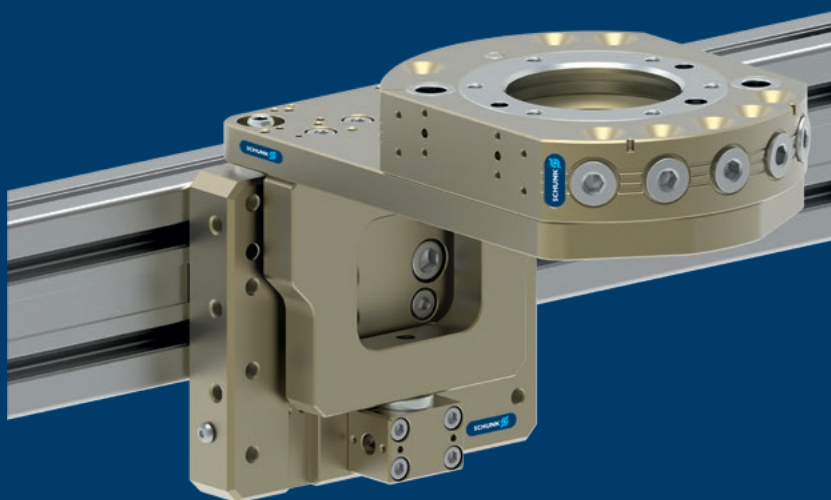




Hand in hand for tomorrow



Product data sheet

Storage module CTS B-016

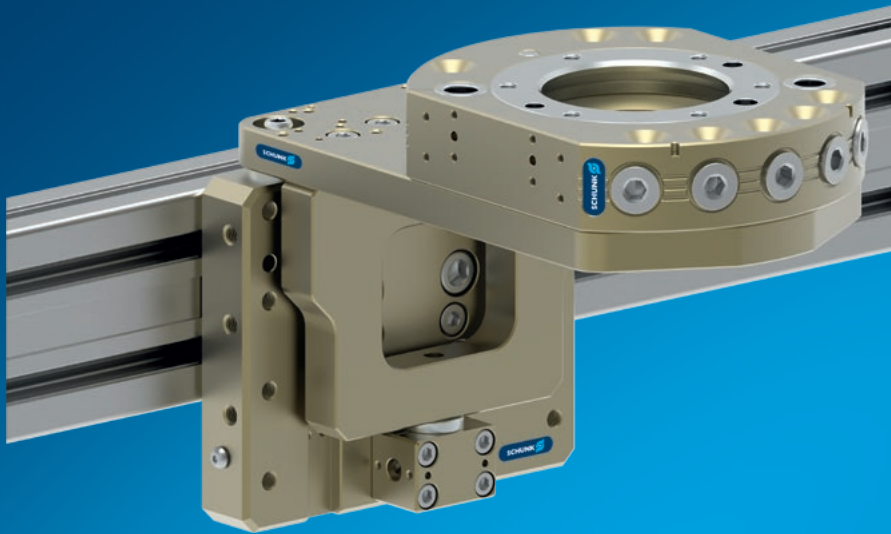
Compact. Reliable. Versatile.

Storage rack

Storage racks for the automatic tool changers CPS and CPB

Field of application

SCHUNK storage systems CTS are optimally adapted to SCHUNK tool changers CPS and CPB and provide stability, flexibility, and a long service life.



Advantages – Your benefits

Compact design for minimal interfering contours on storage station and tool

Comprehensive range of variants for flexible use in various application areas

Standardized adapter plates available for all CPS and CPB sizes

Stainless, hardened contact surfaces for a long service life

Sensor monitoring optionally available

Easy integration in customized solutions

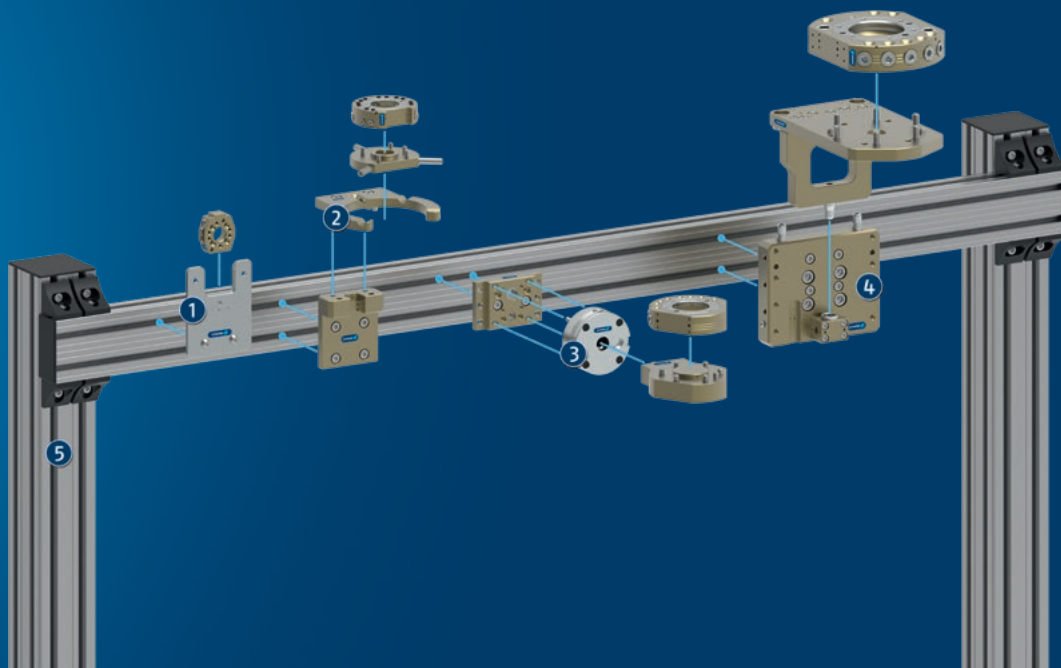


Sizes
Quantity: 10

Functional description

Automatic change of the end effector (e.g. gripper, etc.) increases the flexibility of your robot. In addition to an automatic tool changer (CPS/CPB), a tool storage rack is required for a change operation. For placing a tool, the robot inserts the tool into the storage connecting member of the storage rack. At least one of the four different

