

Hand in hand for tomorrow



Technical Product Guide CPS | COS | CPB | COB | Accessories

Version english
27.02.2026



DISCLAIMER

This presentation contains **confidential information** intended **for internal use only**.

Do **not share or communicate** with **customers** or use beyond intended purpose.

Confidentiality is a team effort – we all play a major role in protecting sensitive data



Therefore, you must continue handling the following content with the necessary care and confidentiality.

Table of contents

- 1. CPS
 - 1.1 CPS In general
 - 1.2 CPS Characteristics
 - 1.3 CPS Design and offer preparation
 - 1.4 CPS Competitive comparison
 - 1.5 CPS Matching List
 - 1.6 CPS Q&A
 - 1.7 CPS Tests and field tests
- 2. COS
 - 2.1 COS In general
 - 2.2 COS Characteristics
 - 2.3 COS Matching List
 - 2.4 COS Q&A
- 3. CPB
 - 3.1 CPB In general
 - 3.2 CPB Characteristics
 - 3.3 CPB Design and offer preparation
 - 3.4 CPB Competitive comparison
 - 3.5 CPB Q&A

Only for internal use

Table of contents

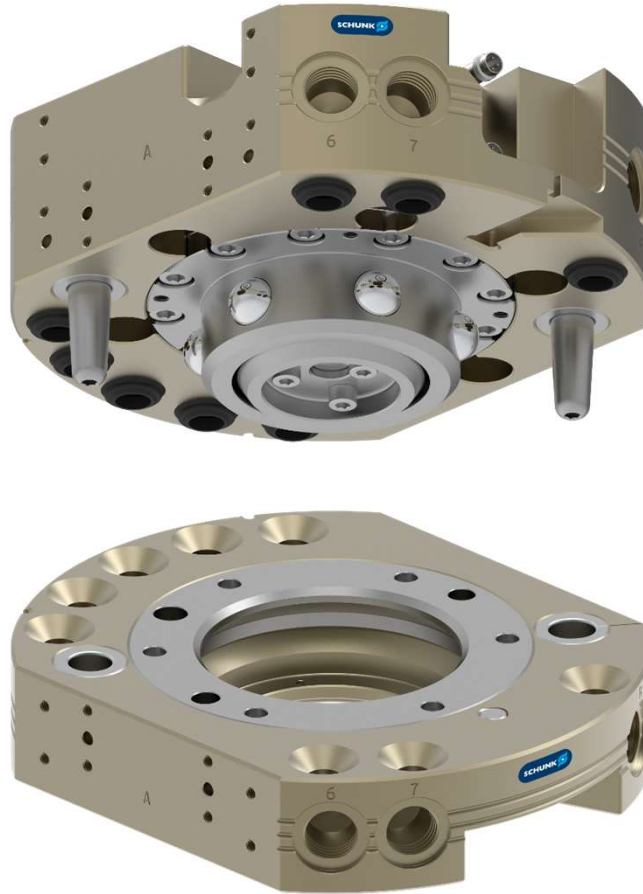
- 4. COB
 - 4.1 COB In general
 - 4.2 COB Characteristics
 - 4.3 COB Matching List
 - 4.4 COB Q&A
- 5. CTS
 - 5.1 Matching List

Only for internal use

CPS

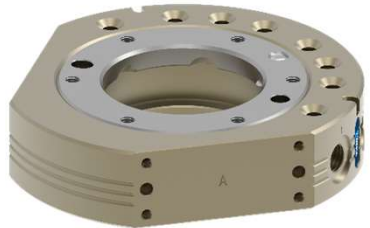
CPS – 18 sizes

Changer Pneumatic SCHUNK



Only for internal use

Naming systematic CPS



CPS 040-K-S-HT-R19

CPS	040	K	S	XX	XX	XX
CPS	040	A	I	XX	XX	XX
series	size	K = master A = Adapter	Sensors*	versions	Optional modules	
Changer Pneumatic SCHUNK			Only for sizes 007, 029, 040, 046, 076, 110, 160, 210, 310, 510	E.g. High temperature (HT) etc.	If flat B is occupied and flat A isn't -> 0 on A if only flat A is occupied and flat B isn't -> no 0 on flat B, omitted	

examples:

CPS 040-K-S-HT-0-R19
 CPS 040-K-S-Z10TP-Z12R19WR19
 CPS 046-K-S-0-R19-OR19-R19
 CPS 046-K-S-0-R19-R19-R19
 CPS 160-K-S-R19
 CPS 160-K-S-OR19
 CPS 160-K-S-00R19
 CPS 160-K-S-R19R19
 CPS 160-K-S-0-Z28R190R19

| R19 module on flat B
 | TP with spacer (Z10) on flat A, adapter plate (Z12) on flat B, then pos. 1: R19W, pos. 2: R19
 | R19 module on flats B, C pos. 2, D
 | R19 module on flats B, C pos. 1, D
 | R19 module on flat A pos. 1
 | R19 module on flat A pos. 2 (center)
 | R19 module on flat A pos. 3
 | R19 module on flat A pos. 1 und 3
 | adapter plate (Z28) on flat B, then pos. 1: R19, pos. 3: R19



Note:

H1 grease is already standard
 Centering Boss no option, standard is the respective ISO-centering boss.
 Old version „SIP“ (applies to sizes 011, 020, 021, 041, 060, 071) is no longer available preassembled,
 so this version no longer appears in the naming

Only for internal use

CPS preferred products for each target load range

Load group	size	Preferred product**	Advantages of the preferred product
<16kg	CPS 001 CPS 005* CPS 007 CPS 011	CPS 007	– Locking monitoring integrated in the housing – ISO-flange robot side – Instead of 5 integrated pneumatic connections, now 6x M5 * Not in the catalog
<35kg	CPS 020 CPS 021 CPS 029	CPS 021 CPS 029	– Bigger pneumatic feed-through in the housing (G 1/8" instead of M5) – 2 mounting flats or even 3 (at size 029)
<50kg	CPS 040 CPS 041 CPS 046	CPS 040	– Locking monitoring integrated in the housing
<100kg	CPS 060 CPS 071 CPS 076	CPS 076	– Locking and presence monitoring prepared and integrated in the housing – ISO-flange robot side
<300 kg	CPS 110 CPS 160 CPS 210	CPS 110 CPS 160 CPS 210	– Locking and presence monitoring prepared and integrated in the housing – ISO-flange robot side
<700 kg	CPS 310	CPS 310	– Locking and presence monitoring prepared and integrated in the housing – ISO-flange robot side
<960 kg	CPS 510	CPS 510	– Locking and presence monitoring prepared and integrated in the housing – ISO-flange robot side

** compatible CPB size see [here](#)

Only for internal use

! competitors always offer monitoring sensors as a separate item, actively informing customers

CPS- Characteristics

CPS vs. SWS



CPS	SWS
H1 grease locking mechanism	Mobilgrease XHP 222 Special
CPS 007 mounting screws preassembled on the robot side must be used, Reason: wall thickness of the piston chamber adjusted resulting in a smaller hole depth. ATTENTION: do not use ATI screws, otherwise the screws will ride out and the master can't properly be locked with the tool side – could lead in worst case to a loss of the tool	Not preassembled yet
Additional media feed-through CPS 007: 6 x M5 pneumatic connections* CPS 046: 2 x G1/8", 2 x M5 pneumatic connections* * additional seals on the master side needs to be removed when used with a SWA (old product) CPS 001: now only available with Eo6	Unitl now SWS 007: 5 x M5 pneumatic connections SWS 046: none SWS 001: previously available with Eo4 und Eo6
Size with SIP (011, 020, 021, 040, 041, 060, 071) -> the SIP mounting kit is available separately and includes a "lance"	New SIP mounting kits can be used for SWS. The incleded „lance“ can be disposed of and isn't needed for the SWS. Attention: for the SWK-011 there is an additional mounting kit: 1603589, the new mounting kits can't be used with this size
SCHUNK Engineering from now on possible	currently possible to a limited extent
Integrated spring minimization of gap between head and adapter in case of pressure failure	No spring until now -> gap when pressure failure
Symbols for lock and unlock connection	Until now designated with „L“ and „U“
CPS is always delivered with a defined centering boss -> others on request, customer must rebuild this themselves	Unit now: Customer was able to purchase SWK with different centering bosses

Only for internal use

Technical improvements: SWS vs. CPS

	SWS	CPS
Housing and functional parts		
Aluminium housing	EN-AW 6061	EN-AW 7075
Tensile strength [Mpa]		+80% better than SWS
hardness [HV]		Hard anodized +100% compared to SWS
Functional parts made out of steel	440C SS (1.4125)	X90CrMoV18 (1.4112)
Hardness [HRC]	57	57
MTTFd-Value		ISO-13849-2:2012 Value = 150 years „mechanical parts“



Advantage CPS:

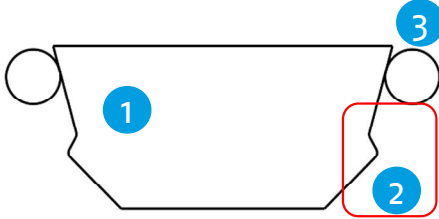
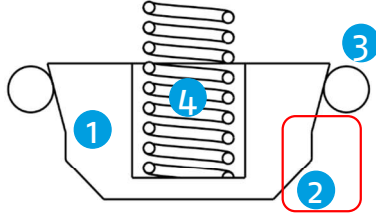
Robust material means maximum performance

Steel parts are used in all stationary clamping systems therefore cost efficiency for SCHUNK

Only for internal use

CPS	SWS
Size 11 spring moves to block (reason pending)	No spring installed so far
Appearance: Housing color: SCHUNK Green Three grooves -> Recognition	Appearance: Housing color: Black No grooves
Data Matrix Code (DMC) -> Customer can scan this with a phone like a QR code -> Customer receives further information	Did not exist so far
Serialization -> Advantage for after-sales, customer can provide service serial number	Did not exist so far
Size with piston stroke controll old (SIP) do have a additional „lance“ in the mounting kit. Reason: Due to the spring the „lance“ is required for the CPS module. <u>Important:</u> Only for size 011 there are two SIP mounting kits for the CPS 011-K: 1596403	The "lance" from the SIP mounting kits is not needed. <u>Important:</u> Only for size 011 there are two SIP mounting kits for the SWK-011: 1603589

Fail-safe locking mechanism SWS vs. CPS

SWS	CPS
 The diagram shows a cross-section of a piston (1) with a negative bevel (2) on its right side. A locking ball (3) is positioned at the top right, resting on the bevel. A red box highlights the bevel area.	 The diagram shows a cross-section of a piston (1) with a 0° slope (2) on its right side. A locking ball (3) is positioned at the top right, resting on the slope. A spring (4) is located in the piston chamber, pushing the piston to the right. A red box highlights the slope area.
1 Piston 2 negative bevel on the piston 3 locking ball	1 Piston 2 0° slope on the piston 3 locking ball 4 spring in piston chamber
Lightbulb icon: Locking system is still self-locking in the case of pressure loss same function as before. Improvement: Spring in the piston chamber on CPS reduces gap between master and adapter – compared to SWS smaller Note: Negative bevel on the cylinder piston is patented by ATI	

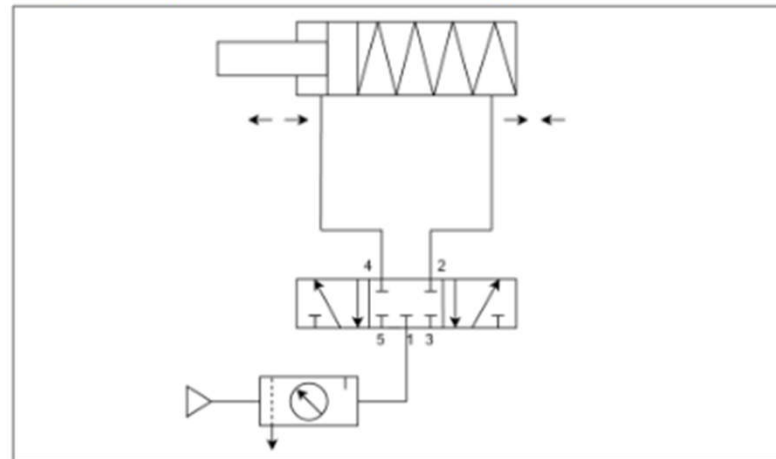
Only for internal use

Pneumatic connections

Due to the internally installed spring of the CPS, **the recommended pneumatic connection changes** compared to the SWS.

Please always refer to the current operating instructions for the CPS.

5.3.1 Beispiel für pneumatische Ansteuerung



Hauptluftanschlüsse CPS-K: Verriegeln -><-, Entriegeln <-->

Example illustration

It is important to always use the current operating instructions, which are located in the SalesToolBox.

Only for internal use

Matching list*: SWS vs. CPS

Handling weight	ID SCHUNK SWS	Description	ID SCHUNK CPS	Description
<16kg	302290	SWK-001-000-000	1590948	CPS 001-K
	302291	SWA-001-000-000	1619548	CPS 001-A
	302307	SWK-005-000-000	1619553	CPS 005-K
	302308	SWA-005-000-000	1619554	CPS 005-A
	1421514	SWK-007-000-000-IN00	1591016	CPS 007-K
	1405836	SWK-007-000-000-IN03	1613262	CPS 007-K-S
	1365513	SWA-007-000-000	1591017	CPS 007-A
	302316	SWK-011-000-000	1619555	CPS 011-K
<35kg	302317	SWA-011-000-000	1619558	CPS 011-A
	302322	SWK-020-000-000	1591033	CPS 020-K
	302323	SWA-020-000-000	1591034	CPS 020-A
	302326	SWK-021-000-000	1619570	CPS 021-K
	302327	SWA-021-000-000	1619572	CPS 021-A
	n. a.	SWK-029-0-0-0-So	1590976	CPS 029-K
	1499175	SWK-029-0-0-0-SM	1613280	CPS-029-K-S
<50kg	1499191	SWA-029-0-0-0	1590977	CPS 029-A
	302374	SWK-040Q-000-000	1590978	CPS 040-K
	302364	SWK-040Q-000-000-SG	1613282	CPS 040-K-S
	302342	SWK-040-000-000	1590981	CPS 040N-K
	302343	SWA-040-000-000	1590979	CPS 040-A
	302346	SWK-041-000-000	1619573	CPS 041-K
	302347	SWA-041-000-000	1619574	CPS 041-A
	1330577	SWK-046-0-0-000-0-SM	1613284	CPS 046-K-S
	n. a.	SWK-046-0-0-000-So	1590984	CPS 046-K
	1315663	SWA-046-0-0-000-0	1590986	CPS 046-A

*List of SWS ID's that are replaced by CPS ID's

Only for internal use

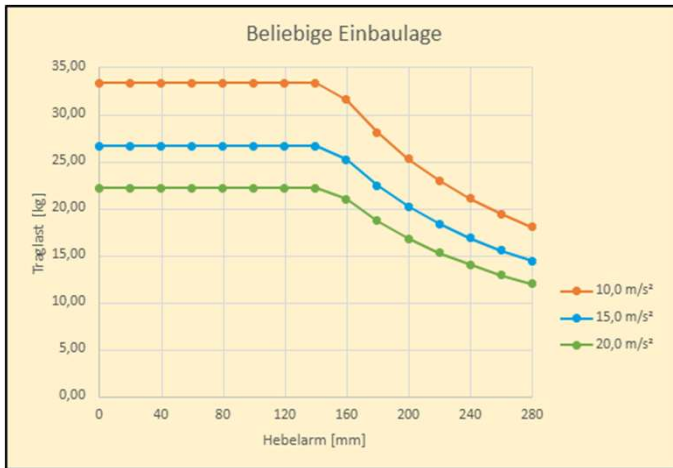
Matching list*: SWS vs. CPS

Handling weight	ID SCHUNK SWS	Description	ID SCHUNK CPS	Description
<100kg	302362	SWK-060-000-000	1590997	CPS 060-K
	302363	SWA-060-000-000	1591020	CPS 060-A
	302370	SWK-071-000-000	1591027	CPS 071-K
	302371	SWA-071-000-000	1591028	CPS 071-A
	302392	SWK-076-000-000-SG	1613287	CPS 076-K-S
	302390	SWK-076-000-000	1591031	CPS 076-K
	302391	SWA-076-000-000	1591035	CPS 076-A
<300 kg	302412	SWK-110-000-000-SM	1613289	CPS 110-K-S
	302410	SWK-110-000-000	1590259	CPS 110-K
	302411	SWA-110-000-000	1590282	CPS 110-A
	302440	SWK-160-000-000-SM	1613301	CPS 160-K-S
	1324633	SWK-160-000-000	1590284	CPS 160-K
	302441	SWA-160-000-000	1590286	CPS 160-A
	9962315	SWK-210-0-0-0-0-SM	1613303	CPS 210-K-S
	n. a.	SWK-210-0-0-0-0-So	1590992	CPS 210-K
	9948542	SWA-210-0-0-0-0	1590994	CPS 210-A
<700 kg	9949434	SWK-310-0-0-0-0-SM	1613305	CPS-310-K-S
	n. a.	SWK-310-0-0-0-0-So	1590995	CPS 310-K
	9948544	SWA-310-0-0-0-0	1590996	CPS 310-A
	9948545	SWK-510-0-0-0-0-SM	1613306	CPS 510-K-S
	n. a.	SWK-510-0-0-0-0-So	1590998	CPS 510-K
	9948546	SWA-510-0-0-0-0	1590999	CPS 510-A

*List of SWS ID's that are replaced by CPS ID's

Only for internal use

Load diagrams – Description



NEW representation: Customers can quickly find a suitable size without detailed calculation of the maximum moments and forces.

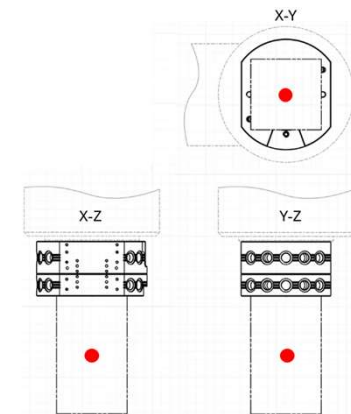
Procedure:

Depending on the additional robot acceleration and the lever arm*, the maximum load that can be attached to the tool changer can be determined.

*Lever arm:

The lever arm shown is the center of gravity distance in the Z direction (extension of the last robot axis). This diagram assumes that the load is mounted centrally and that the center of gravity of the load is not shifted in the X and Y directions.

Centric load case



As soon as an off-center center of gravity load is present: calculate M_{xyz} dynamically and compare it with the dynamic moment values given in the catalog.

