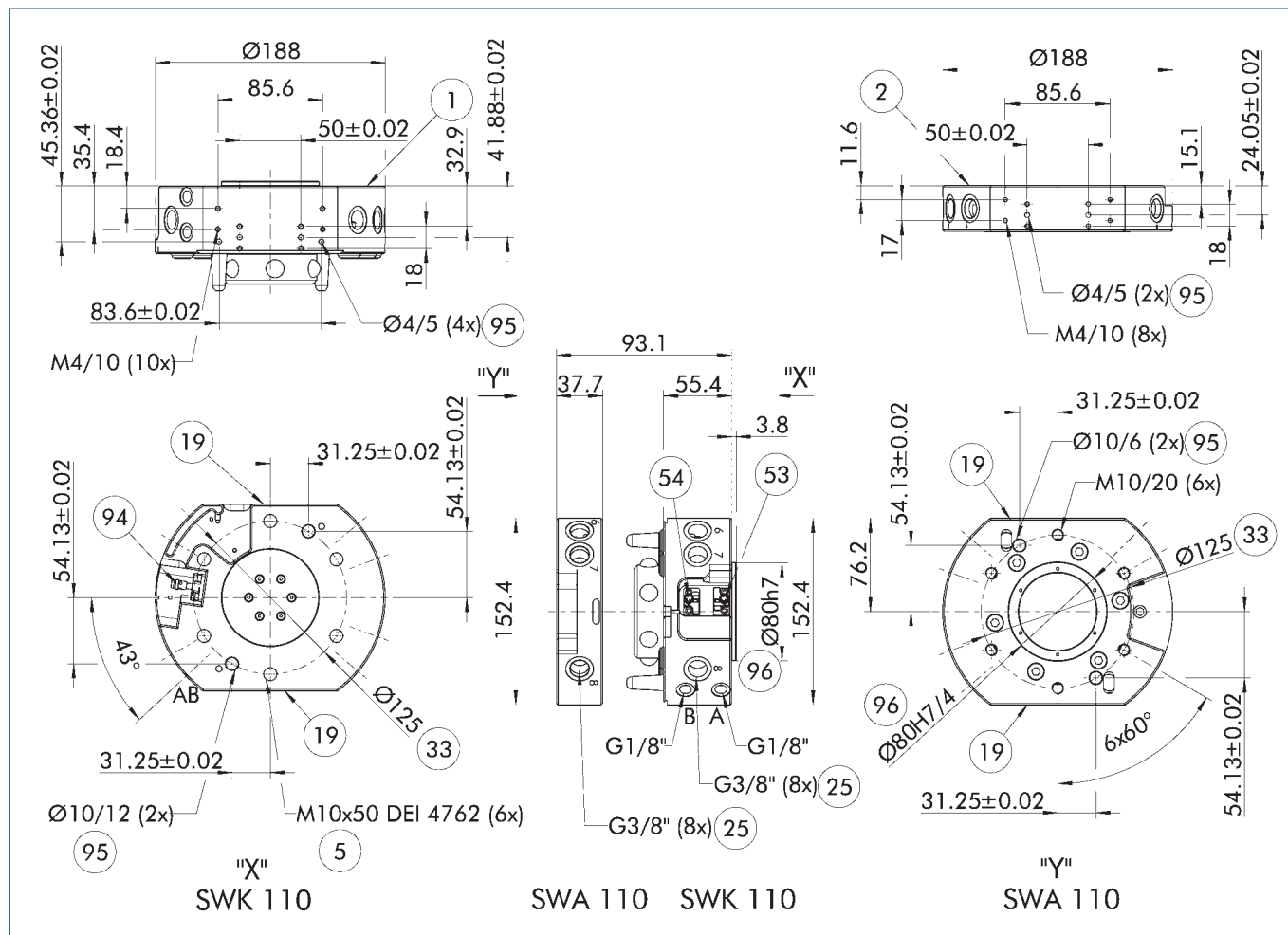
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