storage types is available for all CPS and CPB sizes. This means that the CTS systems can be used both in simple cost-sensitive applications as well as in applications with the greatest requirements and flexibility in the orientation and position of the storage rack.



① **Tool stand CTS T**
Variable horizontal and vertical mounting possible

② **Storage module CTS C**
offers the option of using free pneumatic connections on the CPS-A, alternatively an adapter plate can be used

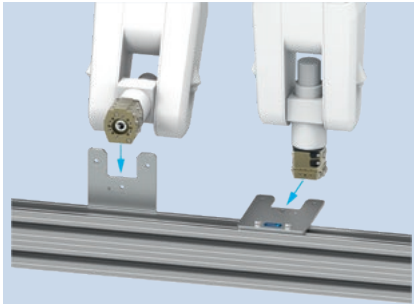
③ **Storage module CTS B**
Compact design, minimal interfering contour and high compatibility between variants

④ **Storage module CTS P**
Precise positioning thanks to 3-point support

⑤ **Aluminum profile**
Can be optimally adapted to customized applications thanks to their combinability

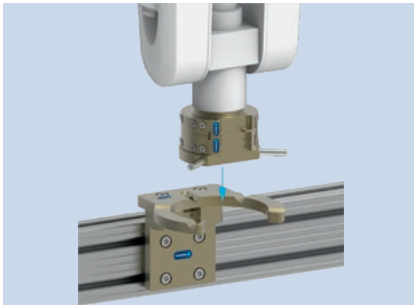
Detailed functional description

Storage process CTS T



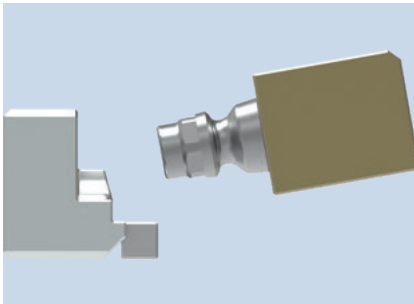
A special feature of the tray storage system is the variable mounting of the metal tray. The tray can be installed horizontally, vertically or laterally on a horizontal profile section. To store the CPS-A in the storage plate, the existing groove in the CPS-A is pushed onto the plate and the CPS-A is held in storage position by means of a locking device.

Storage process CTS C



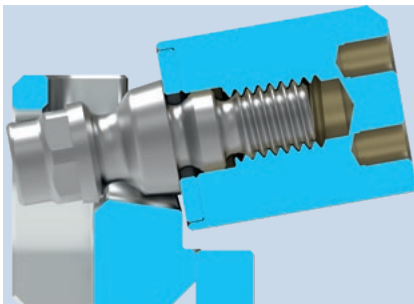
In the bolt storage system, the tool is deposited in the storage system from above. The workpiece stops are positioned in the provided grooves. Position adapters allow up to four tools to be deposited per profile. The extension adapter allows increasing the distance to the profile. This also allows large-sized tools to be deposited. The screw-on pattern of the CPS-A is already integrated into the intermediate plate and is therefore easy to mount.

Storage process CTS B, passive variant – Step 1: Inserting the tool into the storage module



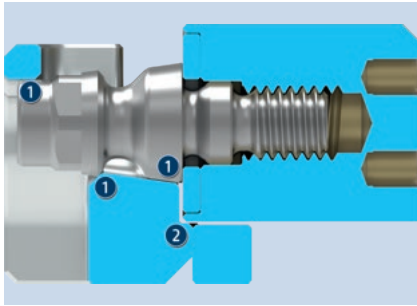
To store the tool in the storage module, the storage system must be approached at an angle of 10°.

Storage process CTS B, passive variant – Step 2: Lowering the tool

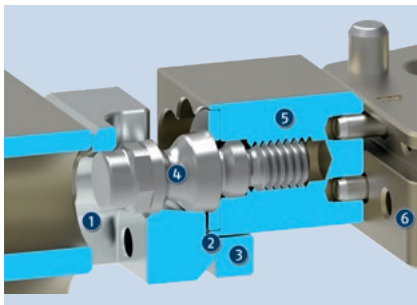


Before the tool is lowered into the horizontal storage position, the bolt must be briefly moved beyond the rear side of the storage module. Therefore, a hole must be provided behind the bore hole on the rear side of the storage module. This hole is already present in the mounting plate that is provided as an accessory.

Storage process CTS B, passive variant – Step 3: Stored tool

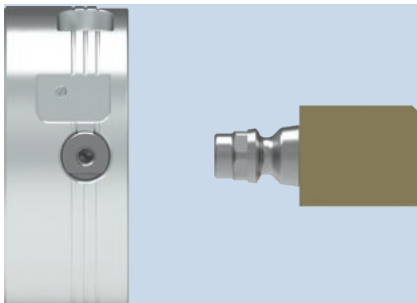


- ❶ When in the stored position, the bolt rests on the storage module at three points.
- ❷ In addition, when the center of gravity of the tool is off-center, the adapter plate also rests on the storage module, thereby preventing it from tipping.



