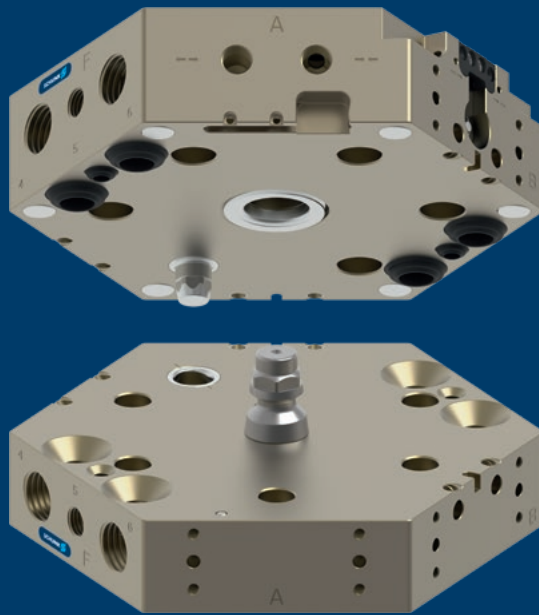




Hand in hand for tomorrow



Product data sheet

Automatic tool changers CPB 040

Versatile. Reliable. Precise.

Automatic tool changers CPB

Pneumatically actuated tool changer with self-retaining function in the event of a loss of compressed air, the integrated piston spring ensures that gap formation is minimized.

Field of application

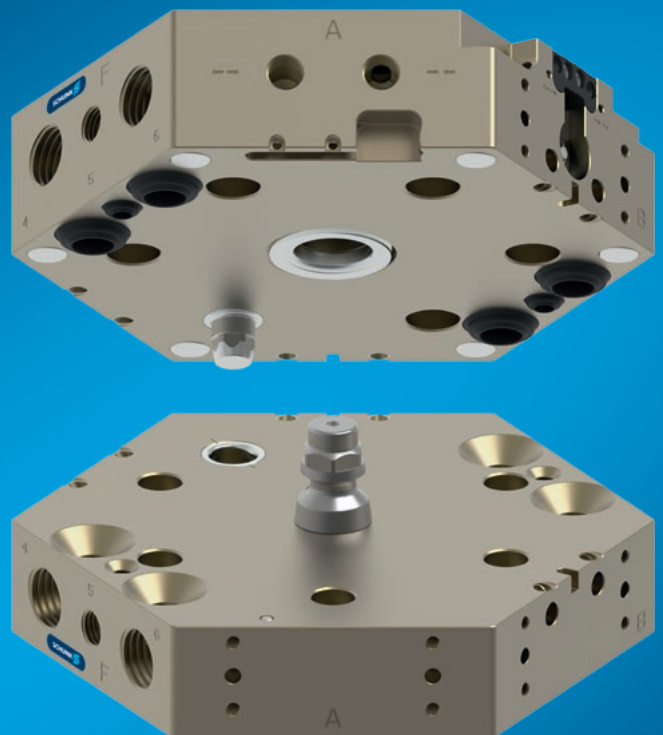
Universally applicable (e.g., for handling tasks or machine loading) with short change-over times between an end effector such as a gripper or a customer's tool.

Advantages – Your benefits

Tried-and-tested locking mechanism The positive-locking, self-retaining pin mechanism made of vacuum-hardened stainless steel is based on over 20 years of experience in stationary workholding, and offers maximum stability as well as long service life

Integrated energy supply Additional pneumatic feed-throughs ensure a reliable supply of handling modules and tools

Easy assembly The integrated ISO interface in accordance with ISO 9409 on the robot and tool side enables quick assembly and reduces the effort involved in commissioning



Sizes
Quantity: 7

Functional description

The automatic tool changer CPB consists of a change master (CPB-K) and a change adapter (CPB-A). The CPB-K that is mounted on the robot couples and decouples the CPB-A which is mounted on the tool. The pneumatically

actuated clamping slide and the high-precision locking pin ensure a reliable connection. Suitable option modules supply the coupled tool.



- ① **Housing**
Weight-optimized due to the use of high-strength, hard-coated aluminum alloy
- ② **Locking mechanism**
Functional parts are made of hardened stainless steel. The integrated clamping slides ensure a quick and fixed connection. Self-retaining during compressed air drop. Integrated spring prevents gap formation between master and adapter.
- ③ **Short taper centering**
- ④ **Sensor monitoring of the locking device**
Optional, for monitoring in a reliable process
- ⑤ **Pressure spring made of stainless steel**
- ⑥ **Fitting screw**
Attached directly to the interface, it ensures that the moments around M_z are absorbed.