## Technical data

Description		SWK-110-000-000-SM	SWA-110-000-000
		Quick-change master	Quick-change adapter
ID		0302412	0302411
Recommended handling weight	[kg]	150	150
Piston stroke monitoring		integrated	
Locking force	[N]	12000	12000
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	4	2.2
Max. distance when locking	[mm]	3	3
Air connection thread pneumatic feed-through		8x G3/8"	8x G3/8"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±1	±1
Robot-side connection		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	188 x 55.5	188 x 37.6
Screw connection diagram		2 x J	2 x J

\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

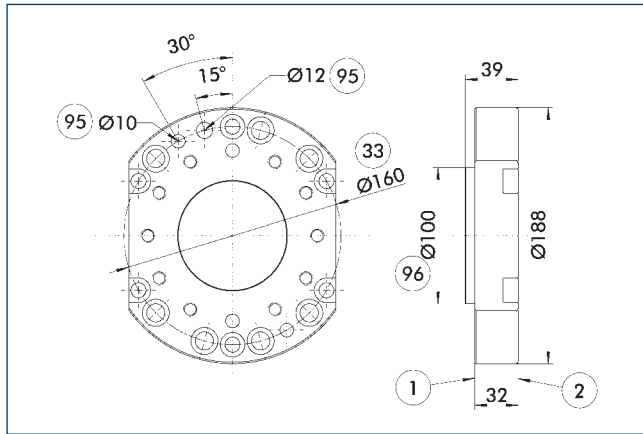
Main view



The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- A, a Air connection locked
- B, b Air connection unlocked
- ① Robot-side connection
- ② Tool-side connection
- ⑤ Through hole for connection with screws
- ⑱ Mounting surface for options
- ⑳ Pneumatic feed-throughs
- ㉓ DIN ISO-9409 bolt circle
- ⑤③ Monitoring Position unlocked
- ⑤④ Monitoring Position locked
- ⑨④ Optional proximity switch
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

## Adapter plate ISO-A160-M10/M12-R



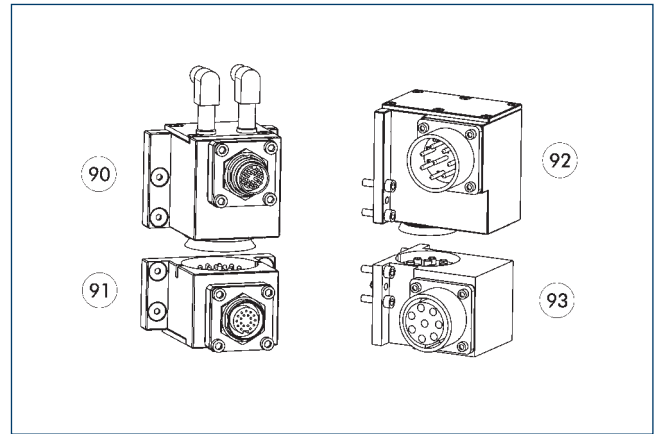
- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-110/210-ISO-A160-M10/M12	0302225

- ① Adapter plate for robots with M10 or M12 mounting patterns

## Electric feed-through module



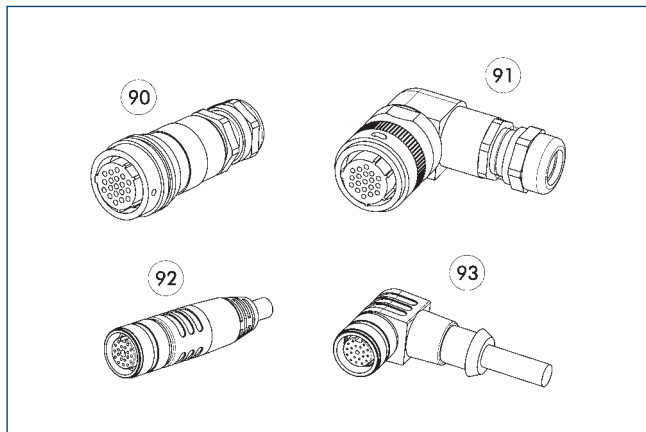
- ⑨① Electric module with metric thread, robot-side
- ⑨② Electric module with MIL-Spec thread, robot-side
- ⑨③ Electric module with metric thread, tool-side
- ⑨④ Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-RE5-K	9957444	
SWO-TP-K	9871166	
Feed-through module for communication on the tool side		
SWO-RE5-A	9957445	
SWO-TP-A	9871165	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-R19-K	9935815	19
SWO-R19R-K	9942391	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