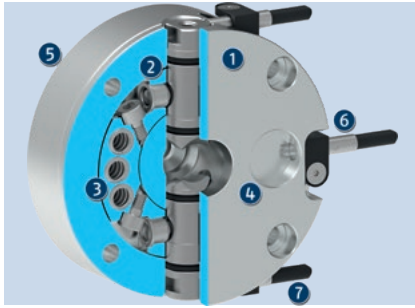
- ❶ Base body made of vacuum-hardened stainless steel for maximum service life
- ❷ Anti-rotation protection for storing tools with a decentralized center of gravity
- ❸ Sensor monitoring optional, for the process-reliable monitoring of tool presence
- ❹ Storage pins hardened for maximum wear resistance
- ❺ Adapter plate for tool change adapter available as intermediate plate or for side mounting (shown here) depending on size
- ❻ Automatic tool changer for a safe, automated tool change

Storage process CTS B, active variant



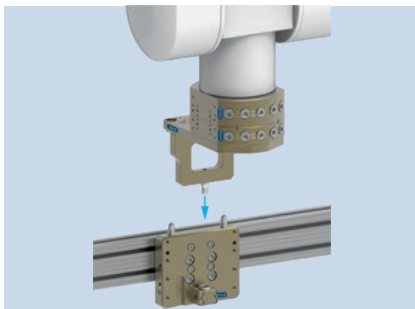
When storing the active variant, the bolt attached to the tool change adapter CPS-A or CPB-A is inserted linearly into the storage module. After the CTS B -V has been locked, the change system can be unlocked, allowing the tool to be stored.

Sectional diagram of function, active variant (with locking)



- ❶ Base body
made of vacuum-hardened
stainless steel for maximum service
life
- ❷ Locking
via pistons with patented rapid
stroke and clamping stroke
- ❸ Piston drive via spring assembly
and pneumatics
Opening by pneumatics, closing by
spring – for secure locking, even in
the event of compressed air failure
- ❹ Anti-rotation protection
for storing tools with a decentra-
lized center of gravity
- ❺ Centering sleeves
for repeatable mounting
- ❻ Monitoring of tool presence
optional, for higher process
reliability
- ❼ Monitoring of locking status
optional, for the positions "storage
module open" and "storage
module locked"

Storage process CTS P



The pin & bushing storage rack offers the option of precisely positioning tools using a 3-point support. Pins and bolts are integrated in the storage module and in the adapter plates for this purpose. The adapter plates for storage are available in horizontal or vertical variants. The horizontal intermediate plate is fitted bottom-sided onto the CPS-A, and the vertical intermediate plate is firmly bolted onto the side using the bolting pattern of the optional modules. The vertical intermediate plates are also available without an integrated drilling pattern for customized solutions.

General notes about the series

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.

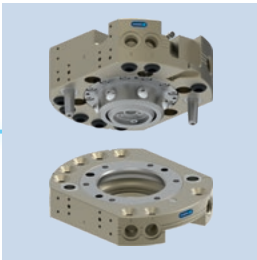
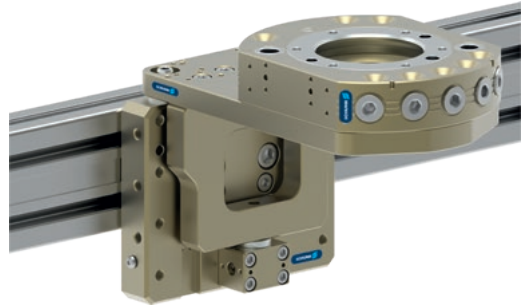


Application example

- ① Automatic tool changers CPS
- ② Optional modules COS
- ③ Modular storage rack CTS
- ④ Universal gripper EGU
- ⑤ 2-finger parallel gripper JGP-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.



Automatic tool changer



Inductive proximity switch

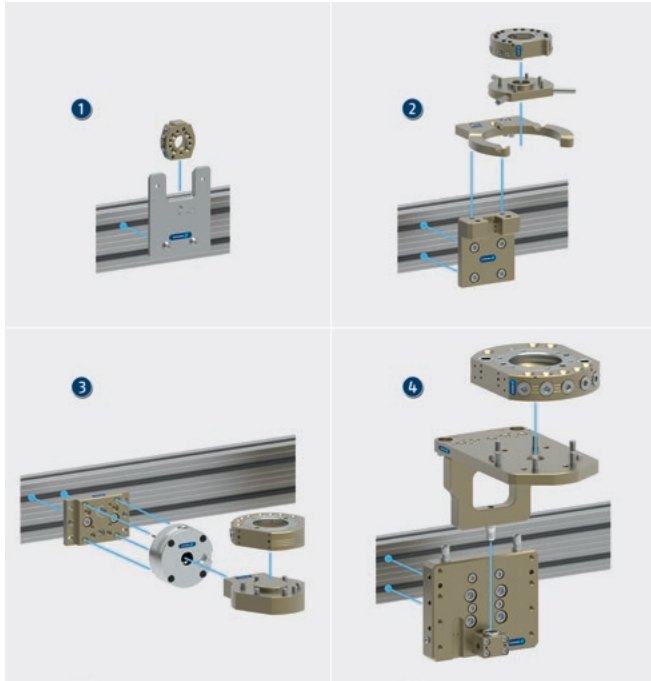


SAS

① For more information on these products can be found on the following product pages or at schunk.com.