Only for internal use

Load diagram – selection

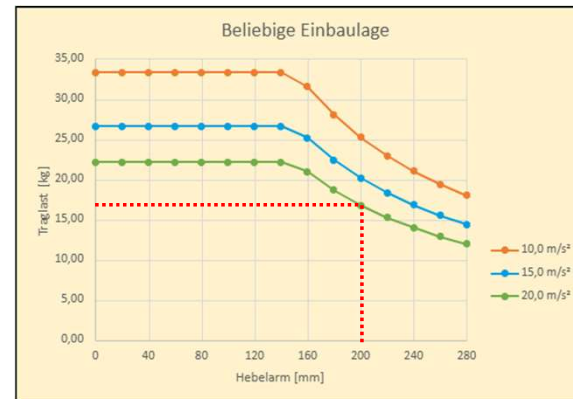
Examples:

Details:

Lever arm in Z-direction: 200 mm

robot acceleration $20 \frac{m}{s^2}$

Result: 17 kg

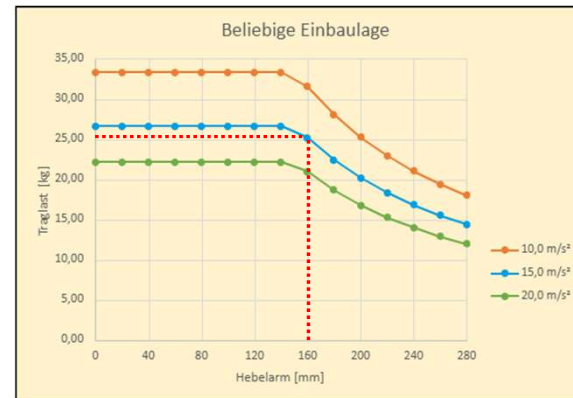


Details:

Lever arm in Z-direction : 160 mm

robot acceleration $15 \frac{m}{s^2}$

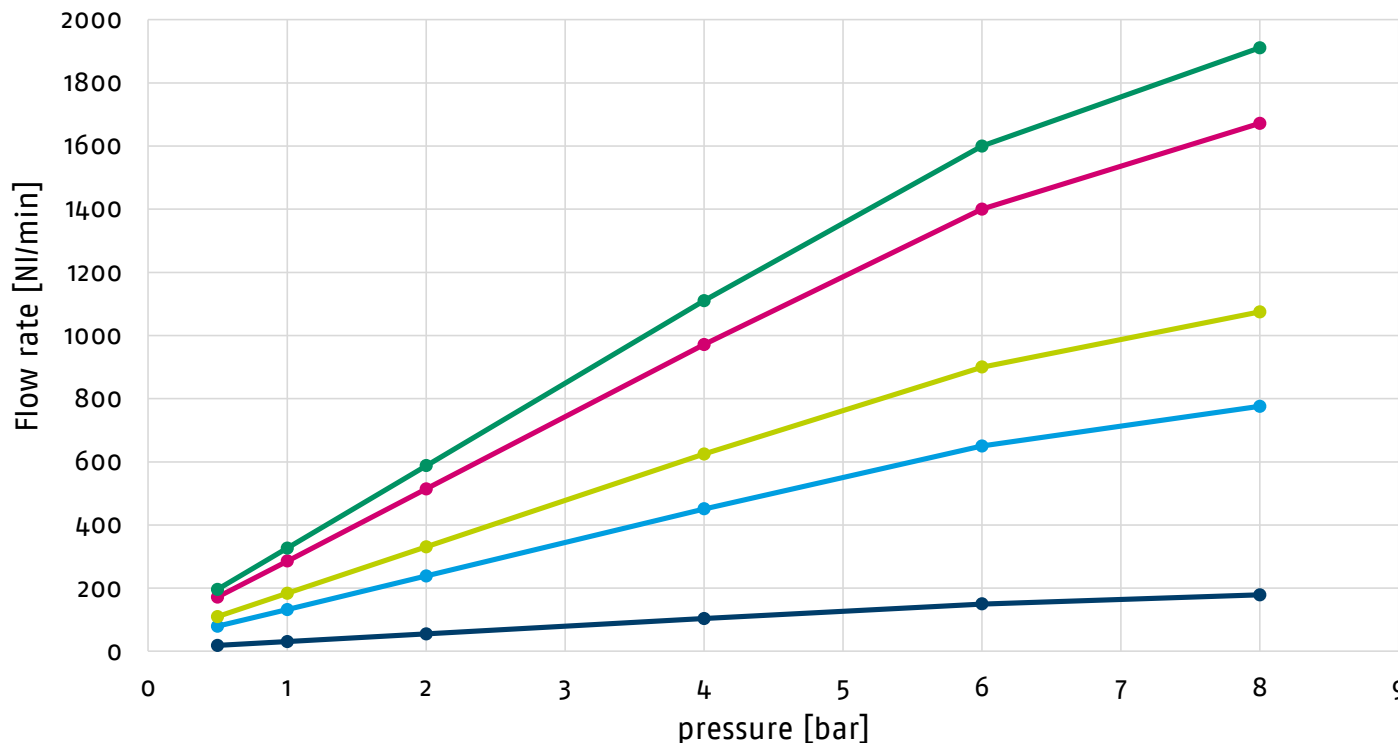
Result: 25,4 kg



Only for internal use

Flow rates integrated pneumatic feed-through

Flow rate compressed air [NI/min]



Size of the radial air connections
in the housing:

— M5 — G1/8" — G1/4" — G3/8" — G1/2"

Only for internal use



Flow rates were determined in
the technical laboratory in
Hausen

"NI/min" = "normal liters per
minute" describes the amount
of air in liters that is passed
through a single air connection
per minute.

Spring forces piston and gap formation

CPS size	001	005	007	011	020	021	029	040N	040	041	046	060	071	076	110	160	210	310	510
Spring force in locked state CPS head[N]	4	22	28	23	68	68	24	78	91	47	104	99	93	104	230	378	378	574	710
Gap formation [mm] with measured tensile force in Z direction centric[N]	–	0,64	0,66	0,4	0,23	0,23	0,3	0,07	0,04	0,14	0,01	0,07	0,14	0,12	0,03	0,05	0,12	0,2	0,3
	–	280	280	280	280	280	560	560	560	560	560	840	840	1120	1682	2800	2800	2800	2800

Note:

Spring force in locked condition: calculated value based on piston position and spring data

Sequence of the test to determine the gap formation:

1. System locked with compressed air
2. Switch off compressed air (air bleed screw -> only spring is effective)
3. Generate a centric tensile load with an external cylinder
4. Measuring gap formation

Only for internal use

1 [@Matyssek, Barbara] bitte BG 510 nochmals prüfen, Zahl falsch/kann nicht sein.
Hübsch, Florian; 2025-03-25T04:19:40.977

BM1 0 [@Hübsch, Florian] Spring force locked der BG 310 und 510 angepasst
Matyssek, Barbara; 2025-03-25T08:26:23.727

Designation system COS Z



COS Z13–K–Interface1 / Interface2

COS		Zo5	K A	Interface 1	Interface 2
Series	Size		K = Kopf A =Adapter		
Changer Optional Module SCHUNK	The letter Z indicates that it is an adapter plate. The two digits have no further meaning		If adapter plate can be mounted on K & A, this description is omitted	S1 S5 S7 K J L 021B (CPS 021 side B) 060B (CPS 060 side B)	S5 K J D (spacer) B (New: bolt COB) JD (J with spacer.) 007B (Storage rack only) EN (L-Servo) A number at the beginning of the second interface = number of interface

Examples :

COS Z12–A–J/2JD	J on 2x J with spacer
COS Z13–K–J/3JD	J on 3x J with spacer
COS Z25–A–21B/K	CPS 021 side B on K
COS Z27–A–60B/J	CPS 060 side B on J
COS Z10–JD	J on J with spacer, fitting on master and adapter

Only for internal use

Adapter plates for modules

ID no.	Description	Interface 1	Interface 2
1584116	COS Z10-JD	J	J with spacer
302460	COS Z11-K-J/2J	J	2x J
302461	COS Z11-A-J/2J	J	2x J
1584112	COS Z12-A-J/2JD	J	2x J with spacer
1584111	COS Z12-K-J/2JD	J	2x J with spacer
1585122	COS Z13-A-J/3JD	J	3x J with spacer
1584118	COS Z13-K-J/3JD	J	3x J with spacer
1584120	COS Z14-J/4J	J	4x J
1584131	COS Z15-J/4JD	J	4x J with spacer
1584127	COS Z21-A-S7/S5	S7	S5
1585128	COS Z21-K-S7/S5	S7	S5
1584124	COS Z22-A-S7/K	S7	K
1584123	COS Z22-K-S7/K	S7	K
1584117	COS Z23-A-K/J	K	J
1584126	COS Z23-K-K/J	K	J
1584099	COS Z24-A-21B/J	CPS 021-A side B	J
1584110	COS Z24-K-21B/J	CPS 021-K side B	J
1585107	COS Z25-A-21B/K	CPS 021-A side B	K
1585106	COS Z25-K-21B/K	CPS 021-K side B	K

ID no.	Description	Interface 1	Interface 2
1585121	COS Z26-A-J/K	J	K
1585120	COS Z26-K-J/K	J	K
1584113	COS Z27-A-60B/J	CPS 060 side B	J
1584128	COS Z27-K-60B/J	CPS 060 side B	J
1584122	COS Z28-160J/3JD	J	3x J with spacer
1584093	COS Z50-A-LD	L	L with spacer
1584090	COS Z51-A-L/2J	L	2x J
1584096	COS Z51-K-L/2J	L	2x J
1584125	COS Z52-A-L/2JS	L	2x JS (builds smaller compared to Z51)
1584129	COS Z52-K-L/2JS	L	2x JS (builds smaller compared to Z51)
1584114	COS Z53-A-L/3J	L	3x J
1584119	COS Z53-K-L/3J	L	3x J
1585109	COS Z54-A-L/4J	L	4x J
1584098	COS Z54-K-L/4J	L	4x J
1585104	COS Z55-A-L/5J	L	5x J
1585126	COS Z55-K-L/5J	L	5x J
1585144	COS Z56-A-L/3EN	L	3x EN
1585129	COS Z56-K-L/3EN	L	3x EN
1610155*	COS Z83-J/B	J	B
1618197*	COS Z84-K-S7/B	S7	B
1618198*	COS Z84-A-S7/B	S7	B

* are listed in the respective catalog chapters

Only for internal use

Spare parts packages ETP

Spare parts packages (ETP) are available for the feed-throughs of the CPS XXX-K, see operating manual CPS.

The ETP always covers 5 seals or 5 seals with 5 support rings.

Only for internal use

CPS – Competitive comparison



Competitive Comparison

		Reference product	Comparison product						
Handling weight	Feature	SCHUNK CPS 007	SCHUNK CPS 011	SCHUNK CPB 040	ATI QC 007	ATI QC 011	Zimmer WWR 040	Stäubli MPS 015	Stäubli MPS 025
<16kg	Teachability	Ball locking		Clamping slide, smaller insertion play in XY, Z			Line-contacting locking bolts, planar contact	Ball mechanism with cross-shaped positioning surfaces	Ball mechanism with cross-shaped positioning surfaces
	Safety (in case of air failure)	Fail safe + spring (gap minimization)			Gap formation	Gap formation	spring	spring	spring
	Max. moment/ Load capacity	30/50 Nm (dynamisch), 16 kg	35/50 Nm, 16 kg	100/100 Nm, 20 kg	61/38 Nm, 16 kg	61/38 Nm, 16 kg	90/70 Nm (static), 20 kg	15/15 Nm (static) 52/52 Nm (dynamic), 10 kg	34/34 Nm (static) 119/119 Nm (dynamic), 20 kg
	mass/ interference contour	0,24 kg/ 54,5 x 48,3 x 45,5	0,22 kg / 50 x 36,1	0,35 kg/ 91 x 40,5	0,24 kg/ 54,5 x 48,3 x 45,5	0,22 kg/ 50 x 36,1	0,21 kg / 50 x 37	0,4 kg / 42 x 46	0,58 kg / 54 x 46
	Mounting pattern ISO 9409	ISO-031.5	No ISO flange	ISO-040		No ISO flange	ISO-040		ISO-040
	lifetime/ number of cycles	5 Mio.						„millions of times“	„millions of times“
	Intergarted pneumatic feed-trough	6x M5			5x M5		4 x M5	8 x M5	8 x M5
	Number mounting patterns	1 mounting pattern		2 mounting patterns				Up to 4 mouting patterns	Up to 4 mouting patterns
	Sensor options	Locking mechanism (inside the housing)	Locking mechanism (additional structure)	Locking and tool presence		Locking (additional structure)	Locking and tool presence	Locking and tool presence	Locking and tool presence

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

CPS – Competitive comparison

Competitive Comparison



Reference product

Comparison product

Handling weight	Feature	SCHUNK CPS 021	SCHUNK CPS 020	SCHUNK CPS 029	SCHUNK CPB 040	SCHUNK CPB 050	ATI QC 020	ATI QC 021	ATI QC 029	Zimmer WWR 050	Stäubli MPS 035	Stäubli MPS 055
<35kg	Teachability	Ball locking			Clamping slide, smaller insertion play in XY, Z	Clamping slide, smaller insertion play in XY, Z				Line-contacting locking bolts, planar contact	Ball mechanism with cross-shaped positioning surfaces	Ball mechanism with cross-shaped positioning surfaces
	Safety (in case of air failure)	Fail safe + spring (gap minimization)					Gap formation	Gap formation	Gap formation	spring	spring	spring
	Max. moment/ Load capacity	100/80 Nm (dynamisch), 25 kg		120/150 Nm (dynamisch), 35 kg	100/100 Nm (dynamisch), 20 kg	125/125 Nm (dynamisch), 35 kg			169/230 Nm (dynamic), 35 kg	100/105 Nm (static), 30 kg	80/80 Nm (static) 280/280 Nm (dynamic), 35 kg	145/106 Nm (static) 507/371 Nm (dynamic), 55 kg
	mass/ interference contour	0,86 kg / 95 x 46		1,7 kg / 100 x 62,3	0,35 kg / 91 x 40,5	0,5 kg / 98 x 40,5			1,7 kg / 100 x 62,3	0,35 kg / Ø63 x 37	0,78 kg / 65 x 46	1,37 kg / 83 x 46
	Mounting pattern ISO 9409	no ISO flange		ISO-050, ISO-040 as an option	ISO-040	ISO-050			ISO-050, ISO-040 as an option	ISO-050	ISO-050	ISO-063
	lifetime/ number of cycles	5 Mio.									„millions of times“	„millions of times“
	Integarted pneumatic feed-trought	8x G1/8	12x M5	4x M5 + 2x G1/8	6x M5	6x M5	12x M5		4x M5 + 2x G1/8	4x M5	8x G1/8 – just without module	10 x G1/8
	Number mounting patterns	2 mounting patterns	1 mounting pattern	3 mounting patterns			1 mounting pattern		3 mounting patterns	1 mounting pattern	Up to 6 mounting patterns, not all are usable with pneumatic is needed	Up to 6 mounting patterns, not all are usable with pneumatic is needed
	Sensor options	Locking (additional structure)		Locking mechanism (inside the housing)	Locking and tool presence	Locking and tool presence			Locking mechanism (inside the housing)	Locking and tool presence	Locking and tool presence	Locking and tool presence

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

CPS – Competitive comparison



Competitive Comparison

Reference product

Comparison product

Handling weight	Feature	SCHUNK CPS 040	SCHUNK CPS 041	SCHUNK CPS 046	SCHUNK CPB 063	ATI QC 040	ATI QC 041	ATI QC 046	Zimmer WWR 063	Zimmer WWR 080	Stäubli MPS 055
<50kg	Teachability	Ball locking			Clamping slide, smaller insertion play in XY, Z				Line-contacting locking bolts, planar contact	Line-contacting locking bolts, planar contact	Ball mechanism with cross-shaped positioning surfaces
	Safety (in case of air failure)	Fail safe + spring (gap minimization)				Gap formation	Gap formation	Gap formation	spring	spring	spring
	Max. moment/ Load capacity	350/350 Nm (dynamisch), 50 kg		350/400 Nm (dynamisch), 50 kg		471/648 Nm (dynamisch), 50 kg	471/648 Nm (dynamisch), 50 kg	678/450 Nm (dynamisch), 50 kg	200/300 Nm (static), 40 kg	300/600 Nm (static), 70 kg	145/106 Nm (static) 507/371 Nm (dynamic), 55 kg
	mass/ interference contour	1,87 kg / 115*62,2		3 kg / 129 x 66	1,2 kg / Ø119 x 58			3 kg / 129 x 66	0,67kg / Ø80 x 45	1,07 kg / Ø100 x 45	1,37 kg / 83x46
	Mounting pattern ISO 9409	no ISO flange		ISO-100	ISO-063			ISO-100	ISO-063	ISO-080	ISO0-63
	lifetime/ number of cycles	5 Mio.									„millions of times“
	Intergarted pneumatic feed-trought	8x G1/8	4x G1/8 + 6x G3/8	2x M5 + 2x G1/8	6 x G1/8		4x G1/8 + 6x G3/8		6x M5	6x M5	10 x G1/8
	Number mounting patterns	2 mounting patterns	1 mounting patterns	4 mounting patterns			1 mounting pattern	4 mounting patterns			Up to 6 mounting patterns, not all are usable with pneumatic is needed
	Sensor options	Locking mechanism (inside the housing)	Locking (additional structure)		Locking and tool presence		Locking (additional structure)		Locking and tool presence	Locking and tool presence	Locking and tool presence

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

CPS – Competitive comparison



Competitive Comparison

Comparison product

Reference product

Handling weight	Feature	SCHUNK CPS 060	SCHUNK CPS 071	SCHUNK CPS 076	SCHUNK CPB 080	SCHUNK CPB 100	ATI QC 060	ATI QC 071	ATI QC 076	Zimmer WWR 100	Zimmer WWR 125	Stäubli MPS 080	Stäubli MPS 130
<100kg	Teachability	Ball locking			Clamping slide, smaller insertion play in XY, Z	Clamping slide, smaller insertion play in XY, Z				Line-contacting locking bolts, planar contact	Line-contacting locking bolts, planar contact	Ball mechanism with cross-shaped positioning surfaces	Ball mechanism with cross-shaped positioning surfaces
	Safety (in case of air failure)	Fail safe + spring (gap minimization)					Gap formation	Gap formation	Gap formation	spring	spring	spring	spring
	Max. moment/ Load capacity	500/400 Nm (dynamisch), 75 kg	600/600 Nm (dynamisch), 79 kg	800/1800 Nm (dynamisch), 100 kg	500/500 Nm (dynamisch), 85kg	800/600 Nm (dynamisch), 100kg	591/326 Nm (dynamisch), 75 kg	1185/375 Nm (dynamisch), 79 kg	1626/2103 Nm (dynamic), 100 kg	600/850 Nm (static), 120 kg	1500/1700 Nm (static), 200 kg	286/286 Nm (static) 1001/1001 Nm (dynamic), 80 kg	800/910 Nm (static) 2800/3150 Nm (dynamic), 100 kg
	mass/ interference contour	2 kg / 130 x 47	3,1 kg / 150*62	3,7 kg / 160*68	2 kg / Ø136 x 58	3 kg / Ø161 x 68		3,1kg / 150 x 62	3,7kg / 160 x 68	1,76 kg/ Ø125 x 49	3,7 kg / Ø160 x 65	3,2 kg / ca. 127 x 67	2,9 kg / Ø140 x 67
	Mounting pattern ISO 9409	No ISO flange		ISO-125	ISO-080	ISO-100			ISO-125	ISO-100	ISO-125	ISO-080	ISO-100
	lifetime/ number of cycles	5 Mio.										„millions of times“	„millions of times“
	Intergarted pneumatic feed-trough	8x G1/8	8x G1/4	5x G3/8		2x G1/8 + 4x G3/8		8x G1/4	5x G3/8	6x G1/8	10x G1/8	none	none
	Number mounting patterns	2 mounting patterns			3 mounting patterns	3 mounting patterns						Up to 10 mouting patterns	Up to 10 mouting patterns
	Sensor options	Locking (additional structure)		Locking and tool presence	Locking and tool presence	Locking and tool presence			Locking and tool presence	Locking and tool presence	Locking and tool presence	Locking and tool presence	Locking and tool presence