**Cable plug/cable extension**



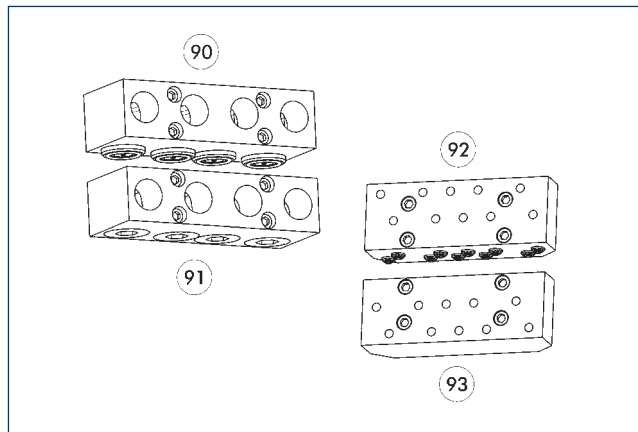
- 90 Plug/socket straight
- 91 Connector/angled socket
- 92 Connector/straight socket with extension cable
- 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

**Pneumatic/ fluidic feed-through modules**



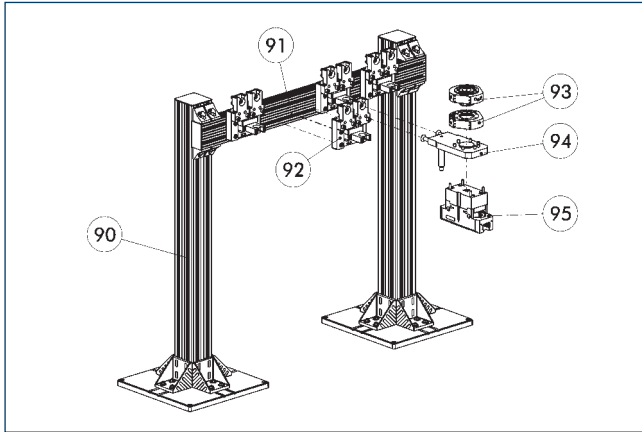
- 90 Self-sealing fluid module, robot-side
- 91 Self-sealing fluid module, tool-side
- 92 Pneumatic module, robot-side
- 93 Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SWO-FG4-K	9937333	4
<b>Feed-through module for liquids on the tool side</b>		
SWO-FG4-A	9937334	4
<b>Feed-through module for pneumatics on the robot side</b>		
SWO-P186-K	9939024	6
<b>Feed-through module for pneumatics on the tool side</b>		
SWO-P186-A	9939025	6

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

## SWM-M modular storage rack

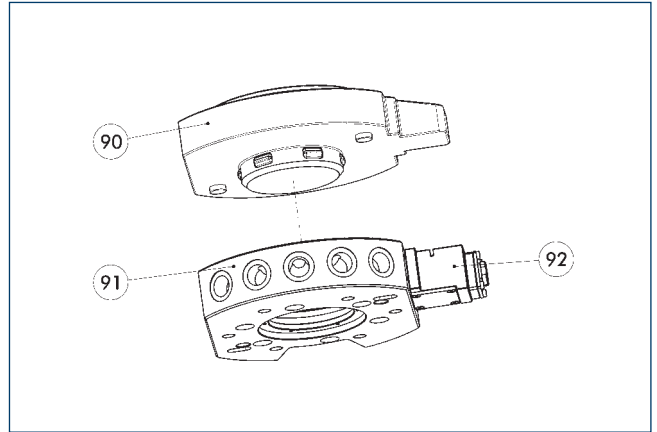


- ⑨⑩ Base plate with upright profile
- ⑨① Horizontal profile
- ⑨② Storage module
- ⑨③ Quick-change system SWS
- ⑨④ Intermediate plate
- ⑨⑤ Parallel gripper