Overview of modular storage systems CTS

SCHUNK storage racks CTS are optimally adapted to SCHUNK tool changers and provide stability, flexibility, and a long service life. The modularity of the storage module, adapter plates, stand profiles, and sensor systems enables the compact assembly of a complete package tailored to customized requirements. If you have already found the right tool changer for your application, you will find an overview of our storage modules for your system on the following page. The matching extruded upright profiles can be found after the storage modules.

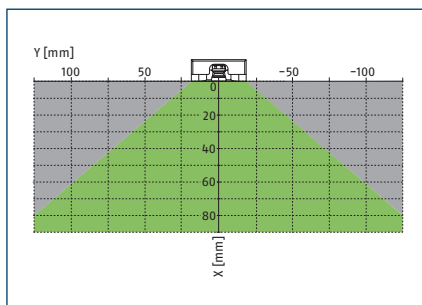
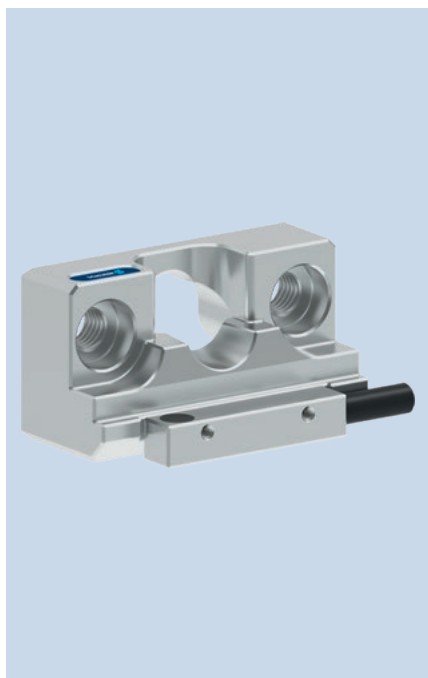


- ❶ Tool stand CTS T
- ❷ Storage module CTS C
- ❸ Storage module CTS B
- ❹ Storage module CTS P

	CTS T-001	CTS T-016	CTS C-016	CTS C-025	CTS B-016	CTS B-100	CTS B-300	CTS P-050	CTS P-150	CTS P-500
CPS 001	x									
CPS 007		x			x			x		
CPS 011			x		x					
CPS 020				x		x		x		
CPS 021				x		x		x		
CPS 029						x		x		
CPS 040						x		x		
CPS 041						x		x		
CPS 046						x		x		
CPS 060						x			x	
CPS 071						x			x	
CPS 076						x			x	
CPS 110							x		x	
CPS 160							x			x
CPS 210							x			x
CPS 310										x
CPS 510										

	CTS B-016	CTS B-100	CTS B-300							
CPB 040	x									
CPB 050	x									
CPB 063		x								
CPB 080		x								
CPB 100		x								
CPB 125			x							
CPB 160			x							

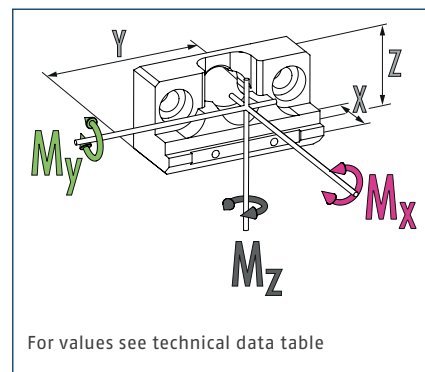
Center of gravity position of tool, passive variant



- Permitted range
- Inadmissible range

For the passive variant, the center of gravity of the tool must be within the permissible range according to the diagram. In addition, the occurring moments must not exceed the permissible values.

Dimensions and maximum loads



- ① This is the max. sum of all static loads that are permitted to act on the storage system to ensure error-free functioning.

Technical data

Description		CTS B-016-MM	CTS B-016-MM-V
Variant		Passive	Active
ID		1459336	1589479
Recommended CPS size		007, 011	007, 011
Recommended CPB size		040, 050	040, 050
max. load capacity	[kg]	16	16
Installation position		horizontal	any
Pull-down force, spring	[N]		200
Pull-down force, turbo	[N]		750
Pneumatic connection thread open			M3
Pneumatic connection thread Turbo			M3
Tool presence monitoring		optional	optional
Unlocking pressure	[bar]		6
Actuation pressure	[bar]		6
Min./max. ambient temperature	[°C]	5/60	5/60
Weight	[kg]	0.04	0.25
Moment load Mx	[Nm]	12	18
Moment load My	[Nm]	12	18
Moment load Mz	[Nm]		18

Technical drawing of a mechanical part, showing three views: front view, top view, and section B-B.