General notes about the series

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

Operating principle: piston-actuated clamping slides with integrated spring (to support the locked position)

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 corrosion-free steel.

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.

Minimum pressure: The minimum pressure is the required minimum pressure to lock the system. This pressure must be continuously present during operation.

Self-retaining: The automatic tool changer has a self-retaining feature that prevents the tool from falling off in case of the pressure drop.



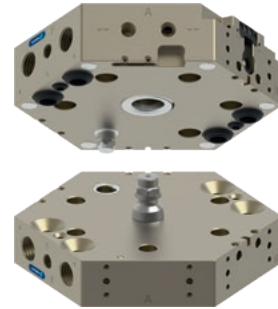
Application example

- ❶ Automatic tool changers CPB
- ❷ Optional modules COB

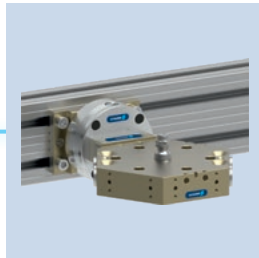
- ❸ 2-finger parallel gripper PGN-plus-P

SCHUNK offers more ...

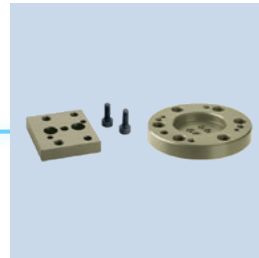
The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Optional modules COB



Modular storage rack CTS B



Adapter plates

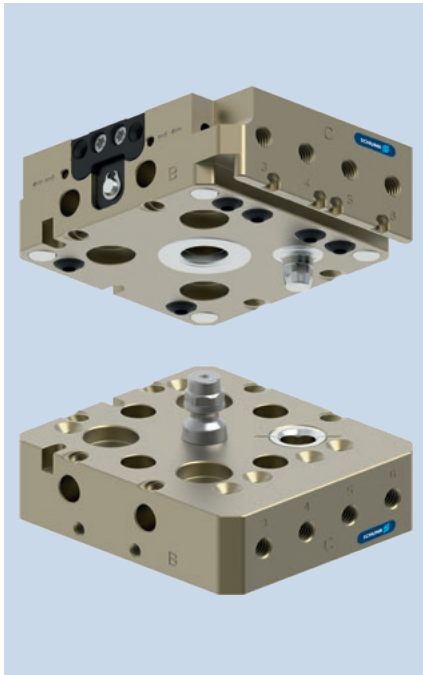


Universal gripper

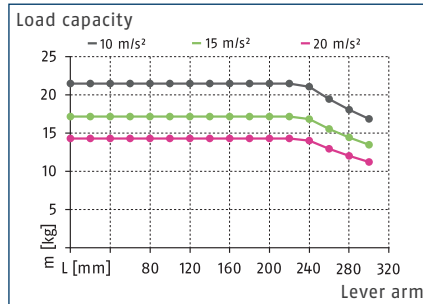


Proximity switch

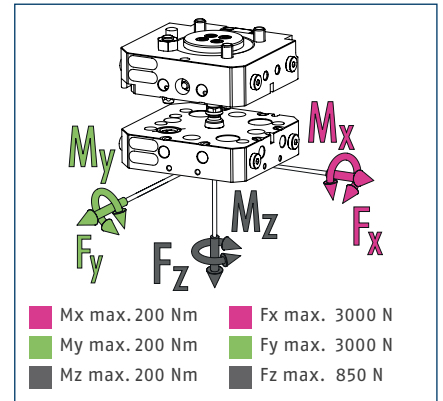
① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).