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

CPS – Competitive comparison



Competitive Comparison

Reference product

Comparison product

Handling weight	Feature	SCHUNK CPS 110	SCHUNK CPS 160	SCHUNK CPS 210	SCHUNK CPB 125	SCHUNK CPB 160	ATI QC 110	ATI QC 160	ATI QC 210	Zimmer WWR 125	Zimmer WWR 160	Stäubli MPS 260
<300kg	Teachability	Ball locking			Clamping slide, smaller insertion play in XY, Z	Clamping slide, smaller insertion play in XY, Z				Line-contacting locking bolts, planar contact	Line-contacting locking bolts, planar contact	Ball mechanism with cross-shaped positioning surfaces
	Safety (in case of air failure)	Fail safe + spring (gap minimization)					Gap formation	Gap formation	Gap formation	spring	spring	spring
	Max. moment/ Load capacity	1000/1800 Nm (dynamisch), 150 kg	3500/1800 Nm (dynamisch), 300 kg	3500/1800 Nm (dynamisch), 300 kg	2.000/1.000 Nm (dynamisch), 200 kg	3.000/1.500 Nm (dynamisch), 300 kg	2.352/2.352 Nm (dynamisch), 150 kg	7.170/3.800 Nm (dynamic), 300 kg	7.600/4.060 Nm (dynamic), 300 kg	1.500/1.700 Nm (Static), 200 kg	2.000/2.200 Nm (static), 300 kg	2.000/2.000 Nm (dynamic), 350 kg
	mass/ interference contour	6,2 / 188*93	9,3 kg / 217*93	8,2 kg / 200*160*103	7,5 kg/ Ø205 x 97	10,5 kg / Ø248 x 97		9,3 kg / 217*93	8,2 kg / 200*160*103	3,7 kg/ Ø160 x 65	6,5 kg / Ø200 x 65	6,0 kg / 173*67
	Mounting pattern ISO 9409	ISO 125				ISO 160					ISO 160	
	lifetime/ number of cycles	5 Mio.										„millions of times“
	Intergated pneumatic feed-trough	8x G3/8	5x G3/8, 4x G1/2	none				5x G3/8, 4x G1/2	none	10x G1/8	10x G1/4	none
	Number mounting patterns	2 mounting patterns		4 mounting patterns	3 mounting patterns	3 mounting patterns			4 mounting patterns			Up to 14 module places
	Sensor options	Locking and tool presence										

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

CPS – Competitive comparison



Competitive Comparison

Reference product

Comparison product

Handling weight	Feature	SCHUNK CPS 310	SCHUNK CPS 510	ATI QC 310	ATI QC 510	Zimmer WWR 1160	Zimmer WWR 1200	Zimmer WWR 5000	Stäubli MPS 631S
>500kg	Teachability	Ball locking				Line-contacting locking bolts, planar contact	Line-contacting locking bolts, planar contact	Line-contacting locking bolts, planar contact	No cone centering boss, very precise due to corners for moment intake
	Safety (in case of air failure)	Fail safe + spring (gap minimization)		Gap formation	Gap formation	spring	spring	spring	spring
	Max. moment/ Load capacity	5000/4500 Nm (dynamisch), 510 kg	10.900/10.500 Nm (dynamic), 700 kg	9.900/9.600 Nm (dynamisch), 510 kg	10.900/10.500 Nm (dynamic), 700 kg	6.000/6.000 Nm (static), 400 kg	12.000/12.000 Nm (static), 1.300 kg	2.500/2.500 Nm (static), 500 kg	3.200/3.200 Nm (static) 11.200/11.200 Nm (dynamic), 630 kg
	mass/ interference contour	20,0 kg/ 244*120	28,0 kg/ 264*142		28,0 kg/ 264*142	14,0kg / Ø275 x 85	28,6kg / Ø315 x 85	10,1 kg / Ø230 x 65	11,4 kg / Ø200 x 100
	Mounting pattern ISO 9409	ISO 200				ISO 160			ISO 160-M10 and M12
	lifetime/ number of cycles	5 Mio.							„millions of times“
	Intergarted pneumatic feed-trough	none						10x G3/8	
	Number mounting patterns	4 mounting patterns				5 mounting patterns	5 mounting patterns	5 mounting patterns	Up to 10 mounting patterns
	Sensor options	Locking and tool presence							

Red = bad performance compared to reference product

Orange = Performance equally good

Green = better performance compared to reference product

Only for internal use

Competitive Comparison RSP

Feature	TC5	TC20	TC60	TC120	TC180	TC240	TC480	TC720	TC960
Handling weight	< 16 kg	< 35 kg	< 50 kg	< 100 kg	< 150 kg	<300 kg	< 700 kg	< 1350 kg	< 1350 kg
Teachability	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z	insertion play in XY, Z
Safety (in case of air failure)	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages	special design of the ball cages
	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available	Additional valve unit available
Max. moment/ Load capacity	50/50 Nm, 16 kg	200/100 Nm, 35 kg	600/500 Nm, 50 kg	1.000/1.000 Nm, 100 kg	1.600/1.250 Nm, 150 kg	2.400/1.250 Nm, 300 kg	5.000/2.500 Nm, 700 kg	10.000/10.000 Nm, 1350 kg	12.500/12.500 Nm, 1350 kg
mass/ interference contour	0,23 kg/ Height 25 mm	0,4 kg/ Height 27 mm	1,8 kg/ Height 39 mm	2,3 kg/ Height 42 mm	3,4 kg/ Height 42 mm	8,2 kg/ Height 60 mm	13,1 kg/ Height 60 mm	20,4 kg/ Height 70 mm	27,7 kg/ Height 70 mm
Mounting pattern ISO 9409	ISO-031.5	ISO-40	ISO-080	ISO-100	ISO-125	ISO-125	ISO-160-10-M12	ISO-200-12-M16 ISO-200-16-M16	ISO-250-10-M12
lifetime/ number of cycles	-	-	-	-	-	-	-	-	-
Integarted pneumatic feed-trough	6x M5	4x M5	8x G 1/8"	8x G 1/8"	8x G 1/8"	1x G 1/2"	1x G 1/2"	1x G 1/2"	1x G 1/2"
Number mounting patterns	1 mounting pattern	1 mounting pattern	1 mounting pattern	1 mounting pattern	1 mounting pattern	1 mounting pattern	2 mounting patterns	2 mounting patterns	2 mounting patterns
Sensor options	Locking	Locking	Locking	Locking	Locking	Locking	Locking	Locking	Locking

Only for internal use

CPS – Matching List



Matching List: SWS vs. CPS vs. Competition

Payload	ID SCHUNK SWS	Description	IDSCHUNK CPS	Description	ATI	STÄUBLI	ZIMMER
<16kg	302290	SWK-001-000-000	1590948	CPS 001-K	9120-001M-000-000-E		
	302291	SWA-001-000-000	1619548	CPS 001-A	9120-001T-000-000-E		
	302307	SWK-005-000-000	1619553	CPS 005-K	9120-005M-000-000		
	302308	SWA-005-000-000	1619554	CPS 005-A	9120-005T-000-000		
	1421514	SWK-007-000-000-IN00	1591016	CPS 007-K	9120-007CM-0-0-S0-B	MPS015RO_K81557761 MPS025RO_K81557764	WWR40F-B
	1405836	SWK-007-000-000-IN03	1613262	CPS 007-K-S	9120-007CM-0-0-SM-B		WPR5040F-00-A
	1365513	SWA-007-000-000	1591017	CPS 007-A	9120-007ST-0-0-B	MPS015TO_K81557938 MPS025TO_K81557939	WWR40L-B
	302316	SWK-011-000-000	1619555	CPS 011-K	9120-011M-000-000-B		WPR5040L-00-A
	302317	SWA-011-000-000	1619558	CPS 011-A	9120-011T-000-000-B		
	302322	SWK-020-000-000	1591033	CPS 020-K	9120-020M-000-PM5-B		
<35kg	302323	SWA-020-000-000	1591034	CPS 020-A	9120-020T-000-PM5-B		
	302326	SWK-021-000-000	1619570	CPS 021-K	9120-021M-000-000-E	MPS035RO_K81557767 MPS055RO_K81557776	WWR50F-B WPR5050F-00-A
	302327	SWA-021-000-000	1619572	CPS 021-A	9120-021T-000-000-E	MPS035TO_K81557940 MPS055TO_K81557943	WWR50L-B WPR5050L-00-A
	n. a.	SWK-029-0-0-0-S0	1590976	CPS 029-K			
	1499175	SWK-029-0-0-0-SM	1613280	CPS-029-K-S	9120-029EM-0-0-0-SM-E		



ZIMMER always offers sensors for monitoring lock/unlock and tool presence as an option, not pre-assembled („cost advantage“).

Recommendation for action: SCHUNK is double-checking with customers/users first and in case of doubt offers sensors for monitoring as an option, too.

Only for internal use

CPS – Matching List



Matching List: SWS vs. CPS vs. Competition

Payload	ID SCHUNK SWS	Description	IDSCHUNK CPS	Description	ATI	STÄUBLI	ZIMMER
<50kg	1499191	SWA-029-0-0-0	1590977	CPS 029-A	9120-029ET-0-0-0-E		
	302374	SWK-040Q-000-000	1590978	CPS 040-K	9120-040QM-000-000-S0-E	MPS055RO K81557776	WWR63F-B
	302364	SWK-040Q-000-000-SG	1613282	CPS 040-K-S	9120-040QM-000-000-SG-E		WWR80F-B WPR5063F-00-A WPR5080F-00-A
	302342	SWK-040-000-000	1590981	CPS 040N-K	9120-040M-000-000-E		
	302343	SWA-040-000-000	1590979	CPS 040-A	9120-040T-000-000-E	MPS055TO K81557943	WWR63L-B WWR80L-B WPR5063L-00-A WPR5080L-00-A
	302346	SWK-041-000-000	1619573	CPS 041-K	9120-041M-000-000-E		
	302347	SWA-041-000-000	1619574	CPS 041-A	9120-041T-000-000-E		
	1330577	SWK-046-0-0-000-0-SM	1613284	CPS 046-K-S	9120-046JM-0-0-000-0-SM-E		WWR63F-B
	n. a.	SWK-046-0-0-000-0-S0	1590984	CPS 046-K	9120-046JM-0-0-000-0-S0-E		WWR80F-B
	1315663	SWA-046-0-0-000-0	1590986	CPS 046-A	9120-046JT-0-0-000-0		WWR63L-B WWR80L-B
<100kg	302362	SWK-060-000-000	1590997	CPS 060-K	9120-060M-000-000-E		WWR100F-B
	302363	SWA-060-000-000	1591020	CPS 060-A	9120-060T-000-000-E		WWR125F-B
	302370	SWK-071-000-000	1591027	CPS 071-K	9120-071M-000-000-E	MPS080RA K81557785	WPR5100F-00-A
	302371	SWA-071-000-000	1591028	CPS 071-A	9120-071T-000-000-E	MPS080TO_K81557946 MPS130RA K81558518	WWR100L-B
	302392	SWK-076-000-000-SG	1613287	CPS 076-K-S	9120-076FM-000-000-SG-E	MPS130TO_K81557661	WWR125L-B
	302390	SWK-076-000-000	1591031	CPS 076-K	9120-076FM-000-000-S0-E		WPR5100L-00-A
	302391	SWA-076-000-000	1591035	CPS 076-A	9120-076FT-000-000-E		



ZIMMER always offers sensors for monitoring lock/unlock and tool presence as an option, not pre-assembled („cost advantage“).
Recommendation for action: SCHUNK is double-checking with customers/users first and in case of doubt offers sensors for monitoring as an option, too.

Only for internal use

CPS – Matching List



Matching List: SWS vs. CPS vs. Competition

Payload	ID SCHUNK SWS	Description	ID SCHUNK CPS	Description	ATI	STÄUBLI	ZIMMER
<300 kg	302412	SWK-110-000-000-SM	1613289	CPS 110-K-S	9120-110FM-000-000-SM-E	MPS260RA K81558526	WWR125F-B
	302410	SWK-110-000-000	1590259	CPS 110-K	9120-110FM-000-000-S0-E		WPR5125F-00-A
	302411	SWA-110-000-000	1590282	CPS 110-A	9120-110FT-000-000-E	MPS260TO_K81557665	WWR160F-B
	302440	SWK-160-000-000-SM	1613301	CPS 160-K-S	9120-160FM-000-000-SM-E	MPS260RA K81558526	WPR5160F-00-A
	1324633	SWK-160-000-000	1590284	CPS 160-K	9120-160FM-000-000-S0-E		WWR125L-B
	302441	SWA-160-000-000	1590286	CPS 160-A	9120-160FT-000-000-E	MPS260TO_K81557665	WPR5125L-00-A
	9962315	SWK-210BM-0-0-0-0-SM	1613303	CPS 210-K-S	9121-210BM-0-0-0-0-SM	MPS260RA K81558526	WWR160L-B
	n. a.	SWK-210-0-0-0-0-S0	1590992	CPS 210-K			WPR5160L-00-A
	9948542	SWA-210CT-0-0-0-0	1590994	CPS 210-A	9121-210CT-0-0-0-0	MPS260TO_K81557665	
>500 kg	9949434	SWK-310DM-0-0-0-0-SM	1613305	CPS-310-K-S	9121-310DM-0-0-0-0-SM	MPS631RA K81557721	WWR1160F
	n. a.	SWK-310-0-0-0-0-S0	1590995	CPS 310-K			WWR1200F
	9948544	SWA-310DT-0-0-0-0	1590996	CPS 310-A	9121-310DT-0-0-0-0	MPS631T0 K81557705 / MPS631TD K81557921	
	9948545	SWK-510DM-0-0-0-0-SM	1613306	CPS 510-K-S	9121-510DM-0-0-0-0-SM	MPS631RA K81557721	WWR1160L
	n. a.	SWK-510-0-0-0-0-S0	1590998	CPS 510-K			WWR1200L
	9948546	SWA-510DT-0-0-0-0	1590999	CPS 510-A	9121-510DT-0-0-0-0	MPS631T0 K81557705 / MPS631TD K81557921	



ZIMMER always offers sensors for monitoring lock/unlock and tool presence as an option, not pre-assembled („cost advantage“).

Recommendation for action: SCHUNK is double-checking with customers/users first and in case of doubt offers sensors for monitoring as an option, too.

Only for internal use

CPS vs. QC ATI (SWS US version)

Size CPS	Size ATI	Differences	Can be combined with regard to locking
CPS 001	QC-001	Housing color Air connection designation Locking/unlocking	yes
CPS 005	QC-5	Housing color Air connection designation Locking/unlocking	no statement
CPS 011	QC-11	Housing color Air connection designation Locking/unlocking	yes
CPS 020	QC-20	Housing color Slot for label Air connection designation Locking/unlocking	yes
CPS 021	QC-21	Housing color Head height difference 3 mm Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes
CPS 022	QC-22	Housing color Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes

Only for internal use

CPS – Matching List



CPS vs. QC ATI (SWS US version)

Size CPS	Size ATI	Differences	Can be combined with regard to locking
CPS 040 bestehend aus: CPS 040N-K und CPS 040-A	QC-40	Housing color Bushings on opposite halves Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label Mounting of the tool swivelled by 150°	no
CPS 040 bestehend aus: CPS 040-K-S und CPS 040-A	QC-40Q	Housing color Bushings on opposite halves Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking	no
CPS 041	QC-41	Housing color Head height difference 2.3 mm Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes
CPS 060	QC-60	Housing color Bushings on opposite halves Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	no
CPS 071	QC-71	Housing color Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes
CPS 076	QC-76	Housing color Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking	yes

Only for internal use

CPS vs. QC ATI (SWS US version)

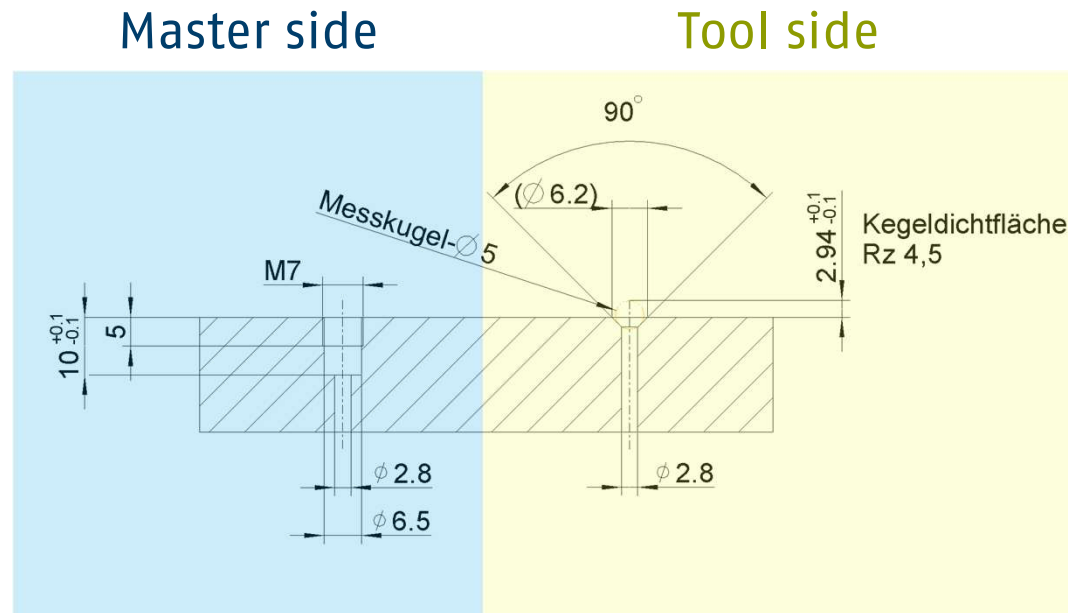
Size CPS	Size ATI	Differences	Can be combined with regard to locking
CPS 110	QC-110	Housing color Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes
CPS 160	QC-160	Housing color Threads of the air feed-throughs differ G vs NPT Air connection designation Locking/unlocking Slot for label	yes
CPS 210	QC-210	Housing color Air connection designation Locking/unlocking	no statement
CPS 310	QC-310	Housing color Air connection designation Locking/unlocking	no statement
CPS 510	QC-510	Housing color Air connection designation Locking/unlocking	no statement