Front View:

- Overall width: 37
- Distance between centers of the two outer circular features: 27
- Overall height: 20.1
- Distance from the top edge to the center of the outer circular features: 16.6 ± 0.1
- Radius of the outer circular features: 6.6
- Distance from the center of the outer circular features to the center of the central semi-circular feature: 14 ± 0.1

Top View:

- Overall width: 16.5
- Distance from the left edge to the center of the left circular feature: 10
- Distance from the right edge to the center of the right circular feature: 1.8
- Distance from the bottom edge to the center of the right circular feature: 2.9

Section B-B:

- Section line B-B is indicated by arrows pointing to the front view.
- Section B-B shows the internal structure of the part, including the central semi-circular feature and the two outer circular features.
- Dimensions for Section B-B:
 - Overall width: 80
 - Distance from the left edge to the center of the left circular feature: 3.35
 - Distance from the right edge to the center of the right circular feature: 72
 - Distance from the bottom edge to the center of the right circular feature: 3.5
 - Thread specification for the two outer circular features: M5 (2x)
 - Distance between the centers of the two outer circular features: $\varnothing 8$ (2x)

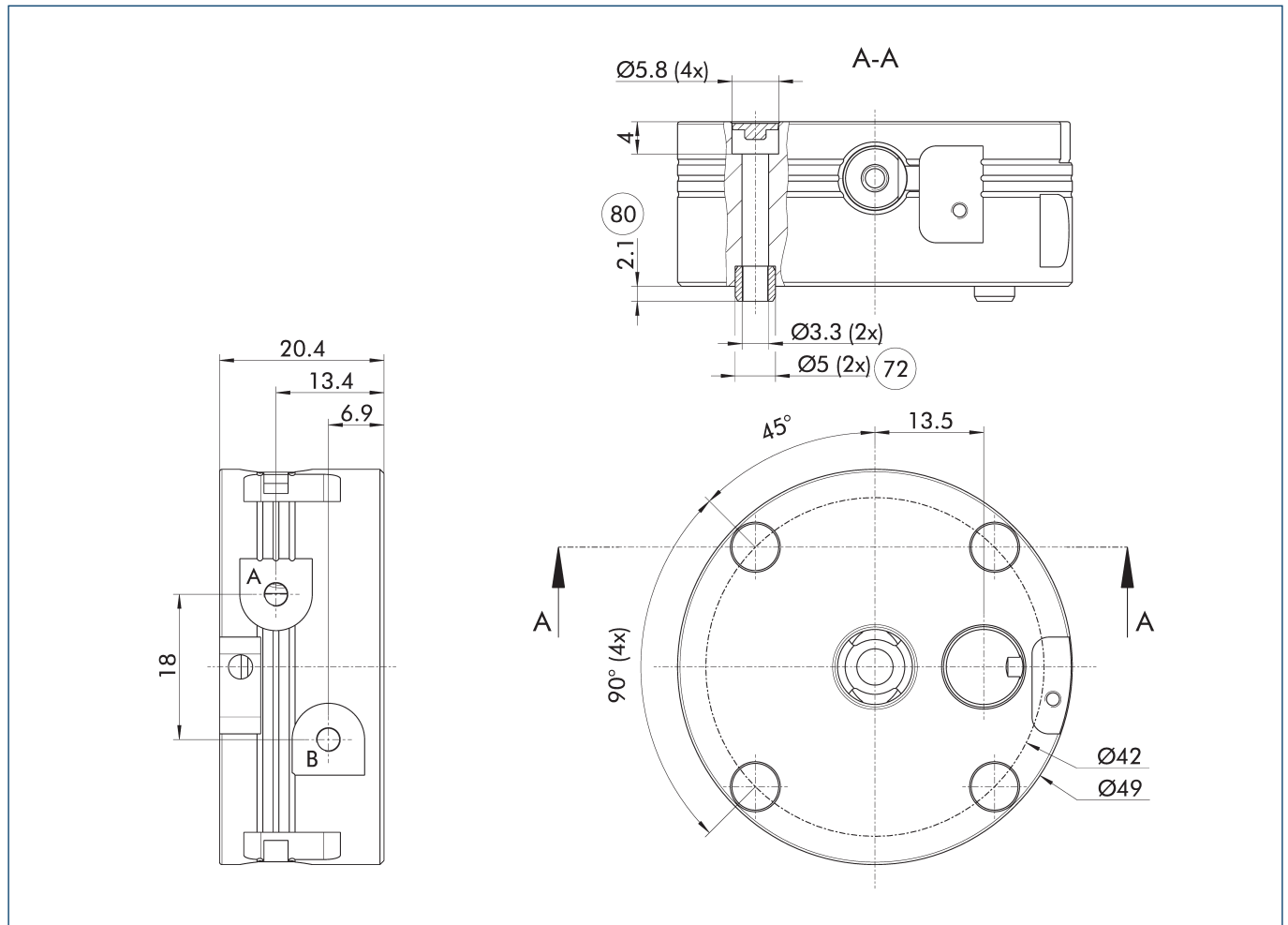
⑦2 Fit for centering sleeves

⑧ Depth of the centering sleeve hole in the counter part

CTS B-016

Storage module

Main view CTS B-016-MM-V

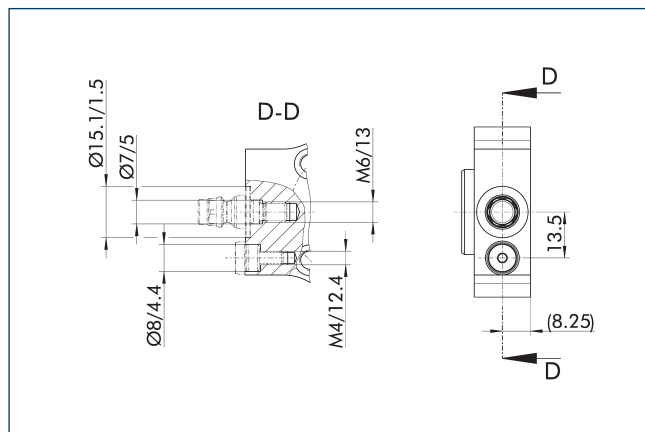


The drawing shows the storage module in the basic version.