Load chart



Max. loads

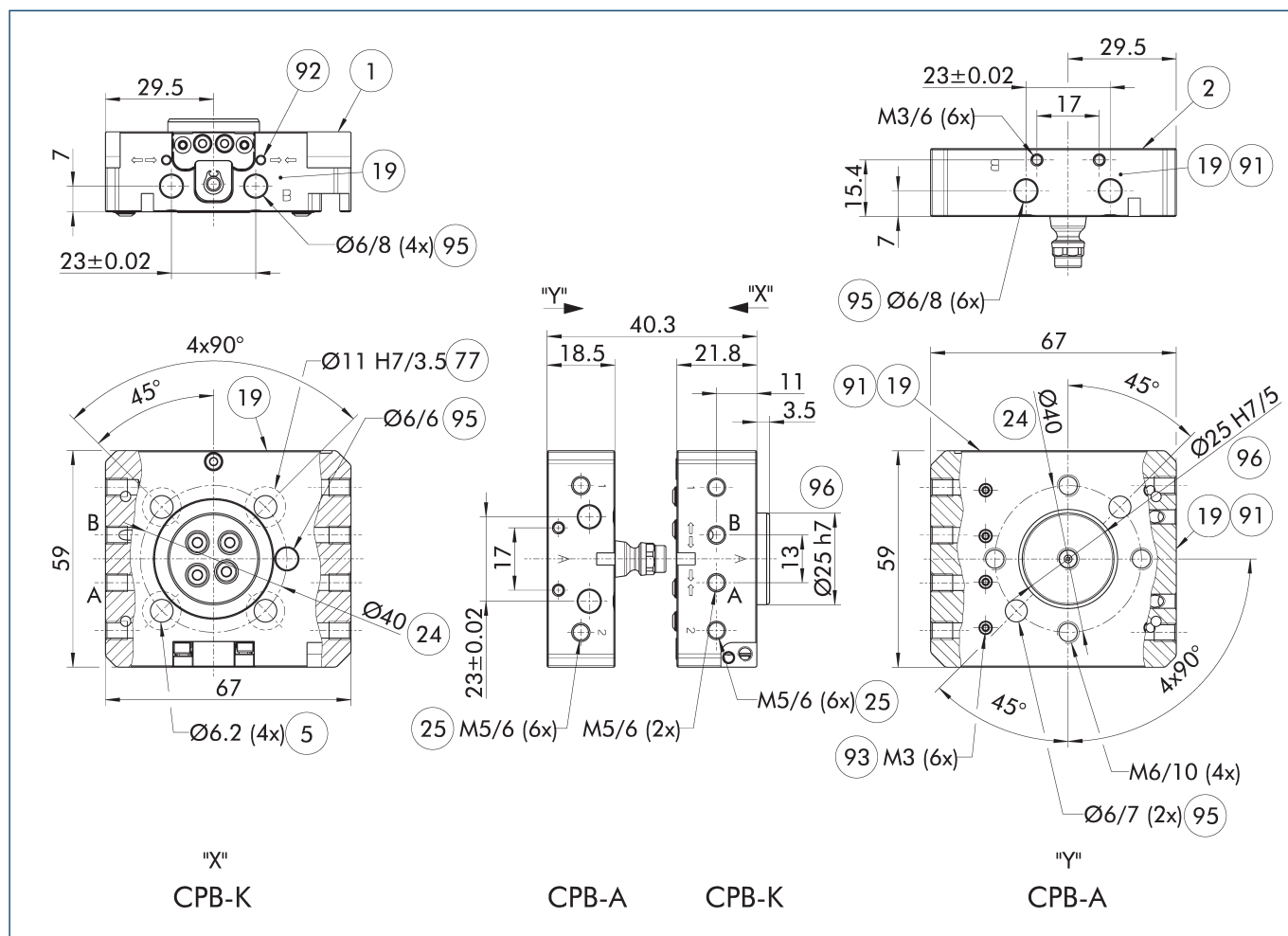


① This is the sum of all static loads that are permitted to act on the tool changer.

Technical data

Description		CPB 040-K	CPB 040-A
		Change head	Tool
ID		1595203	1595207
Lock sensing		prepared	
Locking force	[N]	850	
Locking force provided by spring force	[N]	200	
Repeat accuracy	[mm]	0.015	
Weight	[kg]	0.22	0.19
Max. distance when locking	[mm]	0.5	
Number of pneumatic feed-throughs		6x M5	6x M5
Lock/unlock main connection		M5	
Max. permissible XY axis offset	[mm]	±1	±1
Max. permissible angular offset XY	[°]	±0.8	±0.8
Max. permissible angular offset Z	[°]	±2	±2
Robot-side connection		ISO 9409-1-40-4-M6	
Tool-side connection			ISO 9409-1-40-4-M6
Min./max. ambient temperature	[°C]	5/60	5/60
Nominal operating pressure	[bar]	6	6
Min./max. operating pressure	[bar]	4.5/7	4.5/7
Screw connection diagram		2 x B	2 x B / 1 x CTS
Opening/closing time	[s]	0.5/0.5	
Unlock cylinder volume	[cm³]	2.7	
Lock cylinder volume	[cm³]	2.8	
Cylinder volume per double stroke	[cm³]	5.5	
Flow rate at 6 bar (per feed-through)		150 l/min (M5)	150 l/min (M5)
Max. dynamic moment Mx	[Nm]	100	100
Max. dynamic moment My	[Nm]	100	100
Max. dynamic moment Mz	[Nm]	100	100
Force Fx max. dynamic	[N]	1000	1000
Force Fy max. dynamic	[N]	1000	1000
Force Fz max. dynamic	[N]	425	425