Only for internal use

CPS installation dimensions form seals

Form seals:

- 1007941 Formdichtung M5, lang NBR
- 1616694 Formdichtung M5, lang VITON



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

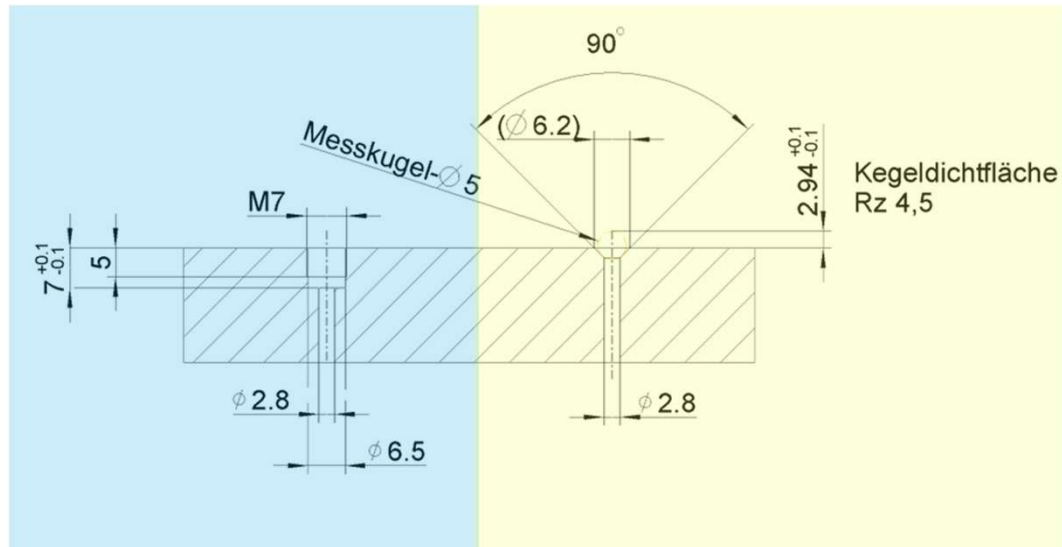
CPS installation dimensions form seals

Form seals:

- 1541233 Formdichtung M5, kurz NBR
- 1604795 Formdichtung M5, kurz VITON

Master side

Tool side



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

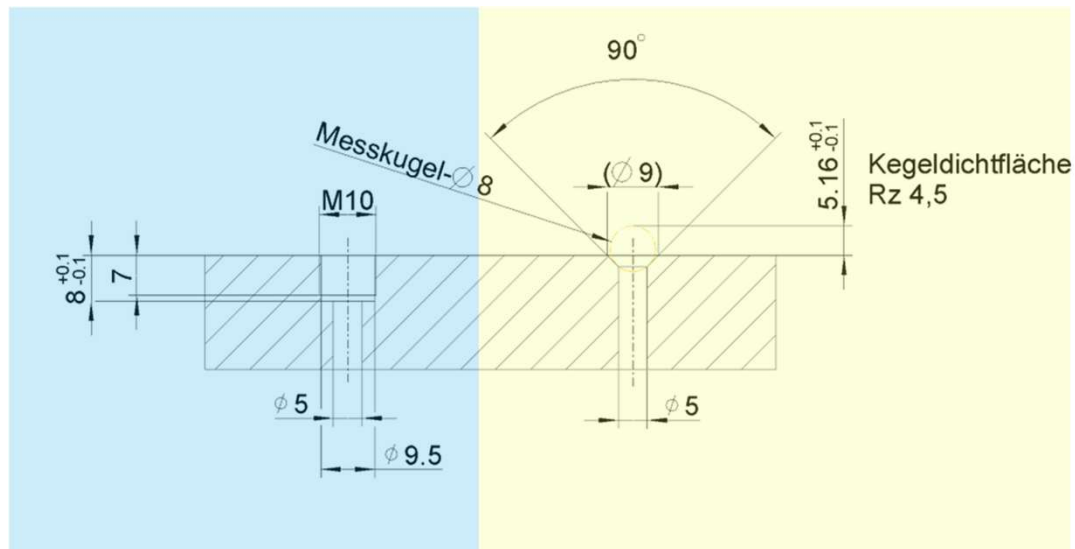
CPS installation dimensions form seals

Form seals:

1541231 Formdichtung G1/8 NBR
1604794 Formdichtung G1/8 VITON

Master side

Tool side



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

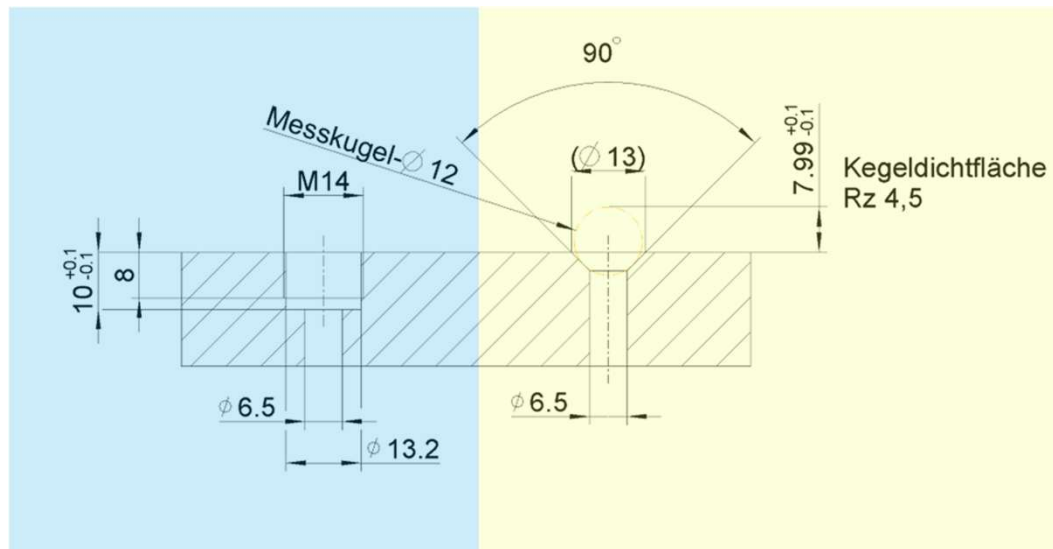
CPS installation dimensions form seals

Form seals:

1541234 Formdichtung G1/4 NBR
1604792 Formdichtung G1/4 VITON

Master side

Tool side



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

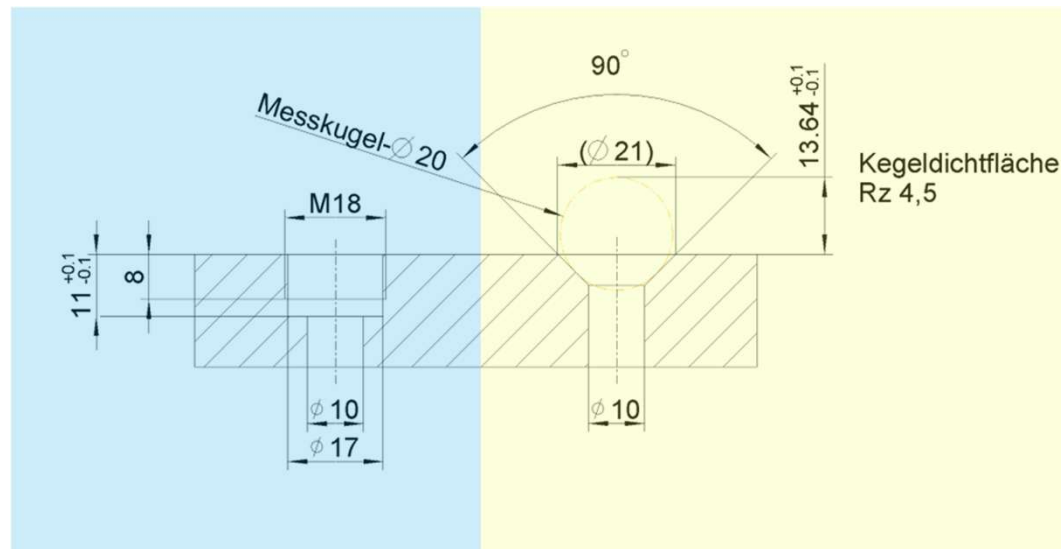
CPS installation dimensions form seals

Form seals:

- 1541232 Formdichtung G3/8 NBR
- 1604792 Formdichtung G3/8 VITON
- 1562660 Stützring

Master side

Tool side



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

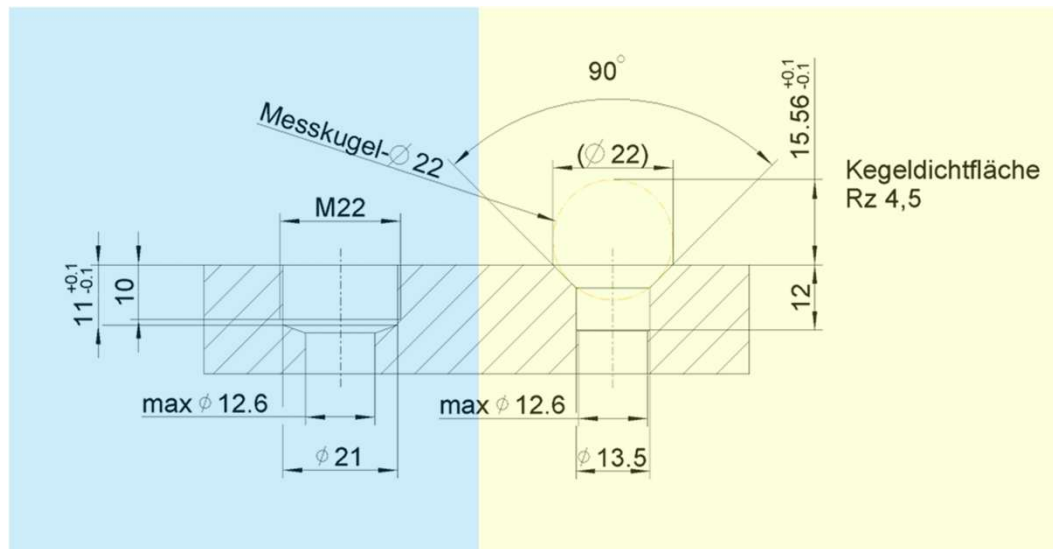
CPS installation dimensions form seals

Form seals:

1541235 Formdichtung G1/2 NBR
1604790 Formdichtung G1/2 VITON
1563559 Stützring

Master side

Tool side



The drawing applies to both form seals listed.

Nur für den internen Gebrauch

Technical questions

Are the products 100% interchangeable?

- Yes, a new version head (CPS K) is compatible with an old version adapter (SWA) and vice versa.
- In the case of option modules, this applies to all "A parts". This is not the case for "B and C parts".

Were patents checked in advance / during the development phase?

- Yes, a detailed check was carried out in advance and there were no infringements.

Why do the new F and M values differ from the previous SWS values?

- The values do not differ, they are shown differently in the new catalog data sheets. As with the CMS, we now show the load diagrams as a selection aid for our customers plus the specific static (emergency stop values, only 1,2,3 times possible, not more) and dynamic moment loads for each size.

Why does SCHUNK now specify maximum dynamic and static values for Mxyz in the CPS catalog?

- Due to the in-house development and the associated tests and endurance runs in the technical laboratory, SCHUNK has acquired more knowledge about these products and therefore now provides more data for the technical design.

Can the CPS also be used without compressed air in dynamic operation?

- No, the tool changer must always be operated with compressed air (piston spring not designed for this, spring supports self-holding to minimize gaps).

Only for internal use

Technical questions

Where can I find the maximum permissible compressive forces that can act on a CPS?

- We do not show these values in the catalog. However, they are available on request

Can CPS be manually emergency unlocked?

- Similar to before. You may have to dismantle the tool to gain access to the locking piston from below. Then press against the spring force (approx. 10% of the locking force) to move the piston upwards.

Why are sizes SWS-L-1210, 1310 and 1510 no longer in the standard portfolio?

- From a strategic point of view, SCHUNK now offers changers with a maximum load capacity of up to approx. 1,000 kg. If a coupler size > 1,000 kg payload is required, this will be checked internally via SCHUNK Engineering.

Is the CPS also available as a US version?

- No, there will be no US version in the standard version, but it can be tested on request in the "special" version.

Are the variants available? HW (hollow wrist), center bore, TDC coating, high temperature, Atex ?

- Not as standard versions in the catalog, can be checked in "special" on request.

Is there a UL certification?

- No, not in the first step and not across the board across the portfolio. If necessary, this will be checked in the "Special" section on request (new developments).

Only for internal use

Technical questions

Is a Viton version (e.g. high-temperature version or coolant) possible for CPS or COS modules?

- Not in the standard portfolio for CPS.
- Signal and power modules: Viton (FKM) on request (lip seal around the internal pin block)
- Pneumatic modules: on request (seal kit, 5x molded Viton seals each)
- Fluid modules: COS-FG2 and COS-FG4 are already fitted with Viton seals as standard

Does SCHUNK still offer the locking monitoring pre-assembled ex works?

- Yes, for all versions with integrated interlock monitoring in the housing (007, 022, 029, 040, 046, 076, 110, 160) there are two variants in the catalog: ...K-S (sensors pre-assembled) and ...K.
- The optional SIP (sizes 011, 020, 021, 041, 060, 071) can still be ordered, but is no longer pre-assembled in new configurations.

Are the mounting kits for the interlock monitoring system (SIP) compatible with the tool changers (SWK and CPS K)?

- Yes, but the mounting kits for the CPS sizes include a spacer, as an additional spring is installed in the piston chamber. This spacer is not required for use on an SWK.

Note: There are two SIP mounting kits for size 011 (for CPS 011-K: 1596403 for SWK-011: 1603589)

Only for internal use

Technical questions

Is the “Missed Tool” behavior (CPS master locked, but no CPS adapter coupled) the same as for the SWS?

- Yes, the same behavior and the same sizes are affected as with the SWS.

In the case of a drop in compressed air (self-holding), does the lock / unlock sensor switch to “locked” although there is a possible gap formation?

- Depending on the load, the higher the mounting mass on the CPS adapter is, the bigger is the gap formation between the master and adapter; the integrated piston spring counteracts this.

Will SCHUNK continue to offer configured assemblies?

- Yes, from 01.06. 'a flat assembly fee will be charged per assembly. Alternatively, individual components can also be offered and sold at any time.

Can the CPS lock / unlock sensors also be offered with NPN sensors for interlock monitoring?

- Requires technical clarification, on request.

Why are there no SCHUNK PLx modules (PerformanceLevel) available at market launch?

- Specifications must be defined for this type of application and know-how must be built up at the Hausen site in order to be able to develop and assemble certified safety modules.

Technical questions

What about existing systems that are PLx classified?

- see manual (separate chapter)

Will there be electrically or robot-operated tool changers from SCHUNK in the future?

- By controlling the supply chain, SCHUNK now has the opportunity to develop new technologies in the area of tool changers.

Are there changers with cleanroom certification?

- No cleanroom certification as standard. If there is a request, check what is possible via "special solution".

Are there changers for ATEX applications?

- Not in the standard. If a customer request is received, feasibility must be checked by means of a special project (see requirements and guidelines)

Are there changers for pharmaceutical / life science applications?

- Several changers with different requirements have already been planned. If a customer inquiry is received, feasibility must be checked by means of a special project (see requirements and guidelines).

Technical questions

Why are the fixing screws pre-assembled on the CPS 007 master?

- Due to a technical change, the previously installed screws can no longer be used (protrusion between head and adapter). To make our customers aware of this, the heads are delivered in this way.

Why does the CPS 110-A have a cut-out on the tool side below the tool presence sensor?

- This cut-out is used to readjust the tool presence sensor using an Allen key.

Why does the locking ring of the CPS 110-A have three additional holes in the bearing race top view that are not required for coupling/uncoupling?

- Multiple use of parts, the same locking ring is also used for size 100.

Are there adapter plates for option modules with different mounting patterns to use them on the tool changer?

- Yes, you can find them [here](#).

Does the CPS series offer the screw-on pattern of the COB option modules integrated in the housing?

- No, but there are standardized adapter plates for COB option modules for these cases.

Only for internal use

Technical questions

Which fluid modules can be screwed onto which tool changer

- Hydraulic, fluid and pneumatic modules exert an additional force on the tool changer when they are pressurized. These forces reduce the locking force of the tool changer system and are dependent on the number and maximum pressure. Please consult the product sales department in such cases.

Can our customer open the piston chamber of the CPS Master and remove or, if necessary, replace the piston spring?

- No. The warranty is gone and care must be taken during disassembly because the piston spring is preloaded. In principle, all our customers should send the changer to SCHUNK for inspection (Aftersales).

Does SCHUNK also offer an active storage system for Tool Changers like STÄUBLI?

- With the CTS-B, SCHUNK offers an active storage system that pneumatically locks the tool. The CTS-B has the locking monitoring prepared, sensors can be ordered as an option.

Validations in the technical laboratory – Endurance run

Static continuous operation

No external additional load / only open and close with adapter

- Number of cycles: 5 million clamping cycles with nominal pressure
- Evaluation: Clamping point / residual stroke / tightness / sensor signals / wear

Dynamic continuous operation

Changer is mounted stationary, an external lateral force is applied in the locked state by means of a lever arm and a cylinder

Step 1:

2 million with 1.25 times the nominal torque (dynamic) around X/Y and separately around Z

Step 2:

Destruction test by increasing the torques with the following steps

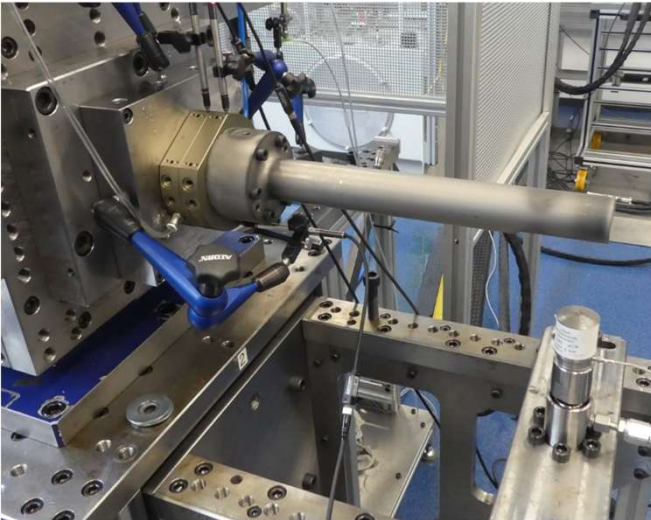
- 2000 cycles with 3-fold nominal torque (corresponds to approx. static torque)
- 1000 cycles with 4-fold nominal torque
- 1000 cycles with 5-fold nominal torque
- 1000 cycles with ...-fold nominal torque -> test is increased until failure occurs

1 [@Matyssek, Barbara] bitte diese Folie noch „hübsch“ machen, Daten passen von M. Siber - kopiert aus Email

Danke!