A Unlocking
B Locking

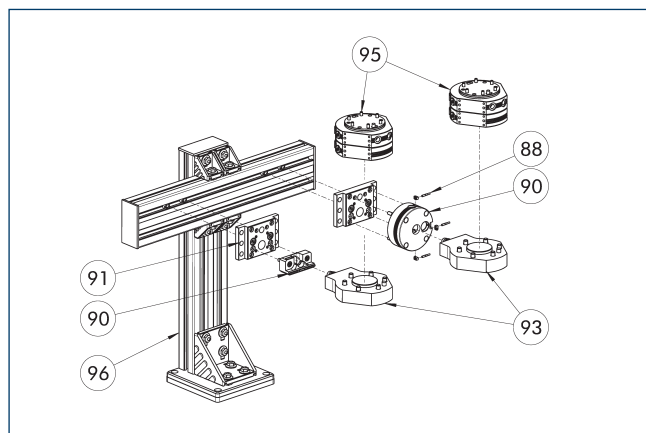
72 Fit for centering sleeves
80 Depth of the centering sleeve hole in the counter part

Adapter plate design CTS-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.

Modular storage rack CTS B



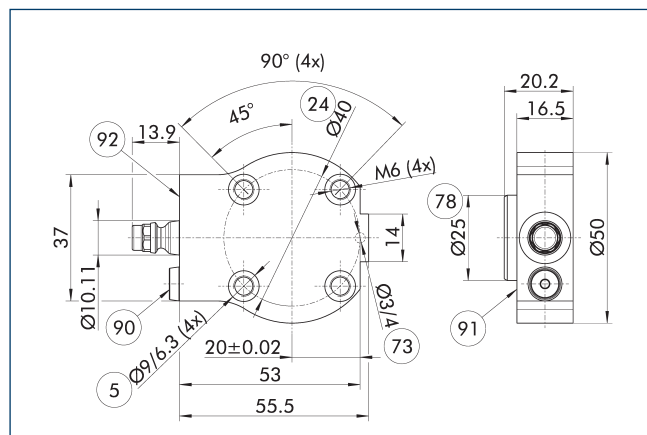
- | | |
|-------------------|--------------------------------|
| 88 Sensor system | 93 Adapter plate |
| 90 Storage module | 95 Automatic tool changers CPS |
| 91 Mounting plate | 96 Profile structure CTS |

Description	ID	
Storage pins		
CTS B-016-AB	1529468	
Adapter plates		
CTS B-016-AH-CPS005-011	1523807	
CTS B-016-AH-V-CPS005-011	1523840	
CTS B-016-AV-7B	1523812	
CTS B-016-AV-CPB040-050	1622615	
CTS B-016-AV-V-7B	1523842	
CTS B-016-AV-V-CPB040-050	1624152	
Mounting plate		
CTS B-MP-0	1489443	
CTS B-MP-1	1594752	
Anti-rotation protection		
CTS B-016-V-AR	1542887	

CTS B-016

Storage module

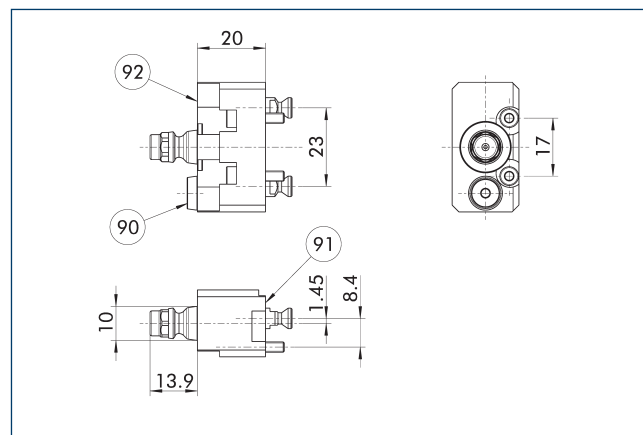
Adapter plate CTS B-016-AH-CPS005-011



- ⑤ Through hole for connection with screws
- ②④ Bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering
- ⑨⑩ Anti-twist protection (only with the adapter plate for CTS B -V)
- ⑨① Mounting side CPS-A
- ⑨② Mounting side CTS B (-V)

Description	ID	matching tool changer
Adapter plates		
CTS B-016-AH-CPS005-011	1523807	CPS 011
CTS B-016-AH-V-CPS005-011	1523840	CPS 011

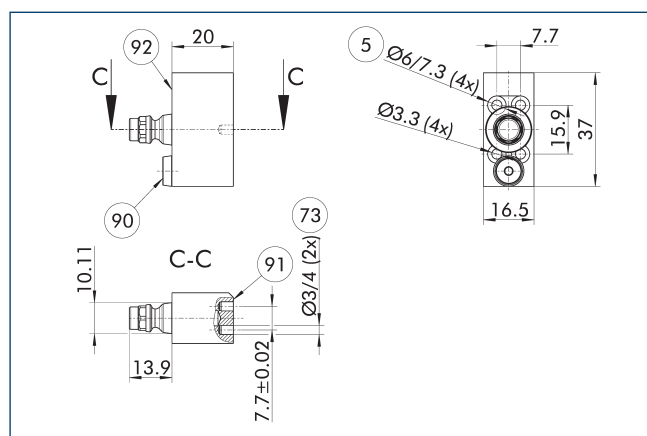
Adapter plate CTS B-016-AV-CPB040-050



- ⑨⑩ Anti-twist protection (only with the adapter plate for CTS B -V)
- ⑨① Mounting side CPB-A
- ⑨② Mounting side CTS B