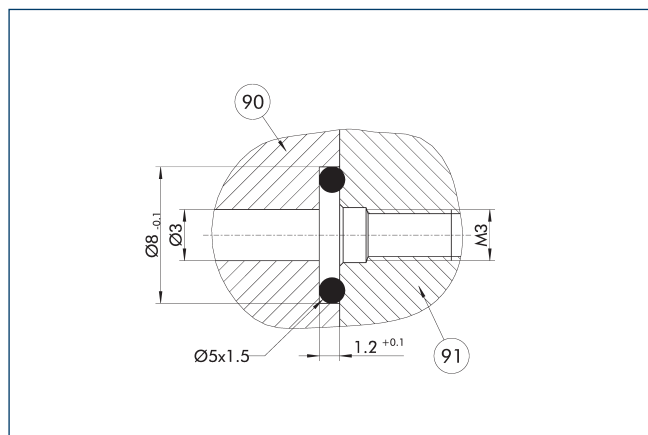
Main view



The drawing shows the basic version of the tool changer without taking account of the dimensions 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
- 19 Mounting surface for options
- 24 Bolt circle
- 25 Pneumatic feed-throughs
- 77 Clearance for fitting screw
- 91 Screw connection diagram for storage adapters
- 92 LED display when using the optional sensors for interlock monitoring
- 93 Hose-free direct connection
- 95 Fit for centering pins
- 96 Fit for centering

Hose-free direct connection

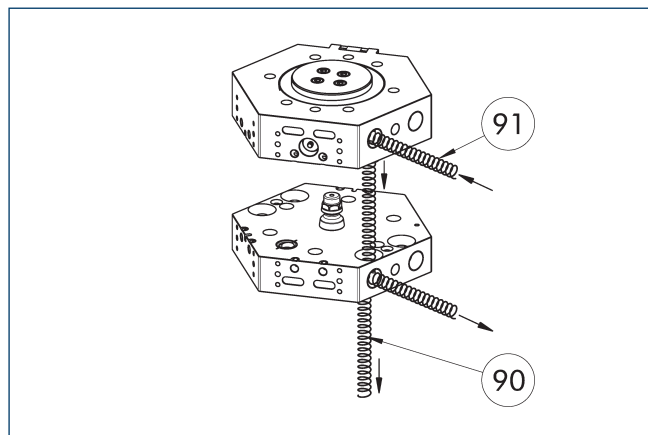


90 Adapter plate

91 Tool

The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Pneumatic feed-through

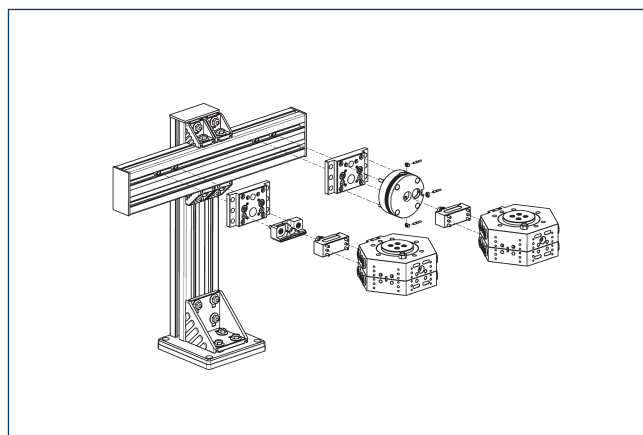


90 Feed-through axial

91 Feed-through radial

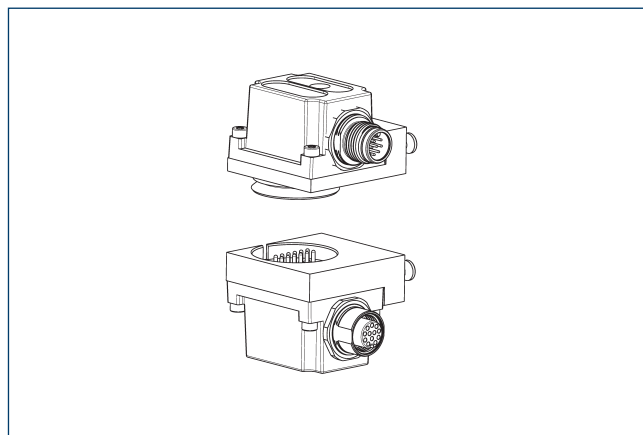
The tool changer has pneumatic feed-throughs. On the tool side, these can be used both axially hose-free via the customer's adapter plate and radially with a hose connection.