Hübsch, Florian; 2025-04-08T20:28:31.966

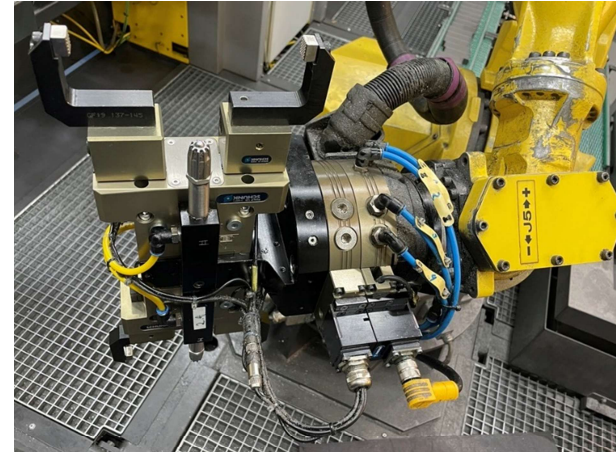
Validations in the technical laboratory and in SCHUNK production



Technical laboratory Mengen

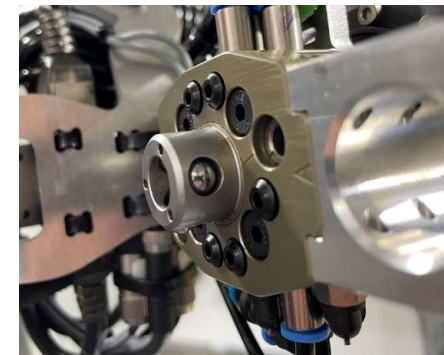


Technical laboratory Hausen



Production Hall 1 Lauffen

- **Strict testing** in the technical laboratory & SCHUNK production
- **Comprehensive testing processes and thorough evaluations**, 100% interchangeability with the SWS components.



Use in automatic cell

Only for internal use

COS
COS



Only for internal use

Naming systematic COS

COS R19 – K – HT

COS	R19	K	XX
COS	R19	A	XX
series	Module name	K = master A = tool	versions

Changer
Optional Module
SCHUNK

example.
High temperature
(HT)
Teflon-coated cables

examples:

COS R19-K

COS R14-A

| R19 module robot side

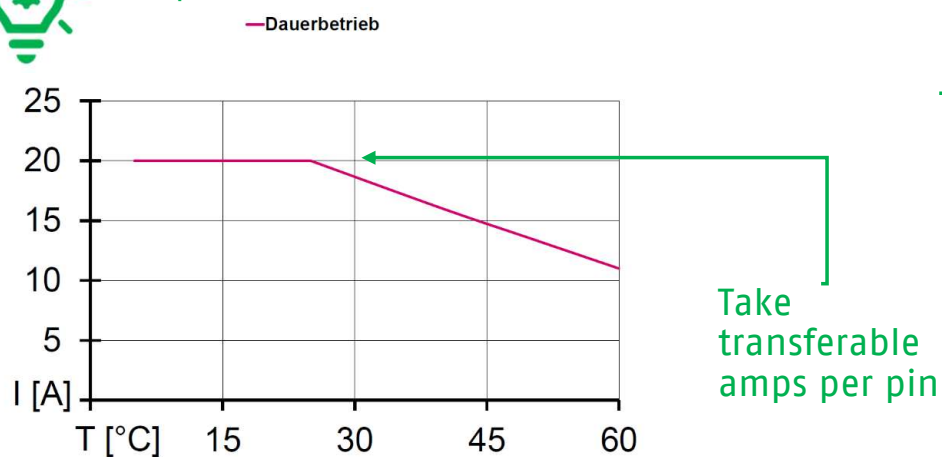
| R14 module tool side



Derating for Modulen e.g. MT8



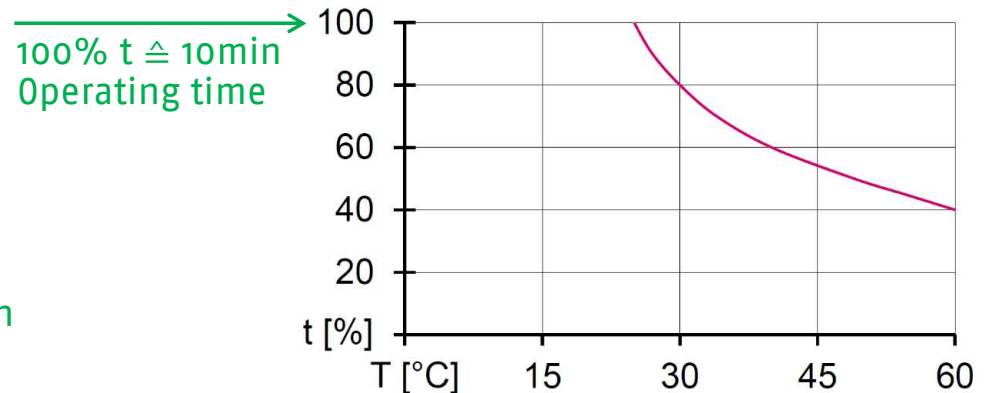
Note: To ensure the proper functioning of the option modules, it is imperative to take the ambient temperature into account!



Continuous operation:

The maximum permissible current depends on the ambient temperature. Exceeding this temperature can lead to overheating and possible product damage.

Example: At an ambient temperature of 30° the module can transmit up to 18 A per pin.



Cyclic operation:

The time-dependent transmission of the maximum rated current (20A, 10-minute basis) depends on the duty cycle (t). Exceeding the temperature limits can lead to overheating and thus product damage.

Example: At an ambient temperature of 30° the module can be operated for 8 minutes with maximum current per pin (see diagram on the left) after which operation must be paused for at least 2 minutes.

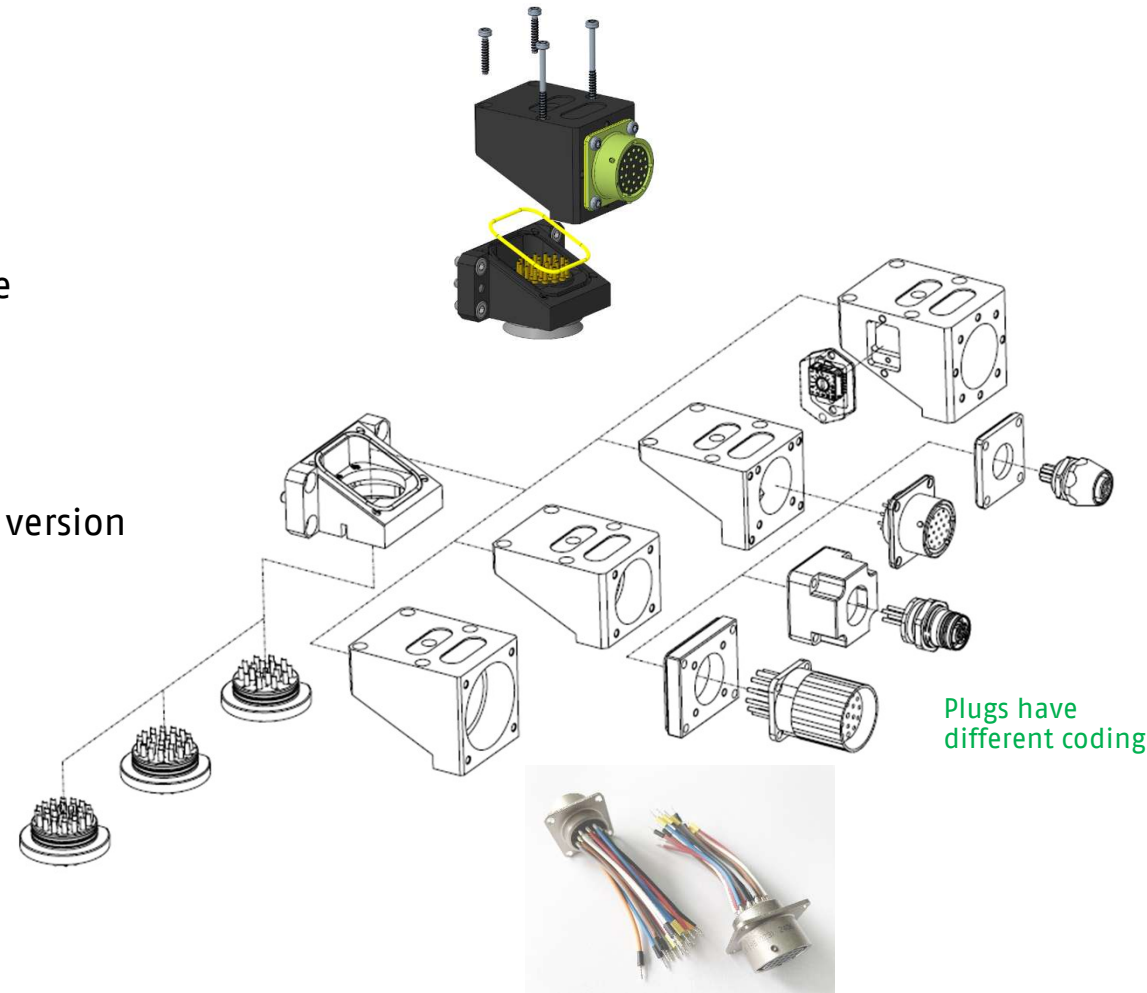
Only for internal use

Modular design COS series K-, R-, S-, G-style

- K = radial outlet, modules with K-interface
- R = radial outlet, modules with J-interface
- S = axial outlet, modules with J-interface
- G = radial outlet pivotable, modules with J-interface

Use of multiple parts

- Pin blocks between the interfaces
- Housing components
- Pre-assembled installation boxes depending on the version
- Positioning additional function



Only for internal use

Modular design COS series T-style

- One aluminum housing for all 3 variants TE (EtherNet), TD (DeviceNet) and TP (ProfiNet)
- Technical improvement:
 - Orientation of the installation boxes, both BUS and power supply (only the BUS installation box is aligned for the ATI modules)

TE



TD



TP



Only for internal use

Modular design COS series M-style



- One aluminum housing for all 10 variants MT8 and MT14
- **Technical improvement COS vs SWO**
 - Reduction in installation height to 48.3 mm (compared to ATI module 70.3 mm) still interchangeable



Only for internal use

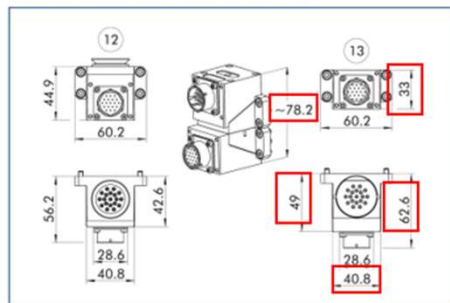
COS – Characteristics

COS-R19/RK19 – different dimensions COS/SW0

COS-R19 is compatible with the SW0-R19 -> see matching list

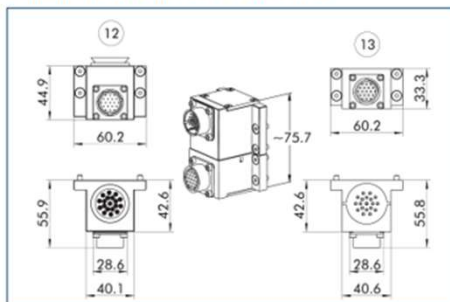
Important note: COS-R19-A is significantly larger than SW0-R19-A due to the multiple use of parts
COS-RK19-A is significantly larger than SW0-RK19-A

Kombination COS R19-K und COS R19-A



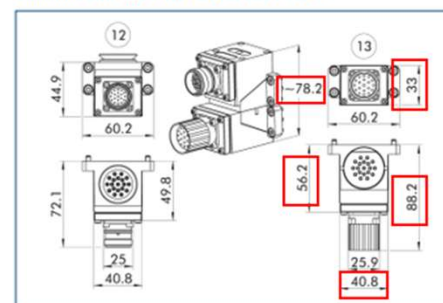
12 Kopfseite 13 Adapterseite

Kombination SW0-R19-K und SW0-R19-A



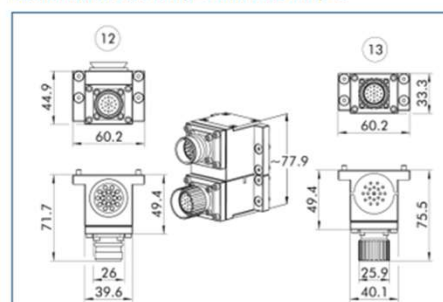
12 Kopfseite 13 Adapterseite

Kombination COS RK19-K und COS RK19-A



12 Kopfseite 13 Adapterseite

Kombination SW0-RK19-K und SW0-RK19-A



12 Kopfseite 13 Adapterseite

Only for internal use

IP protection

SWO	COS	COB
Protection class IP 65 Information from ATI, this was adopted 1:1 by SCHUNK years ago (coupled) <u>Meaning of the second digit:</u> 4: "Protection against water / splashing water on all sides" 5: "Protection against water jets from any angle "	Protection class IP 64 Tested in the technical laboratory in Hausen and validated by an external body (coupled)	Protection class IP 64 Tested in the technical laboratory in Hausen and validated by an external body(coupled) Protection class IP 54 Tested in the technical laboratory in Hausen and validated by an external body (decoupled)

Source: IP protection types.pdf, page 2



Please note: IP 64-protected option modules are sufficient for the vast majority of applications, so there is no disadvantage compared to the information provided by ATI.
In the rarest of cases, a jet of water is aimed directly at the exchangeable system or the option module.

Only for internal use

Changed screw connection for S7

The screw connection has been changed for the following modules: COS A15, COS B15

Example: Mounting the COS A15-K on CPS 007-K-S

Step 1: Fitting the screws



Step 2: Attaching the module



Step 3: Securing the module with grub screw



Module must be mounted before the master is mounted on the robot.

Reason:
Due to lack of space on the COS A15-K, it was necessary to consider the grub screw from above.

Example: Mounting the COS B15-K on CPS 007-K-S

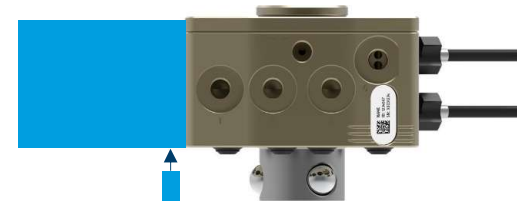
Step 1: Fitting the screws



Step 2: Attaching the module



Step 3: Securing the module with grub screw



Only for internal use

COS – Characteristics



COS for electrical grippers EGK/EGU/EZU + assesories

Gripper	Communication- / power modul	Connector	CPS 007		CPS 021		CPS 029 – CPS 160				CPB (all sizes)
			Modul	Adapter plate	Modul	Adapter plate	Option 1*	Adapter plate for COB	Option 2**	Option 3**	
EGK 25	BUS – PROFINET/EtherNET/IP/EtherCAT	M8, D-coded, 4 Pin	COB CB4-K & COB CB3-A	1618197 – COS Z84-K-S7/B 1618198 – COS Z84-A-S7/B	COB CB4-K & COB CB3-A	Mounted on flat B: 1610155 – COS Z83-J/B + 1584110 – COS Z24K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB3-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB3-A COB CI01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M8, A-coded, 4 Pin									
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin									
EGK 40	BUS – PROFINET/EtherNET/IP/EtherCAT	M8, D-coded, 4 Pin	EGK and EGU not recommended for CPS 007 due to their size		COB CB4-K & COB CB3-A	Mounted on flat B: 1610155 – COS Z83-J/B + 1584110 – COS Z24K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB3-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB3-A COB CI01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M8, A-coded, 4 Pin									
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin									
EGK 50	BUS – PROFINET/EtherNET/IP/EtherCAT	M8, D-coded, 4 Pin	EGK and EGU not recommended for CPS 007 due to their size		COB CB4-K & COB CB3-A	Mounted on flat B: 1610155 – COS Z83-J/B + 1584110 – COS Z24K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB3-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB3-A COB CI01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M8, A-coded, 4 Pin									
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin									

Gripper	Communication- / power modul	Connector	CPS 021		CPS 029 – CPS 160				CPB (all sizes)
			Modul	Adapter plate	Option 1*	Adapter plate for COB	Option 2**	Option 3**	
EGU 50	BUS - PROFINET/EtherNET/IP/EtherCAT	M12, D-coded 4 Pin	COB CB4-K & COB CB4-A	Mounted on flat B: 1610155 - COS Z83-J/B + 1584110 - COS Z24K-21B/J) 1584099 - COS Z24-A-21B/J)	COB CB4-K & COB CB4-A	1610155 - COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB4-A COB CI01 COB CB6
	POWER - PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin							
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin							
EGU 60	BUS - PROFINET/EtherNET/IP/EtherCAT	M12, D-coded 4 Pin	COB CB4-K & COB CB4-A	Mounted on flat B: 1610155 - COS Z83-J/B + 1584110 - COS Z24K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB4-A	1610155 - COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB4-A COB CI01 COB CB6
	POWER - PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin							
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin							
EGU 70	BUS - PROFINET/EtherNET/IP/EtherCAT	M12, D-coded 4 Pin	COB CB4-K & COB CB4-A	Mounted on flat B: 1610155 - COS Z83-J/B + 1584110 - COS Z24K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB4-A	1610155 - COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB4-A COB CI01 COB CB6
	POWER - PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin							
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin							
EGU 80	BUS - PROFINET/EtherNET/IP/EtherCAT	M12, D-coded 4 Pin	EGU 80 not recommended for CPS 021 due to its size		COB CB4-K & COB CB4-A	1610155 - COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE - -	COB CB4-K & COB CB4-A COB CI01 COB CB6
	POWER - PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin							
	I/O-Link Modbus RTU	M12, A-coded, 5 Pin M12, A-coded, 4 Pin							