Description	ID	matching tool changer
Adapter plates		
CTS B-016-AV-CPB040-050	1622615	CPB 040, CPB 050
CTS B-016-AV-V-CPB040-050	1624152	CPB 040, CPB 050

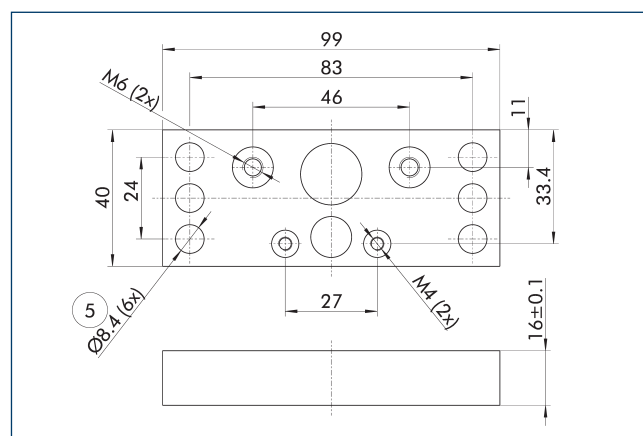
Adapter plate CTS B-016-AV-7B



- ⑤ Through hole for connection with screws
- ⑦③ Fit for centering pins
- ⑨⑩ Anti-twist protection (only with the adapter plate for CTS B -V)
- ⑨① Mounting side CPS-A
- ⑨② Mounting side CTS B (-V)

Description	ID	matching tool changer
Adapter plates		
CTS B-016-AV-7B	1523812	CPS 007
CTS B-016-AV-V-7B	1523842	CPS 007

Mounting plate CTS B-MP-0



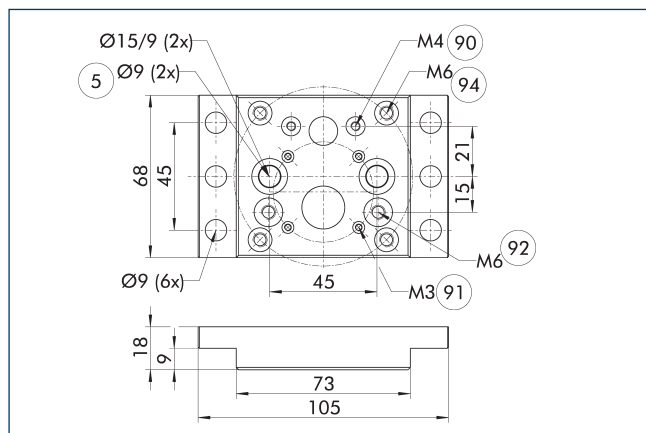
- ⑤ Through hole for connection with screws

Mounting plate for fastening and centering of the CTS B. The mounting plate is optional but recommended to ensure high-precision positioning.

Description	ID	
Mounting plate		
CTS B-MP-0	1489443	

- ① The mounting plate is only suitable for the passive storage module.

Mounting plate CTS B-MP-1

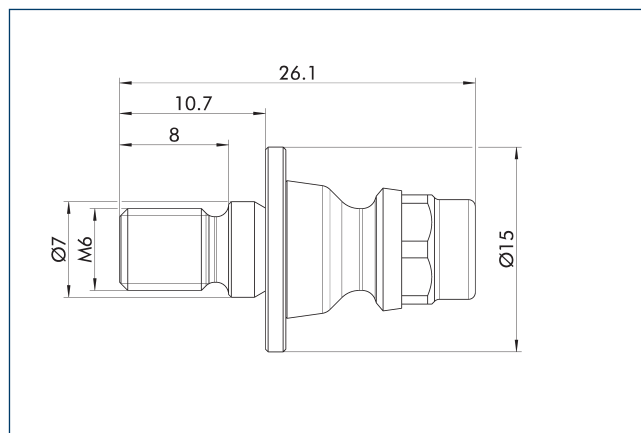


- ⑤ Through hole for connection with screws
- ⑨① CTS B-MM-016-V
- ⑨② CTS B-MM-100
- ⑨③ CTS B-MM-100-V

Mounting plate for fastening and centering of the CTS B. The mounting plate is optional but recommended to ensure high-precision positioning.

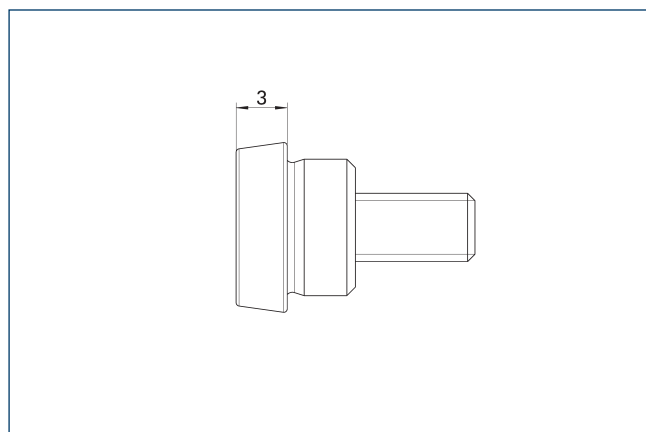
Description	ID
Mounting plate	
CTS B-MP-1	1594752