Modular storage rack CTS B



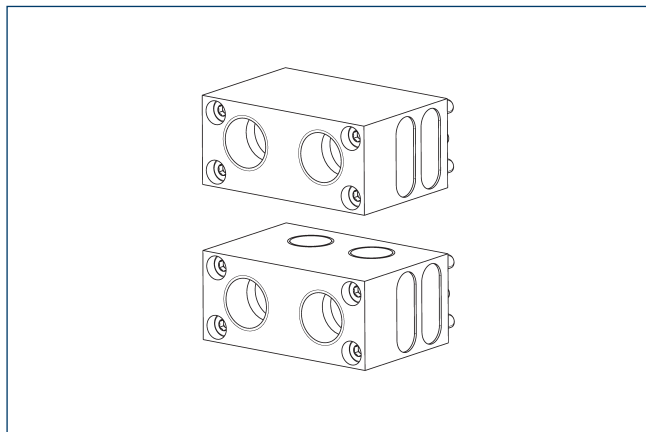
① For detailed information, see the "CTS" chapter in the catalog, or visit schunk.com.

Optional modules COB



① For detailed information and suitable cable connectors, see the "COB" chapter in the catalog, or visit schunk.com.

Optional modules COS

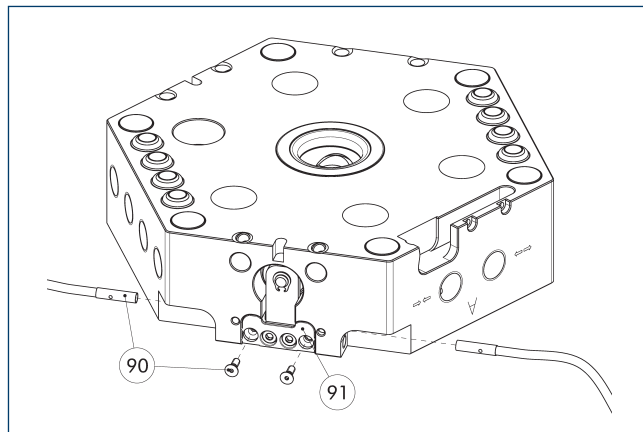


An adapter plate is sometimes required to mount COS option modules on CPB tool changers.

Description	ID	Screw connection diagram
Adapter plate		
COB Z81-B/J	1610145	B
COB Z82-B/2BJ	1610150	B

① For detailed information and suitable cable connectors, see the "COS" chapter in the catalog, or visit schunk.com.

Lock sensing



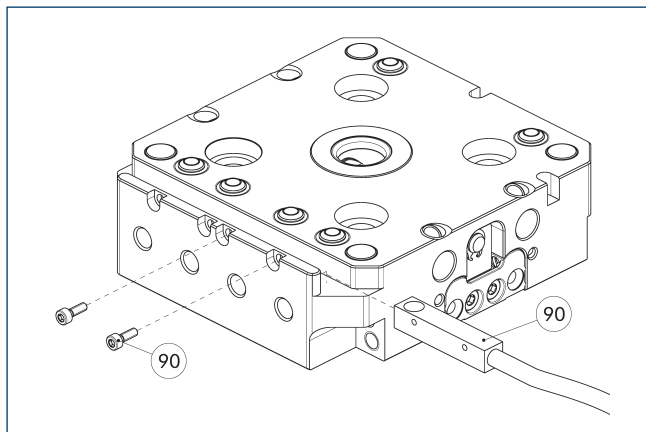
⑨⑩ Attachment kit for lock/unlock monitoring ⑨⑪ Bracket (already pre-assembled)

The drawing shows the installation situation with the prepared locking monitoring.

Description	ID
Attachment kit for proximity switch	
AS-CPB-040-100	1618207

① Two attachment kits (sensor included) are required for each unit, as well as optional extension cables. Please consider the minimum permissible bending radii for sensor cables. These are generally 35 mm.

Presence monitoring



⑨⑩ Attachment kit for presence monitoring

End position monitoring can be mounted with an attachment kit.

Description	ID
Attachment kit for proximity switch	
AS-CPB-040-100-RTL	1618209

① For each CPB-K, an attachment kit (sensor included) is required for presence monitoring.



SCHUNK SE & Co. KG

Spanntechnik

Greiftechnik

Automatisierungstechnik

Bahnhofstr. 106 - 134

D-74348 Lauffen/Neckar

Tel. +49-7133-103-0

Fax +49-7133-103-2399

info@de.schunk.com

schunk.com

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