The modular storage rack is designed for the specific size. The system's modular design allows you to compile your individual storage rack. This provides you with a storage rack that meets your individual requirements, taking into account the number of tools, deposition positions, and tool size. For further information please refer to the chapter "SWM storage rack"

Description	ID
<b>Storage module</b>	
SWM-TSM-MM-4018	0303214
<b>Cross profile</b>	
SWM-TSM-HM-3317	0303228
SWM-TSM-HM 3323	0303229
<b>Sensor</b>	
IN-B180-S-M12	0303244
<b>Sensor bracket</b>	
SWM-TSM-SM-4205	0303245
<b>Vertical profile</b>	
SWM-TSM-PM-3318	0303226
SWM-TSM-PM-3322	0303227
<b>Intermediate plate</b>	
SWM-TSM-TP-4059	0303220

## Dust cover SWD-110

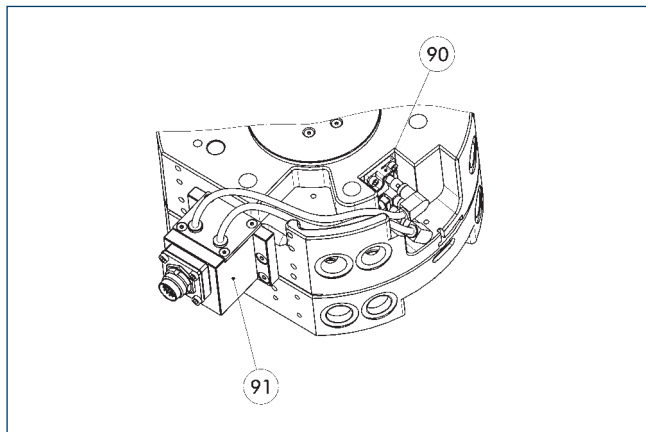


- ⑨⑩ Dust cover SWD
- ⑨① Quick-change adapter SWA
- ⑨② Optional electrical module

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing head, allowing the robot to remove the cover from one adapter and placed on another adapter

Description	ID
<b>Dust cover</b>	
SWD-110-R00-000	0302260

**Assembly situation of the locking monitoring**



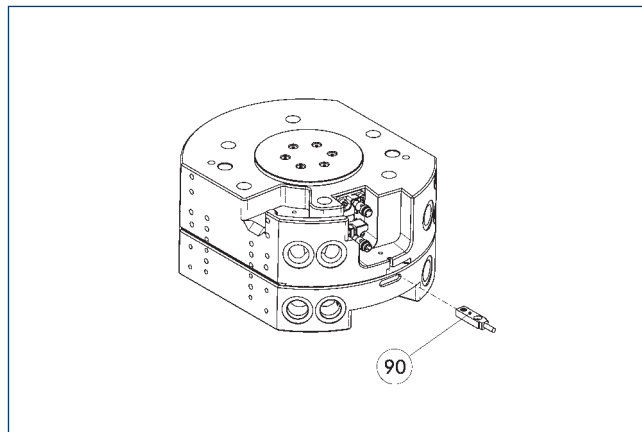
- 90 AS-SWK 110
- 91 Optional electrical module ...R-master with integrated sensor connection

The drawing shows the quick-change system with integrated piston stroke monitoring and built-in proximity switch; this is directly connected to the electric modules.

Description	ID
Attachment kit for proximity switch	
AS-SWK-110/160 attachment kit including sensor	9957835

- ① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

**Installation situation presence monitoring**

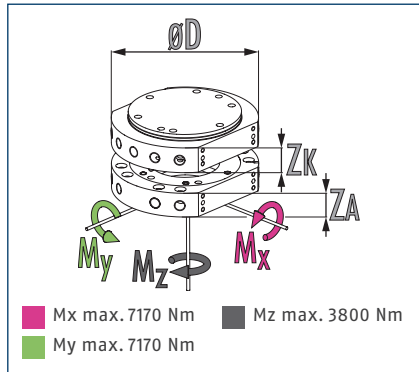


- 90 Sensor for presence control

Description	ID
Inductive proximity switches	
INK 8-SL	0302456

- ① For each SWK, a proximity switch is required for presence monitoring.