Storage bolt CTS B-016-AB



Description	ID
Storage pins	
CTS B-016-AB	1529468

Anti-twist protection CTS B-016-V

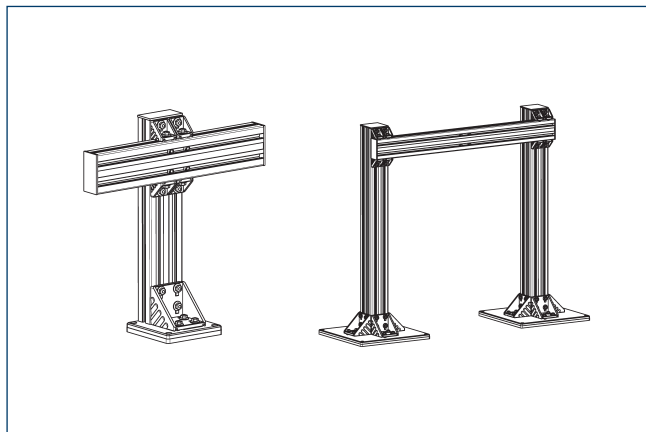


Description	ID
Anti-rotation protection	
CTS B-016-V-AR	1542887

CTS B-016

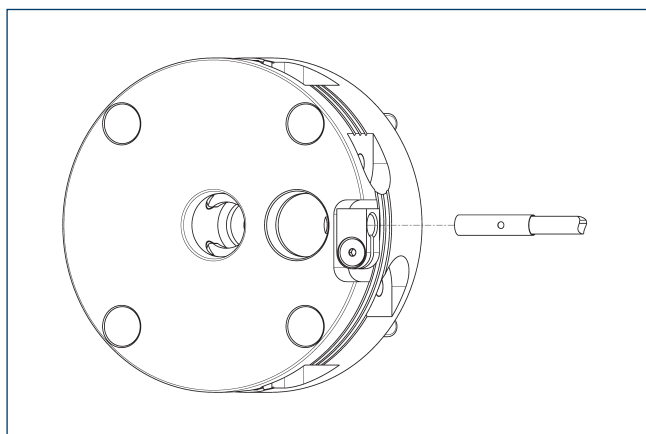
Storage module

Profile



Description	ID	
Mounting bracket		
CTS MB-45x45	1332525	
Base plate		
CTS BP-45x90	0302580	
Cross profile 45 x 90 mm		
CTS PH-45x90-1200	1356073	
CTS PH-45x90-1500	1496166	
CTS PH-45x90-300	1564976	
CTS PH-45x90-460	0303229	
CTS PH-45x90-610	1419762	
CTS PH-45x90-920	0303228	
Stand profile section 45 x 90 mm		
CTS PV-45x90-1300	30070338	
CTS PV-45x90-300	30077021	
CTS PV-45x90-460	1564977	
CTS PV-45x90-610	0302586	
CTS PV-45x90-890	30046674	
Attachment bracket		
CTS BB-90x90	0302581	

Tool presence monitoring CTS B-V

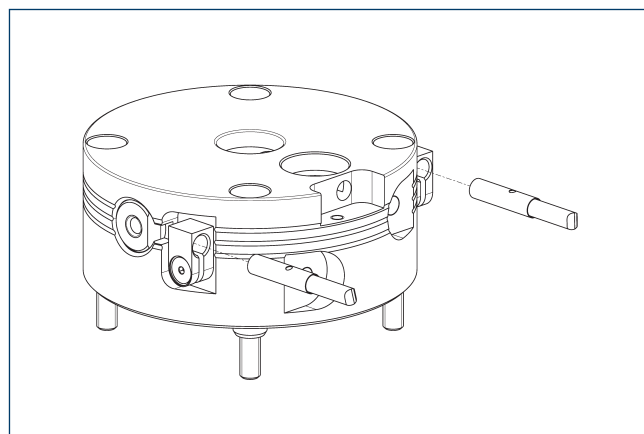


The attachment kit includes one sensor and two brackets.

Description	ID	
Attachment kit for proximity switch		
AS-CTS-B-V-IN30-T	1523878	

- ① This attachment kit is optional and must be ordered separately as an accessory.

Locking monitoring CTS B -V

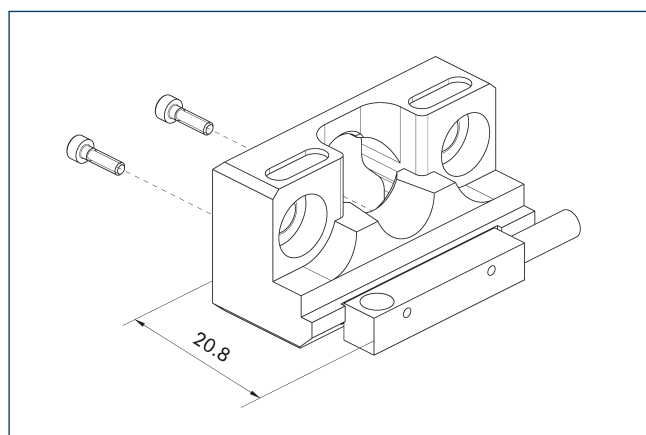


One sensor and one bracket are included in each attachment kit. Two attachment kits are required to monitor both states (locked/unlocked).

Description	ID	
Attachment kit for proximity switch		
AS-CTS-B-V-IN30K-L	1523876	

- ① This attachment kit is optional and must be ordered separately as an accessory.

Tool presence monitoring CTS B



The sensor is screwed onto the storage module from behind. When using a sensor system, a mounting plate is recommended.

Description	ID	Often combined
Inductive proximity switch		
IN 5-S-M12	0301569	
IN 5-S-M8	0301469	
Connection cables		
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	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	



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