*Option 1: Preferred product, gripper connectors fit directly onto the module

**Options 2 and 3: Gripper connectors are not compatible

Only for internal use

COS – Characteristics



COS for electrical grippers EGK/EGU/EZU + asseories

Gripper	Communication- / power modul	Connector	CPS 007		CPS 021		CPS 029 – CPS 160				CPB (all sizes)
			Modul	Adapter plate	Modul	Adapter plate	Option 1*	Adapter plate for COB	Option 2**	Option 3**	
EZU 30	BUS – PROFINET/EtherNET/IP/EtherCAT	M12, D-coded, 4 Pin	COB CB4-K & COB CB4-A	1618197 – COS Z84-K-S7/B 1618198 – COS Z84-A-S7/B	COB CB4-K & COB CB4-A	Mounted on flat B: 1610155 – COS Z83-J/B + 1584110 – COS Z24-K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB4-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE – –	COB CB4-K & COB CB4-A COB Cl01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin									
	I/O-Link	M12, A-coded, 5 Pin									
	Modbus RTU	M12, A-coded, 4 Pin									
EZU 35	BUS – PROFINET/EtherNET/IP/EtherCAT	M12, D-coded, 4 Pin	EZU not for CPS 007 due to size		COB CB4-K & COB CB4-A	Mounted on flat B: 1610155 – COS Z83-J/B + 1584110 – COS Z24-K-21B/J) 1584099(COS Z24-A-21B/J)	COB CB4-K & COB CB4-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE – –	COB CB4-K & COB CB4-A COB Cl01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin									
	I/O-Link	M12, A-coded, 5 Pin									
	Modbus RTU	M12, A-coded, 4 Pin									
EZU 40	BUS – PROFINET/EtherNET/IP/EtherCAT	M12, D-coded, 4 Pin	EZU not recommended for CPS 007 and CPS 021 due to its size				COB CB4-K & COB CB4-A	1610155 – COS Z83-J/B	COS-RE5 COS-R19 COS RD5 COS RD5	COS TE – –	COB CB4-K & COB CB4-A COB Cl01 COB CB6
	Power – PROFINET/EtherNET/IP/EtherCAT	M12, L-coded, 4 Pin									
	I/O-Link	M12, A-coded, 5 Pin									
	Modbus RTU	M12, A-coded, 4 Pin									

asseories:

Adapter plates									
ID	Designation	COB-Modul an CPS							
		CPS 007-K	CPS 007-A	CPS 021-K	CPS 021-A	CPS 029-K – CPS 160-K	CPS 029-A – CPS 160-A		
1618197	COS Z84-K-S7/B	●							
1618198	COS Z84-A-S7/B		●						
1584110	COS Z24-K-21B/J			●					
1584099	COS Z24-A-21B/J				●				
1610155	COS Z83-J/B			●	●	●	●		

*Option 1: Preferred product, gripper connectors fit directly onto the module

**Options 2 and 3: Gripper connectors are not compatible

Only for internal use

COS – Characteristics



COS for electrical grippers EGK/EGU/EZU + assesories

modul		connector Power		connector BUS		Cable extension Power		Cable extension BUS	
ID	designation	0°	90°	0°	90°	0°	90°	0°	90°
1586399	COB CB4-K	1533727	1543957	9965967	1416610	-	-	-	-
1586396	COB CB4-A	1628063	1628062	9965967	1416610	1628052	1628060	-	-
1586385	COB CB3-A	9960108	1628064	1628054	-	1628061	1628065	-	-
1586415	COB CB6-K	-	-	1628067	1628066	-	-	-	-
1586412	COB CB6-A	-	-	1628069	1628068	-	-	-	-
1586418	COB CI01-K	-	-	1628057	1628055	-	-	-	-
1586416	COB CI01-A	-	-	1628059	1628058	-	-	1628050	1628051
1586650	COS RD5-K	-	-	9957560	-	-	-	-	-
1586639	COS RD5-A	-	-	9957561	-	-	-	-	-
1586736	COS TE-K	9957560		9965967	1416610	-	-	-	-
1586735	COS TE-A	9957561		9965967	1416610	-	-	-	-
1586656	COS RE5-K	-	-	9965967	1416610	-	-	-	-
1586654	COS RE5-A	-	-	9965967	1416610	-	-	-	-
1586443	COS R19-K	301283	301294	-	-	302176 / 302177	302179 / 302190	-	-
1586442	COS R19-A	301284	301295	-	-	302178	302191	-	-

Only for internal use

Matching list*: SWO vs. COS

Signal module

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Signal A15	9936356	SWO-A15-A	1586956	COS A15-A
	9936357	SWO-A15-K	1586965	COS A15-K
Signal Eo6	9962998	SWO-Eo6-A	1586969	COS Eo6-A
	9962997	SWO-Eo6-K	1586981	COS Eo6-K
Signal E10	9935802	SWO-E10-011-A	1586984	COS E10-A
	9935801	SWO-E10-011-K	1586985	COS E10-K
Signal E20	9936526	SWO-E20-011-A	1586986	COS E20-A
	9936525	SWO-E20-011-K	1586987	COS E20-K
Signal G19	9961318	SWO-G14-A	1586542	COS G14-A
	9940650	SWO-G19-A	1586543	COS G19-A
	9940649	SWO-G19-K	1586544	COS G19-K
	9949311	SWO-G19R-K	1586545	COS G19R-K
	9949312	SWO-G19W-K	1586547	COS G19W-K
	9961305	SWO-G21-A	1586548	COS G21-A
Signal G26	9941561	SWO-G26-A	1586549	COS G26-A
	9941560	SWO-G26-K	1586550	COS G26-K
	9959953	SWO-G26R-K	1586551	COS G26R-K
	9956897	SWO-G26W-K	1586552	COS G26W-K
Signal GD4	30088165	SWO-GD4-A	1586556	COS GD4-A
	30088161	SWO-GD4-K	1586557	COS GD4-K
	9957468	SWO-GF14-A	1586558	COS GF14-A
Signal GF19	9948658	SWO-GF19-A	1586559	COS GF19-A
	9948655	SWO-GF19-K	1586570	COS GF19-K
	9957467	SWO-GF19W-K	1586572	COS GF19W-K
Signal K19	9954959	SWO-K14-A	1586379	COS K14-A
	9937329	SWO-K19-A	1586381	COS K19-A
	9937328	SWO-K19-K	1586384	COS K19-K
	1408609	SWO-K19-KIT-A	1586386	COS K19-KIT-A
	1408608	SWO-K19-KIT-K	1586387	COS K19-KIT-K
	9949315	SWO-K19P-K	1586389	COS K19P-K
	9949316	SWO-K19W-K	1586394	COS K19W-K
	9958100	SWO-K21-A	1586395	COS K21-A
Signal K26	9937799	SWO-K26-A	1586397	COS K26-A
	9937798	SWO-K26-K	1586398	COS K26-K
	1301550	SWO-K26P-K	1586410	COS K26P-K
Signal KF19	9961307	SWO-KF14-A	1586429	COS KF14-A
	9959887	SWO-KF19-A	1586451	COS KF19-A
	9959886	SWO-KF19-K	1586452	COS KF19-K
	9872377	SWO-KF19P-K	1586453	COS KF19P-K

*list of SWS ID that are replaced by COS ID

Only for internal use

Matching list*: SWO vs. COS

Signal module

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Signal R12	1449206	SWO-R12-A	1586432	COS R12-A
	1449205	SWO-R12-K	1586438	COS R12-K
	Not found	Not found	1586404	COS R0-A
	Not found	Not found	1586407	COS R13-A
Signal R19	9935100	SWO-R14-A	1586440	COS R14-A
	9935816	SWO-R19-A	1586442	COS R19-A
	9935815	SWO-R19-K	1586443	COS R19-K
	1408596	SWO-R19-KIT-A	1586445	COS R19-KIT-A
	1408595	SWO-R19-KIT-K	1586446	COS R19-KIT-K
	9942391	SWO-R19R-K	1586448	COS R19R-K
	9942041	SWO-R19W-K	1586472	COS R19W-K
	Not found	Not found	1586441	COS R20-A
Signal R26	9799841	SWO-R21-A	1586474	COS R21-A
	9935820	SWO-R26-A	1586475	COS R26-A
	9935819	SWO-R26-K	1586477	COS R26-K
	9949320	SWO-R26R-K	1586498	COS R26R-K
	9942076	SWO-R26W-K	1586511	COS R26W-K
	9941388	SWO-R32-A	1586512	COS R32-A
Signal R32	9941387	SWO-R32-K	1586518	COS R32-K
	9948853	SWO-R32R-K	1586520	COS R32R-K
	Not found	Not found	1586517	COS R32B-A
	9942418	SWO-R32W-K	1586524	COS R32W-K
	Not found	Not found	1586674	COS RF13-A
Signal RF19	9961312	SWO-RF14-A	1586676	COS RF14-A
	9948657	SWO-RF19-A	1586677	COS RF19-A
	9948654	SWO-RF19-K	1586678	COS RF19-K
	9949324	SWO-RF19R-K	1586679	COS RF19R-K
	9949325	SWO-RF19W-K	1586691	COS RF19W-K
	9965783	SWO-RK19-A	1586692	COS RK19-A
Signal RK19	9965782	SWO-RK19-K	1586693	COS RK19-K
	9937330	SWO-S14-A	1586695	COS S14-A
Signal S19	9935818	SWO-S19-A	1586696	COS S19-A
	9935817	SWO-S19-K	1586697	COS S19-K
Signal S26	9935822	SWO-S26-A	1586710	COS S26-A
	9935821	SWO-S26-K	1586711	COS S26-K
Signal SF19	9948659	SWO-SF19-A	1586717	COS SF19-A
	9948656	SWO-SF19-K	1586718	COS SF19-K
Signal X7G	9958866	SWO-X7G-A	1586756	COS X7G-A
	9958865	SWO-X7G-K	1586757	COS X7G-K

Only for internal use

Matching list*: SWO vs. COS

Power modul

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Power MT14	9938528	SWO-MT14-A	1586646	COS MT14-A
	9948446	SWO-MT14A-K	1586648	COS MT14A-K
Power MT45	Not found	not found	1586682	COS MT45-A
	Not found	Not found	1586683	COS MT45-K
Power MT8	9937158	SWO-MT8-A	1586684	COS MT8-A
	9937157	SWO-MT8-K	1586685	COS MT8-K
	9949317	SWO-MT8L-A	1586687	COS MT8L-A
	9949318	SWO-MT8L-K	1586689	COS MT8L-K

Power servo

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Servo REP10	9965724	SWO-REP10-A	1586664	COS REP10-A
	9965723	SWO-REP10-K	1586665	COS REP10-K
	1408613	SWO-REP10-KIT-A	1586667	COS REP10-KIT-A
	1408612	SWO-REP10-KIT-K	1586668	COS REP10-KIT-K
Servo RES10	1330275	SWO-RES10B-A	1586669	COS RES10B-A
	1330274	SWO-RES10B-K	1586671	COS RES10B-K

* list of SWS ID that are replaced by COS ID

Only for internal use

Matching list*: SWO vs. COS

Communication modul

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Communication KE7	9960994	SWO-KE7-A	1586420	COS KE7-A
	9960993	SWO-KE7-K	1586422	COS KE7-K
Communication KE8	1357606	SWO-KE8-A	1586425	COS KE8-A
	1357605	SWO-KE8-K	1586426	COS KE8-K
Communication RD5	9872359	SWO-RD5-A	1586639	COS RD5-A
	9872358	SWO-RD5-K	1586650	COS RD5-K
Communication RE10	9959874	SWO-RE10-A	1586652	COS RE10-A
	9959873	SWO-RE10-K	1586653	COS RE10-K
Communication RE5	9957445	SWO-RE5-A	1586654	COS RE5-A
	9957444	SWO-RE5-K	1586656	COS RE5-K
Communication RE8	1486896	SWO-RE8-A	1586659	COS RE8-A
	1486895	SWO-RE8-K	1586660	COS RE8-K
Communication TD	9942106	SWO-TD-A	1586730	COS TD-A
	9942105	SWO-TD-K	1586732	COS TD-K
Communication TE	9900050	SWO-TE-A	1586735	COS TE-A
	9900049	SWO-TE-K	1586736	COS TE-K
Communication TP	9871165	SWO-TP-A	1586738	COS TP-A
	9871166	SWO-TP-K	1586740	COS TP-K

* list of SWS ID that are replaced by COS ID

Only for internal use

Matching list*: SWO vs. COS

Welding modul

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Welding PG3	1316809	SWO-PG3-A	1586922	COS PG3-A
	1316807	SWO-PG3-K	1586923	COS PG3-K

Hydraulic / fluid modul

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Fluid FG2**	9936818	SWO-FG2-A	1586505	COS FG2-A
	9936817	SWO-FG2-K	1586506	COS FG2-K
Fluid FG4**	9937334	SWO-FG4-A	1586507	COS FG4-A
	9937333	SWO-FG4-K	1586508	COS FG4-K
Hydraulics F2HG14A	30089379	SWO-F2HG14A-A	1586501	COS F2HG14A-A
	30089378	SWO-F2HG14A-K	1586502	COS F2HG14A-K

* list of SWS ID that are replaced by COS ID

** COS-FG2 and COS-FG4 viton seals are standard

Only for internal use

Matching list*: SWO vs. COS

Vacuum modul

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Vacuum V112A	9956421	SWO-V112A-A	1586744	COS V112A-A
	9956420	SWO-V112A-K	1586745	COS V112A-K
Vacuum V200A	9960870	SWO-V200A-A	1586746	COS V200A-A
	9962295	SWO-V200A-K	1586747	COS V200A-K
Vacuum V34	9937336	SWO-V34-A	1586748	COS V34-A
	9937335	SWO-V34-K	1586750	COS V34-K
Vacuum VF1	Not found	Not found	1586754	COS VF1-A
	Not found	Not found	1586755	COS VF1-K

* list of SWS ID that are replaced by COS ID

Only for internal use

Matching list*: SWO vs. COS

Pneumatic modul

	Old		new	
	ID SCHUNK COS	namng	ID SCHUNK CPS	namng
Pneumatics P05	9936896	SWO-P05-A	1586843	COS P05-A
	9936895	SWO-P05-K	1586844	COS P05-K
Pneumatics P12A	9957033	SWO-P12A-A	1586846	COS P12A-A
	9949339	SWO-P12A-K	1586847	COS P12A-K
Pneumatics P14	9935825	SWO-P14-A	1586848	COS P14-A
	9935830	SWO-P14-K	1586849	COS P14-K
Pneumatics P186	9939025	SWO-P186-A	1586861	COS P186-A
	9939024	SWO-P186-K	1586862	COS P186-K
Pneumatics P186A	9948322	SWO-P186A-A	1586864	COS P186A-A
	9948321	SWO-P186A-K	1586866	COS P186A-K
Pneumatics P188	1318445	SWO-P188-A	1586869	COS P188-A
	1318443	SWO-P188-K	1586870	COS P188-K
Pneumatics P18	9935827	SWO-P18-A	1586871	COS P18-A
	9935826	SWO-P18-K	1586872	COS P18-K
Pneumatics P238	9940580	SWO-P238-A	1586876	COS P238-A
	9940578	SWO-P238-K	1586877	COS P238-K
Pneumatics P38A	9937843	SWO-P38A-A	1586878	COS P38A-A
	9937842	SWO-P38A-K	1586879	COS P38A-K
Pneumatics P48	9961331	SWO-P48-A	1586890	COS P48-A
	9961330	SWO-P48-K	1586891	COS P48-K
Pneumatics P8M5	9872068	SWO-P8M5-A	1586919	COS P8M5-A
	9872067	SWO-P8M5-K	1586921	COS P8M5-K

* list of SWS ID that are replaced by COS ID

Only for internal use

Matching list*: SWO vs. COS

L-Moduls

	Old		new	
	ID SCHUNK COS	naming	ID SCHUNK CPS	naming
Valve adapter JU2	9952155	SWO-L-JU2-K	1586306	COS JU2-K
Valve adapter JU3	9959552	SWO-L-JU3-K	1586308	COS JU3-K
Signal SA2	9948555	SWO-L-SA2-A	1586712	COS SA2-A
	9948563	SWO-L-SA2-K	1586714	COS SA2-K
	9873614	SWO-L-SA3Z1-A	1586715	COS SA3-A
Air adapter JB2	9948548	SWO-L-JB2-K	1586302	COS JB2-K
Air adapter JB3	9948549	SWO-L-JB3-K	1586303	COS JB3-K
Pneumatics AF2	9948565	SWO-L-AF2-A	1586481	COS AF2-A
	9948564	SWO-L-AF2-K	1586482	COS AF2-K
Pneumatics AM2	9948577	SWO-L-AM2-A	1586485	COS AM2-A
	9948576	SWO-L-AM2-K	1586486	COS AM2-K
Hydraulics HB2	9948583	SWO-L-HB2-A	1586283	COS HB2-A
	9948582	SWO-L-HB2-K	1586284	COS HB2-K
Hydraulics HB6	9965174	SWO-L-HB6-A	1586287	COS HB6-A
	9965463	SWO-L-HB6-K	1586289	COS HB6-K
Hydraulics HC2	9957797	SWO-L-HC2-A	1586300	COS HC2-A
Fluid FH12	1378141	SWO-L-FH12-A	1586509	COS FH12-A
	1378135	SWO-L-FH12-K	1586540	COS FH12-K
Welding PY41	1550126	SWO-L-PY41-A	1586925	COS PY41-A
	1550125	SWO-L-PY41-K	1586926	COS PY41-K
Fluid AH2	9948568	SWO-L-AH2-K	1586483	COS AH2-K
	9948571	SWO-L-AH4-A	1586484	COS AH4-A
Fluid FC2	9948578	SWO-L-FC2-K	1586503	COS FC2-K
	9948581	SWO-L-FC4-A	1586504	COS FC4-A
Signal VB2	9948560	SWO-L-VB2-A	1586751	COS VB2-A
Signal VB3	9948561	SWO-L-VB3-A	1586752	COS VB3-A
Signal VB7	9872332	SWO-L-VB7-K	1586753	COS VB7-K

* list of SWS ID that are replaced by COS ID

Only for internal use

Technical questions

Are the COS option modules compatible with the existing SWO option modules?

- Yes sizes are interchangeable, e.g. combination of COS R19-K with SWO-R19-A (Attention: COS-R19-A is higher than SWO-R19-A).

Can the COS option modules also be used with the CPB series?

- Yes, there are corresponding adapter plates. CPB sizes 125 and 160 also have a J-screw-on pattern integrated in the housing.

Can the COS option modules also be used with the CMS or NSR-A series?

- Yes, they are interchangeable. Same interfaces as former SWO modules

Is a Viton version for protection against coolant possible for COS modules?

- Not in the standard portfolio. Can be ordered separately for electrical option modules (lip seal around the internal pin block made of Viton (FKM)) and for the pneumatic option modules (seal set, 5x molded seals each made of Viton) for self-replacement.

What about high-temperature versions of COS modules?

- Not in the standard portfolio ex works. Replace the Viton (FKM) seal as mentioned above. For the R series, the housing and internal cable, pin block are suitable up to 120°C. Other modules on request.
- Note: There is no separate SCHUNK ID number for these variants. If the customer replaces the seal himself, he must also document this in his documents. (Parts list, for example)

Only for internal use

Technical questions

Can the installation boxes (plug outlet) be twisted or adapted by the customer?

- No, this is not recommended. The internal cables are kept relatively short.

Can our customers repair option modules themselves?

- We do not recommend this for the electrical modules. Only the lip seal around the pin block is specified as a spare part in the manual. For the other components, the module must be sent to the factory for inspection.
- For the pneumatic modules, you can replace the seals yourself. Sealing kits are specified in the manual.
- Spare parts kits are also available for the fluid modules.

When replacing existing SW0 modules with COS modules, can the existing cables/prefabricated lines still be used?

- Yes, if they are not damaged by the crash/overload, they will also fit back onto the COS module connectors

Are pre-assembled cables now also available for the COS A15 option modules?