## Dimensions and maximum loads



ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

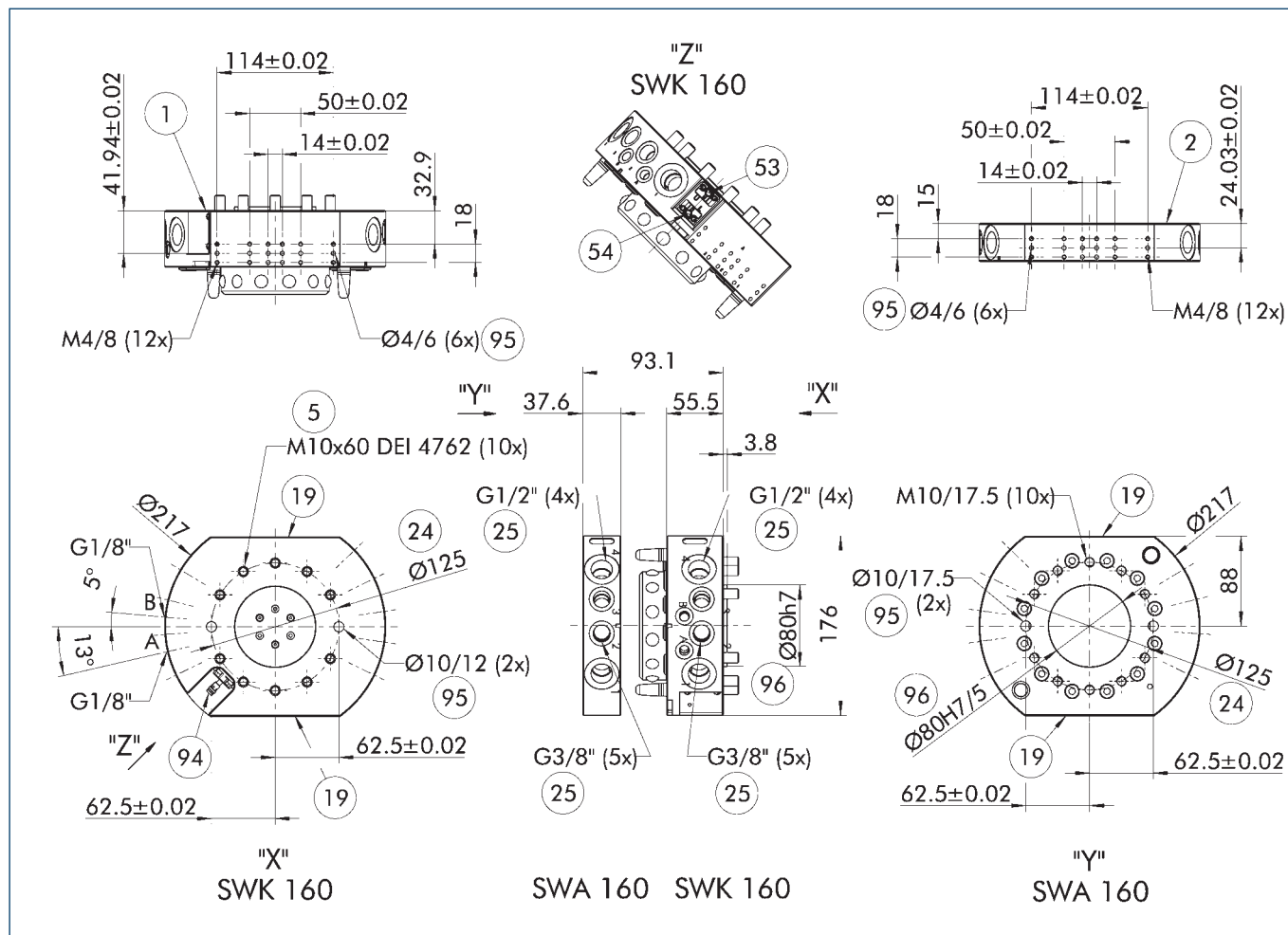
## Technical data

Description		SWK-160-000-000-SM	SWA-160-000-000
		Quick-change master	Quick-change adapter
ID		0302440	0302441
Recommended handling weight	[kg]	300	300
Piston stroke monitoring		integrated	
Locking force	[N]	31000	31000
Repeat accuracy	[mm]	0.015	0.015
Weight	[kg]	6.44	2.86
Max. distance when locking	[mm]	2.54	2.54
Air connection thread pneumatic feed-through		5x G3/8"	5x G3/8"
Air connection thread pneumatic feed-through		4x G1/2"	4x G1/2"
Lock/unlock main connection		G1/8"	
Max. permissible XY axis offset	[mm]	±2	±2
Max. permissible angular offset	[°]	±1	±1
Robot-side connection		ISO 9409-1-125-10-M10	ISO 9409-1-125-10-M10
Min./max. ambient temperature	[°C]	5/60	5/60
Min./max. operating pressure	[bar]	4.5/6.9	4.5/6.9
Dimensions Ø D x Z*	[mm]	217 x 55.5	217 x 37.6
Screw connection diagram		2 x J	2 x J

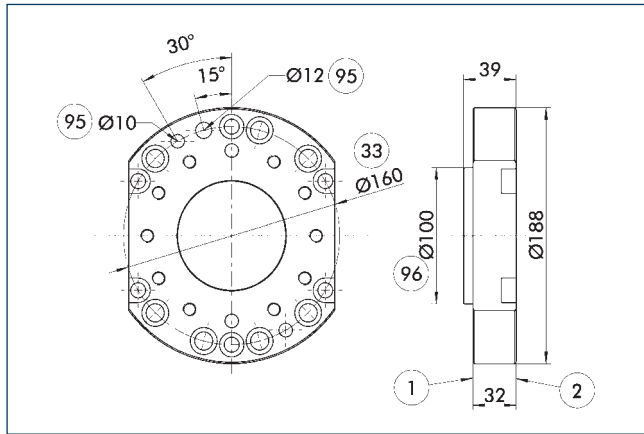
\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.



Main view



## Adapter plate ISO-A160-R

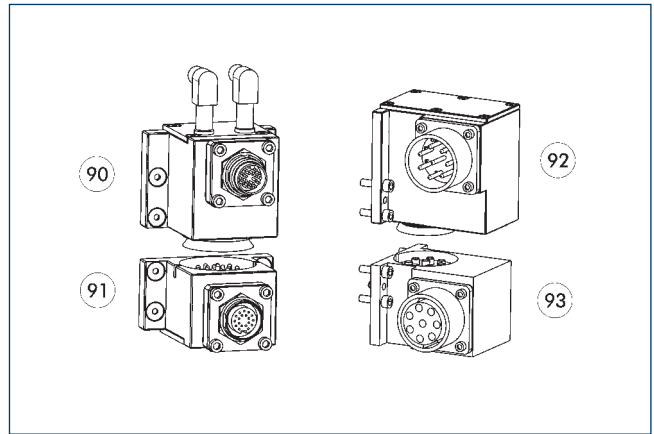


- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑨⑤ Fit for centering pins
- ⑨⑥ Fit for centering