- If the customer wants to use other cables instead of the familiar D-Sub connectors, it should be discussed whether he would like to switch to the new SCHUNK COB modules. These are much more compact and pre-assembled cables are available.

Technical questions

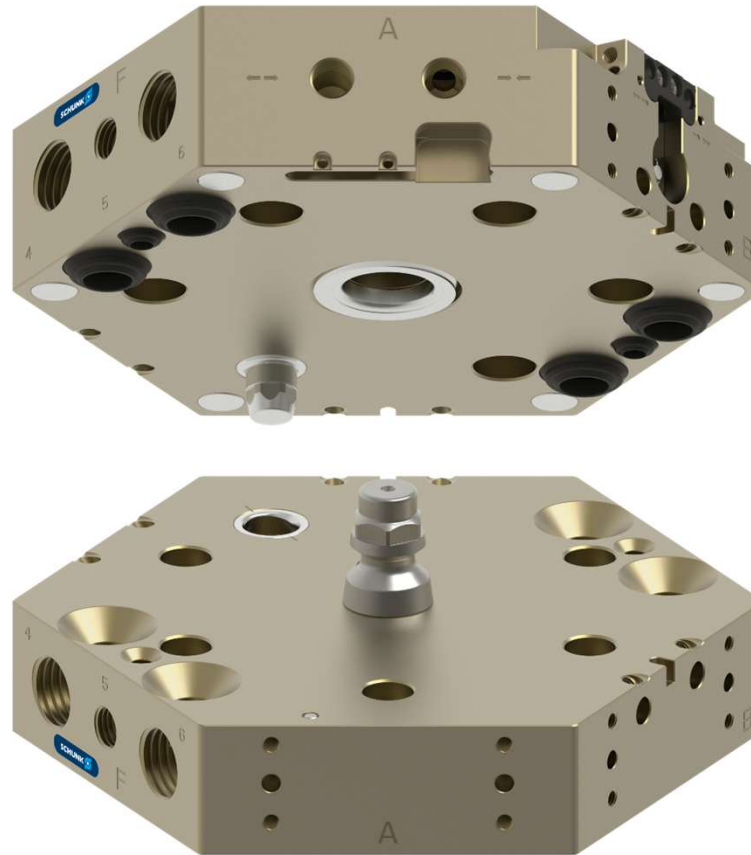
Which fluid modules can be screwed onto which tool changer

- Hydraulic, fluid and pneumatic modules exert an additional force on the tool changer when they are pressurized. These forces reduce the locking force of the tool changer system and are dependent on the number and maximum pressure. Please consult the product sales department in such cases.

CPB

CPB

Changer Pneumatic Bolt



Only for internal use

Naming sytematic CPB

Example: CPB 050 – K – HT – o-A6M5



CPB	050	K	XX	XX	XX
CPB	050	A	XX	XX	XX
series	Size According to ISO Flansch	K = master A = adapter	versions E.g. High temperature (HT) etc.	Optional modules If flat A isn't occupied -> No „o“ If Flat B isn't occupied -> „o“	

Examples:

CPB 050-K-S12L	S12L module on surface B
CPB 050-A-S12L	S12L module on surface B
CPB 050-K-S12L-S12R	S12L module on surface B and S12R module on surface D
CPB 080-K-Z81P8M5-P4-CB4	Apl Z81 and P8M5 module on surface B, P4 module on surface D, CB4 module on surface E
CPB 125-K-oCB4-o-oR32	CB4 module on surface B pos 2 (Center), R32 module on surface E pos 2 (Center)
CPB 125-K-oCB4-ooP4-oR32	CB4 module on surface B pos 2 (Center), P4 module on surface D pos 3, R32 module on surface E pos 2 (Center)
CPB 125-K-oCB4-o-oR32	CB4 module on surface B pos 2 (Center), R32 module on surface E pos 2 (Center)



Note:

Sensors no longer in the description! Only accessories! Stainless steel housing & TDC coating only as special version

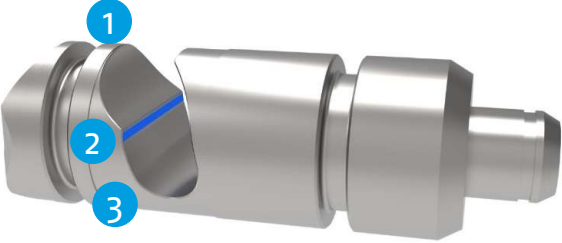
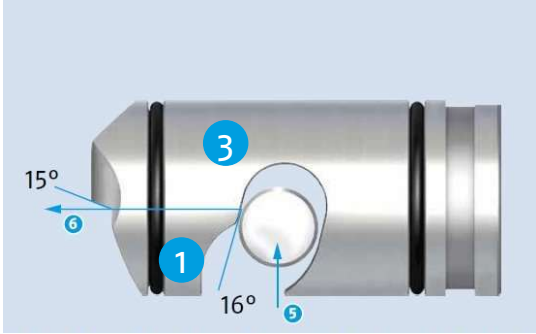
Only for internal use

CPB

Load group	size	Preferred produkt
<16kg	CPB 040	CPB 040
<35kg	CPB 050	CPB 050
<50kg	CPB 063	CPB 063
<100kg	CPB 080 CPB 100	CPB 080 CPB 100
<300 kg	CPB 125 CPB 160	CPB 125 CPB 160

Only for internal use

Self-locking locking system CPB vs. NSE3

CPB	NSE3 138
	
1 Rapid stroke (fast movement of the clamping slides) 2 0° angle between rapid and clamping stroke (self-locking) 3 Clamping stroke (maximum locking force, retraction of the clamping bolt into the locking mechanism)	1 Rapid stroke (fast movement of the clamping slides) 3 Clamping stroke (maximum locking force, retraction of the clamping bolt into the locking mechanism)
CPB locking system is self-locking in the event of a drop in compressed air, angles on the clamping slide and clamping pin have been optimized for use on robots (more "play" when coupling and less pull-in force). Improvement: Spring in the piston chamber reduces gap formation between master and adapter to almost "0" (> 0.05 mm).	

Only for internal use

CPB offers MORE: technical advantages

Features	Added value from the customer's perspective
Consistent ISO flange pattern according to 9409 on the robot and tool side	Simple and quick installation, lower installation height, less interference contour
Functional parts Locking mechanism and clamping bolt made of hardened, stainless steel	Long life, robust design
Locking and presence monitoring prepared in housing	Condition monitoring, process reliability, lower installation height, less interference contour, sensors can be easily retrofitted (insert to stop and fix)
Number of mounting flats and mounting surface for option modules for both COS and COB*	Versatile application possibilities due to more space for media transmission
Locking mechanism inside the housing	No additional interference contour More protection against external dirt e. g. dust, coolant etc.
New bolt module interface	More efficient use of the screwing surfaces as it is more compact compared to the J-interface
Air connections adapter side can also be used axially	Depending on the application, the air connections can be used radially or axially (on delivery, axial air connections are closed with screw plugs, O-rings included in the accessory pack – see catalog for information on the design of the APL)
Bolt-Up and Bolt-Down function within CPB Adapter	Customer's tool can be mounted into CPB Adapter (threads) and as well through CPB Adapter into customer's tool (bores).

*depending on size, maybe interface plate needed

Only for internal use

Spring forces piston chamber and gap formation

CPB size	040	050	063	080	100	125	160
Spring force in locked state CPB master [N]	200	350	450	1000	1500	2200	4000
Gap formation [mm] with measured tensile force in direction Z centric [N]	< 0,05						
	280	560	560	840	1120	2240	2800

Note: Locking force due to spring force: calculated value based on the piston position and the spring data

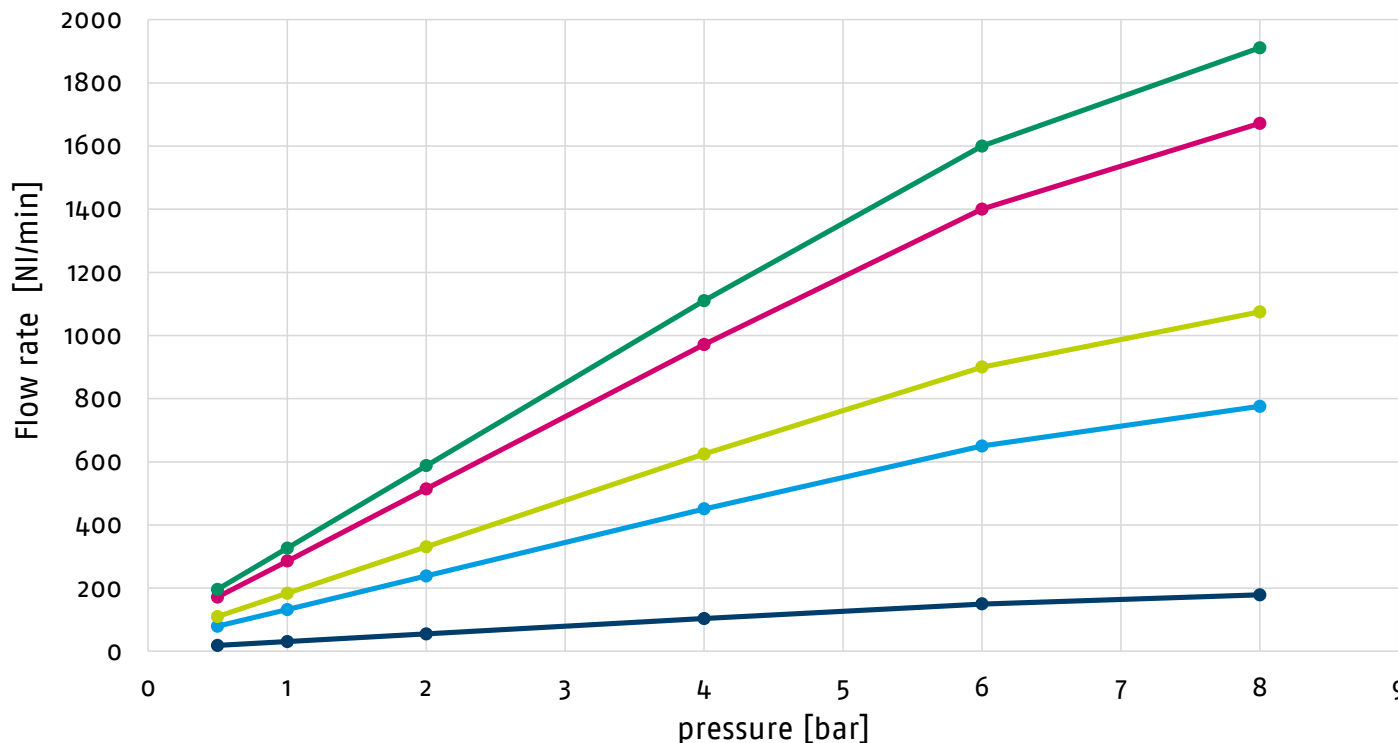
Test procedure to determine the gap formation:

1. head and adapter locked with compressed air
2. switch off compressed air (deflate piston -> only spring acts)
3. generate a centric tensile load with an external cylinder
4. measure gap formation

Only for internal use

Flow rates integrated pneumatic feed-throughs

Flow rate compressed air [NI/min]



Flow rates were determined in the technical laboratory in Hausen

"NI/min" = "normal liters per minute" describes the amount of air in liters that is passed through a single air connection per minute.

Size of the radial air connections in the housing: M5 G1/8" G1/4" G3/8" G1/2"

Only for internal use

CPB – Characteristics

CPB vs. CPS



Handling weight	Product series & size	Mounting flats (Mounting pattern)	Max. Mx/My/Mz dynamic	Number pneumatic	dimensions (see following slides)
<16kg	CPS 007	1x S7	Mx/My 30 // Mz 50	6x M5	Low expansion in x/y direction
	CPB 040	2x B	Mx/My 100 // Mz 100	6x M5	Low installation height
<35kg	CPS 021	K side A; K/J via adapter plate side B	Mx/My 100 // Mz 80	8x G1/8"	larger construction
	CPB 050	2x B	Mx/My 125 // Mz 125	6x M5	More compact design
<50kg	CPS 040	2x J	Mx/My 350 // Mz 350	8x G1/8"	larger construction
	CPB 063	2x B	Mx/My 350 // Mz 350	6x G1/8"	More compact design
<100kg	CPS 076	2 x J	Mx/My 800 // Mz 1800	5x G3/8"	
	CPB 100	3x B oder 3x J	Mx/My 800 // Mz 600	4x G3/8" 2x G1/8"	
<300kg	CPS 110	2 x J	Mx/My 1000 // Mz 1800	8x G3/8"	
	CPB 125	3x 2B oder 3x J	Mx/My 2000 // Mz 1000	8x G3/8"	
	CPS 160	2 x 2J	Mx/My 3500 // Mz 1800 (fastening with 10 x M10 12.9)	5x G3/8" 4x G1/2"	
	CPB 160	3x 2B oder 3x J	Mx/My 3000 // Mz 1500	8x G3/8"	
	CPS 210	L1 side-A; L side B/C/D	Mx/My 3500 // Mz 1800 (fastening with 10 x M10 12.9)	None (only via add-on module)	
	CPB 160	3x 2B oder 3x J	Mx/My 3000 // Mz 1500	8x G3/8"	

Rot = Poorer performance compared to reference product
Orange = Performance equally good
Grün = better performance compared to reference product

Only for internal use

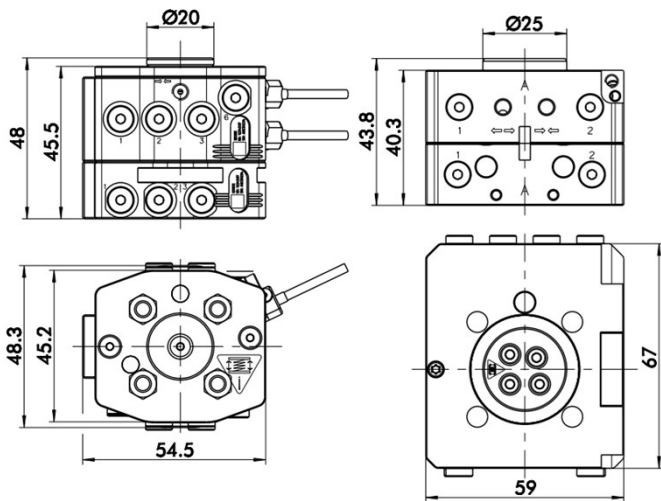
1

[@Schweinfurth, Matthias] Werte Tabelle Email aus M ergänzen

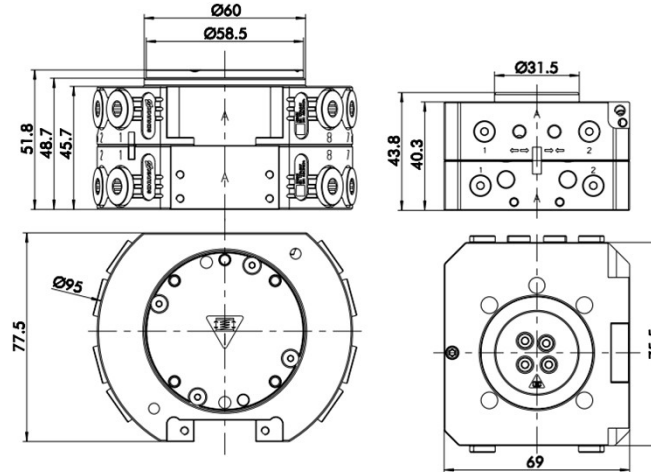
Hübsch, Florian; 2025-04-02T12:24:17.392