Robot side adapter plate

Description	ID
Robot side	
A-SWK-160-ISO-A160	0302248

## Electric feed-through module



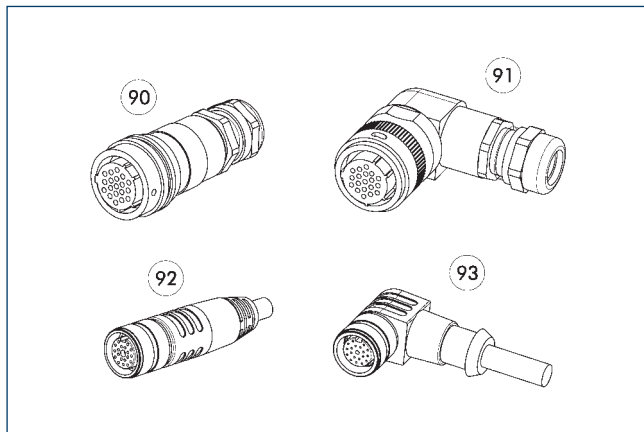
- ⑨① Electric module with metric thread, robot-side
- ⑨② Electric module with MIL-Spec thread, robot-side
- ⑨③ Electric module with metric thread, tool-side
- ⑨④ Electric module with MIL-Spec thread, tool-side

Modules for transmission of electrical signals.

Description	ID	No. Pins
Feed-through module for communication on the robot side		
SWO-RE5-K	9957444	
SWO-TP-K	9871166	
Feed-through module for communication on the tool side		
SWO-RE5-A	9957445	
SWO-TP-A	9871165	
Feed-through module for power on the robot side		
SWO-MT8-K	9937157	
Feed-through module for power on the tool side		
SWO-MT8-A	9937158	
Feed-through module for signal on the robot side		
SWO-R19-K	9935815	19
SWO-R19W-K	9942041	15
SWO-R26-K	9935819	26
SWO-RF19-K	9948654	19
Feed-through module for signal on the tool side		
SWO-R19-A	9935816	19
SWO-R26-A	9935820	26
SWO-RF19-A	9948657	19

- ① For more detailed information and further modules and matching cable connectors, see catalog chapter "SWO" or visit our website.

## Cable plug/cable extension



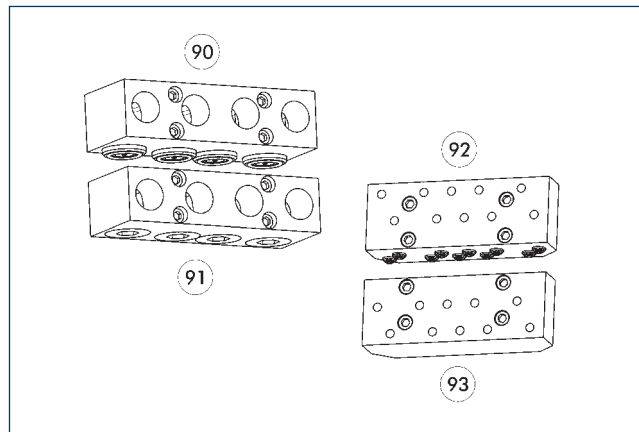
- 90 Plug/socket straight  
 91 Connector/angled socket  
 92 Connector/straight socket with extension cable  
 93 Connector/angled socket with extension cable

Other cable lengths on request.

Description	ID	Length [m]
<b>Angled cable connector, robot-side</b>		
KAS-19B-K-90-C	0301294	
KAS-19F-K-90	1316879	
KAS-26B-K-90-C	0301296	
<b>Angled cable connector, tool-side</b>		
KAS-19B-A-90-C	0301295	
KAS-19F-A-90	1316873	
KAS-26B-A-90-C	0301297	
<b>Angled cable connector with cable, robot-side</b>		
KV-5-SWK-19B-90	0302190	5
KV-5-SWK-19F-90	0302172	5
<b>Angled cable connector with cable, tool-side</b>		
KV-3-SWA-19B-90	0302191	3
KV-3-SWA-19F-90	0302175	3
<b>Straight cable connector, robot-side</b>		
KAS-08G-K-0	0301268	
KAS-19B-K-0-C	0301283	
KAS-19F-K-0	1351134	
KAS-26B-K-0-C	0301290	
<b>Straight cable connector, tool-side</b>		
KAS-08G-A-0	0301269	
KAS-19B-A-0-C	0301284	
KAS-19F-A-0	1351135	
KAS-26B-A-0-C	0301291	
<b>Straight cable connector with cable, robot-side</b>		
KV-5-SWK-19B-0	0302177	5
KV-5-SWK-19F-0	0302170	5
<b>Straight cable connector with cable, tool-side</b>		
KV-3-SWA-19B-0	0302178	3
KV-3-SWA-19F-0	0302174	3

① For more detailed information and other cable connectors, see catalog chapter "SWO" or visit our website.

## Pneumatic/ fluidic feed-through modules



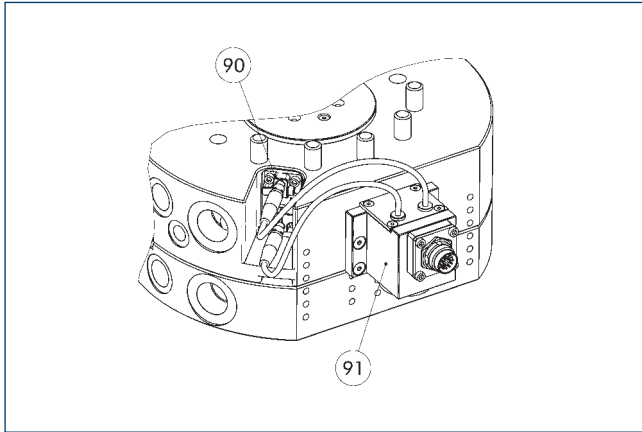
- 90 Self-sealing fluid module, robot-side  
 91 Self-sealing fluid module, tool-side  
 92 Pneumatic module, robot-side  
 93 Pneumatic module, tool-side

Modules for transferring fluids (air, vacuum or fluid).

Description	ID	No. of fluid feed-throughs
<b>Feed-through module for liquids on the robot side</b>		
SWO-FG4-K	9937333	4
<b>Feed-through module for liquids on the tool side</b>		
SWO-FG4-A	9937334	4
<b>Feed-through module for pneumatics on the robot side</b>		
SWO-P186-K	9939024	6
<b>Feed-through module for pneumatics on the tool side</b>		
SWO-P186-A	9939025	6

① For other pneumatic and fluid modules, see catalog chapter "Options" or visit our website.

## Assembly situation of the locking monitoring



90 AS-SWK 160

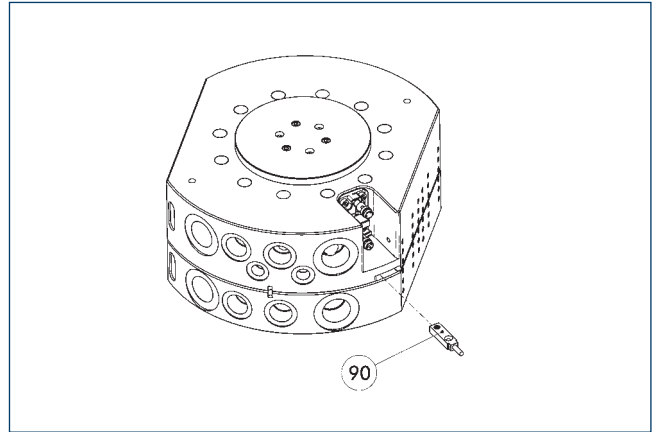
91 Electric optional module  
...W-master with integrated  
sensor connection

The drawing shows the quick-change system with integrated piston stroke monitoring and built-in proximity switch; this is directly connected to the electric modules.

Description	ID
Attachment kit for proximity switch	
AS-SWK-110/160 attachment kit including sensor	9957835

- ① The -SG/-SM/-SQ/-IN variants of the SWK include the piston stroke monitoring option. An additional order of the mounting kit is not necessary. The scope of delivery of a mounting kit contains one preset sensor with holder each, meaning that two mounting kits are required per SWK.

## Installation situation presence monitoring



90 Sensor for presence control

Description	ID
Inductive proximity switches	
INK 8-SL	0302456

- ① For each SWK, a proximity switch is required for presence monitoring.





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