CPB vs. CPS Footprint

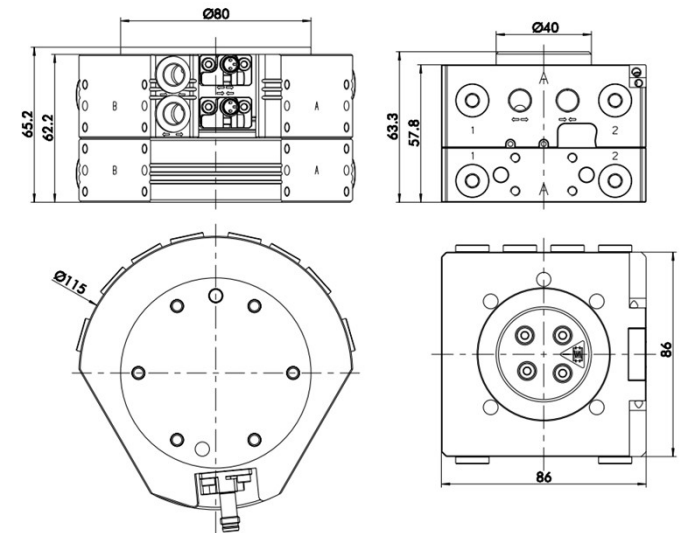
CPS 007 vs. CPB 040



CPS 021 vs. CPB 050



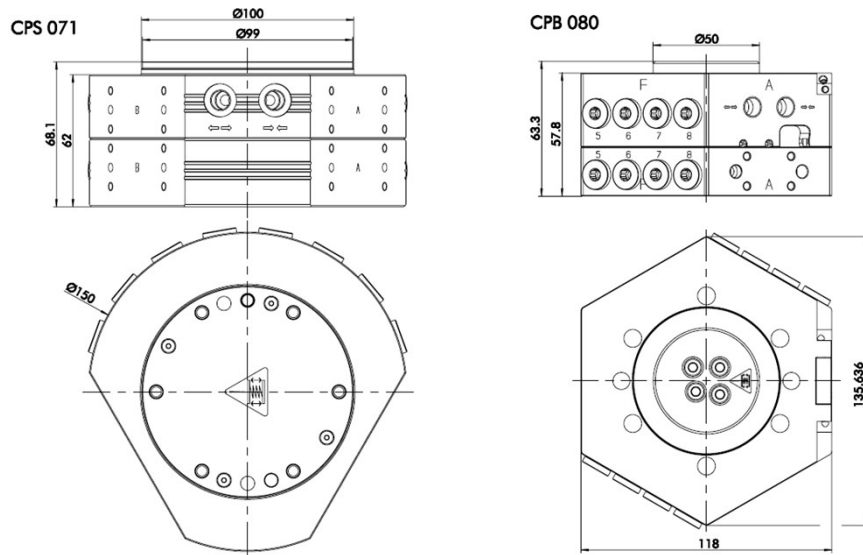
CPS 040 vs. CPB 063



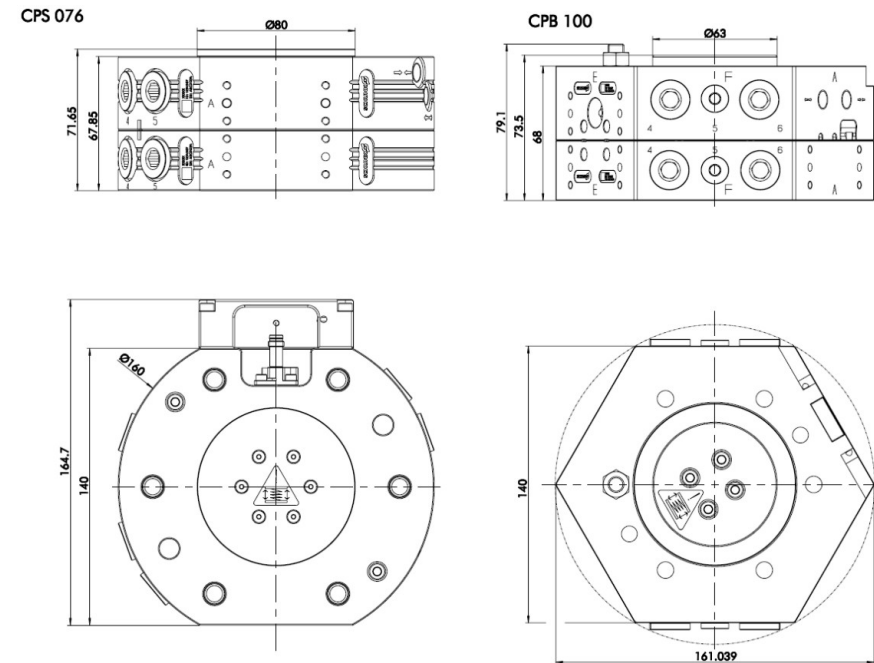
Nur für den internen Gebrauch

CPS vs. CPB Footprint

CPS 071 vs. CPB 080



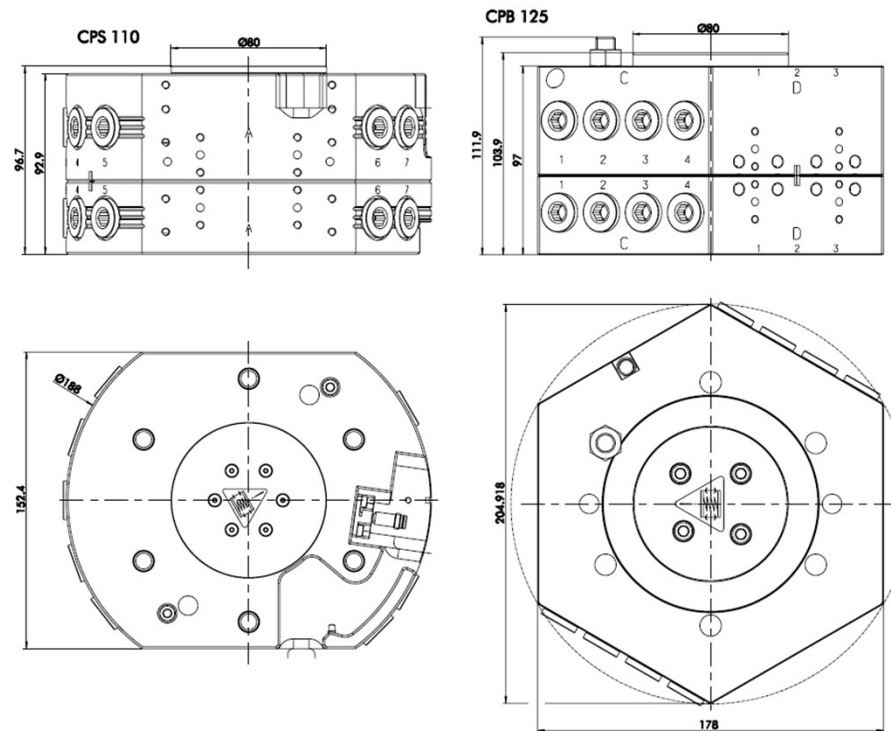
CPS 076 vs. CPB 100



Nur für den internen Gebrauch

CPB vs. CPB Footprint

CPS 110 vs. CPB 125

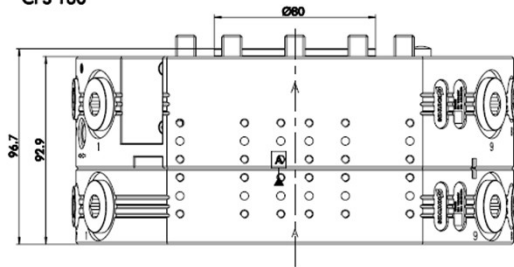


Only for internal use

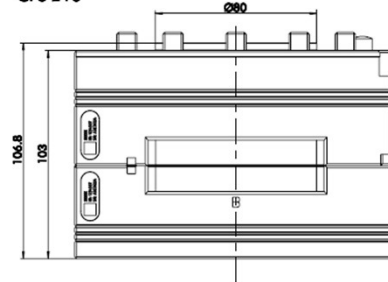
CPS vs. CPB Footprint

CPS 160 vs. CPS 210 vs. CPB 160

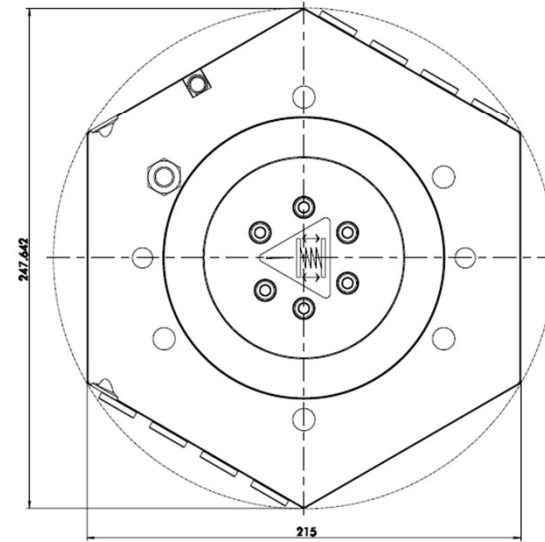
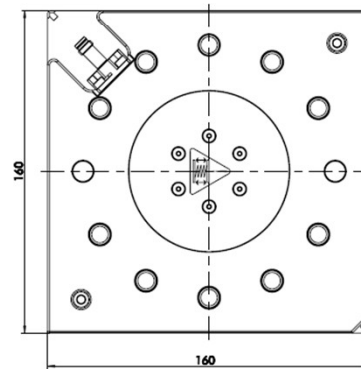
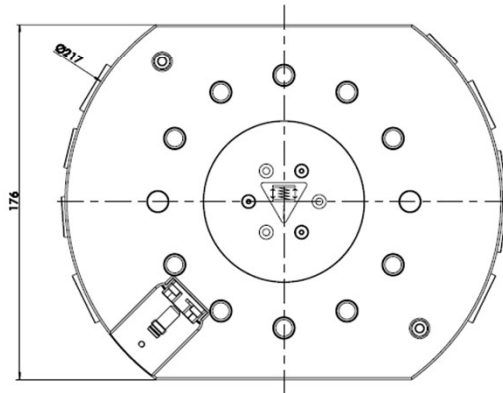
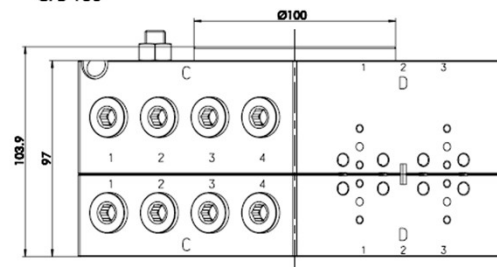
CPS 160



CPS 210



CPB 160



Only for internal use

CPB – Characteristics

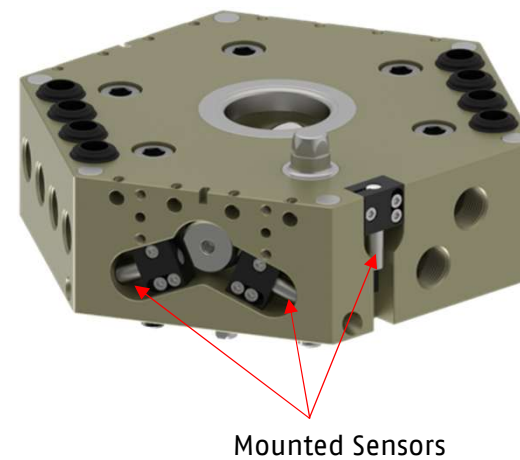
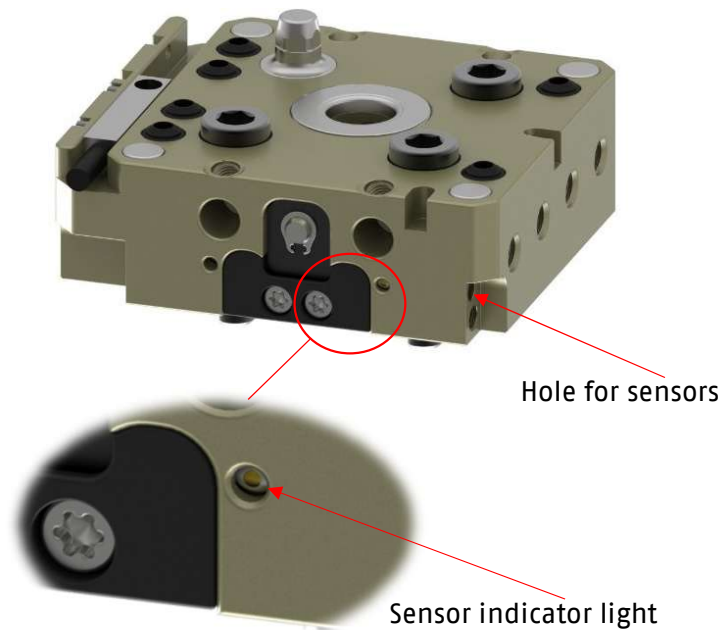
CPB Sensors



No pre-assembled sensor

→ Customer can push it in until it stops.

-> Various sensor variants possible, e.g. open wires, plugs,



Only for internal use

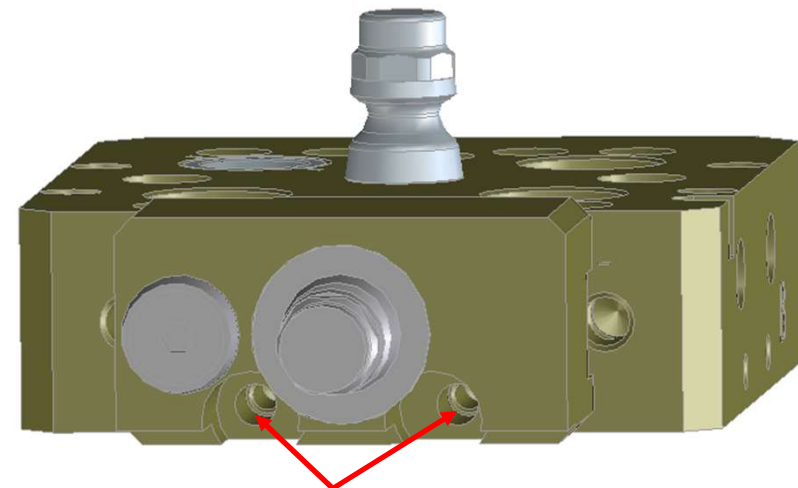
CPB – Thread on screw-on surfaces

- These threads are required to fasten the side adapter plates for the CTS-B. Two screws are used for this in addition to the bolts.

Mounting this adapter plate using only the bolts is not permitted!



Example: View of surface A, CPB 040-A



Screws must be screwed in here

Only for internal use

CPB – Characteristics

CPB Mounting patterns

Depending on the size there are:

→ CPB rectangular (size 040 to 063)

→ CPB master:

- One flat = internal pneumatic feed-throughs
- Two flats= mounting flats for modules
- One flat= Connections for controlling CPB master

→ CPB adapter:

- One flat = internal pneumatic feed-throughs
- Two flats= mounting flats for modules
- One flat = mounting flat for storage

→ CPB hexagonal* (size 080 to 160)

→ CPB master:

- Two flats = internal pneumatic feed-throughs
- Three flats= mounting flats for modules
- One flat = Connections for controlling CPB master

→ CPB adapter:

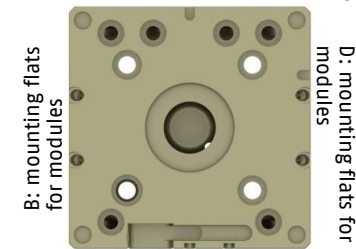
- Two flats = internal pneumatic feed-throughs
- Three flats = mounting flats for modules
- One flat = mounting flat for storage

* from size 100 you can screw on 2 modules per flat



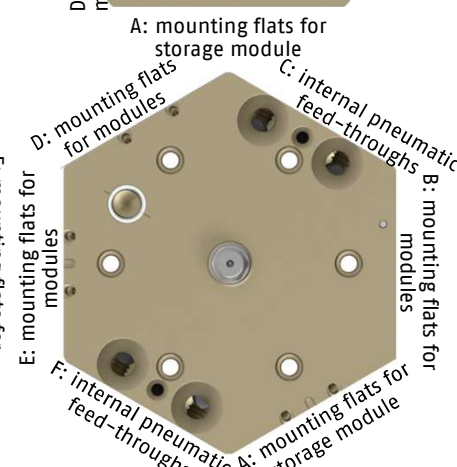
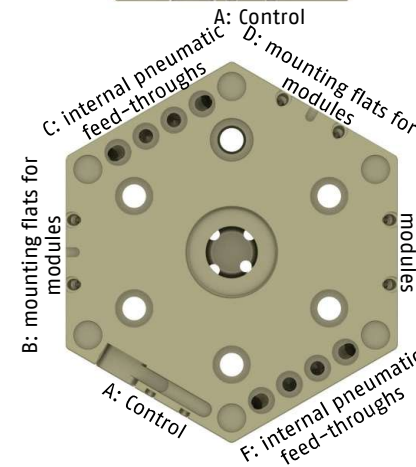
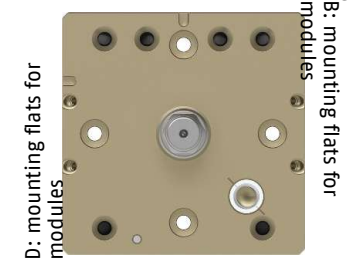
CPB master

C: internal pneumatic feed-throughs



CPB Adapter

C: internal pneumatic feed-throughs



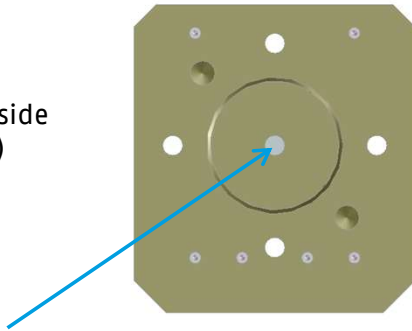
Overview of the number of mounting flats for optional modules			
	Single OM	Double OM	J16
CPB 040	2		
CPB 050	2		
CPB 063	2		
CPB 080	3		
CPB 100	3		3
CPB 125		3	3
CPB 160		3	3

Only for internal use

CPB – Manual Emergency Release

Scenario: CPB master and tool were coupled using compressed air. Now the changer can not be decoupled (e.g. no more compressed air available, crash, etc.).

(view tool side
CPB 050-A)

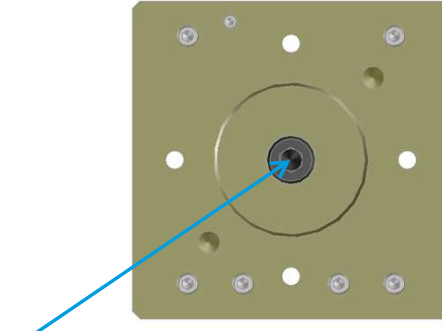


Option 1 – not possible

Sizes 040, 050.

Reason: Clamping bolt is screwed into the CPB adapter (using thread) and therefore cannot be removed in the direction of the customer's tool.

(view tool side
CPB 063-A)



Option 2 – possible

Sizes 063, 080, 100, 125, 160

Reason: clamping bolt is screwed into the CPB adapter using a screw (hexagon socket) and can therefore be removed. Then CPB Master can be disassembled (including clamping bolt).

Requirement: tool of customer has been screwed into CPB adapter (thread).

Only for internal use

CPB – Characteristics

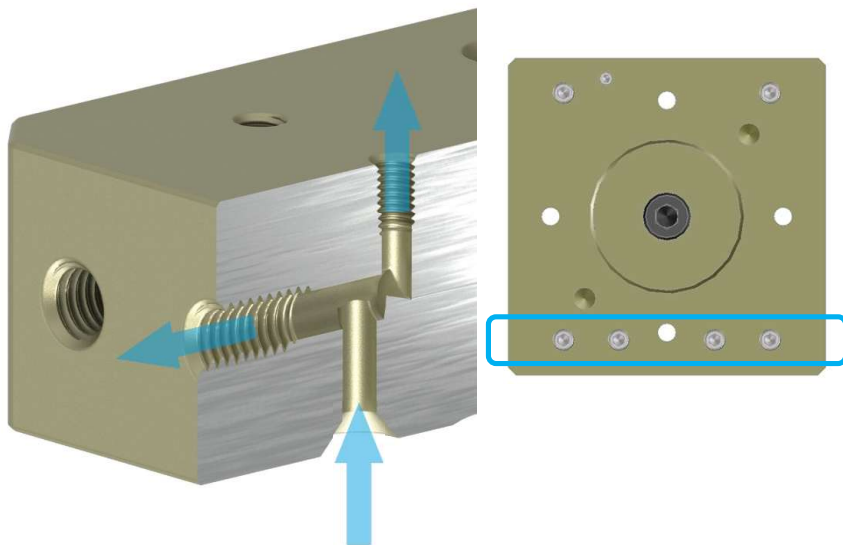
CPB Tool

- Internal pneumatic feed-throughs can be used radially or axially, for all sizes

Both vacuum and pressed air (form seals)

- ONLY ADAPTER SITE

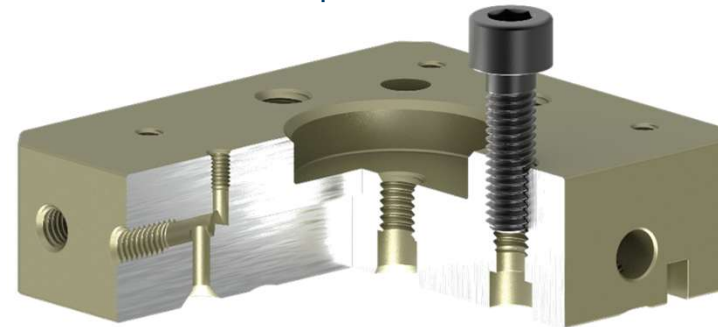
- Axial ones are closed with sealing plugs



Only for internal use

- Two ways to attach the customer tool, for all sizes

Use thread in CPB adapter



Thread in the customer tool



Materials

	CPB
Housing and functional parts	
Housing (master and adapter)	high-strength aluminum alloy Hard anodized EN-AW 7075 (AlZn5,5MgCu – 3.4365)
Piston (master)	high-strength aluminum alloy Hard anodized
Functional parts (attachment points, sockets) in master and adapter	Stainless steel X90CrMoV18 (1.4112) vacuum hardened
Seals	NBR
Clamp holder for sensors	3D printed from polyamide
clamping bolt	1.4112 / X90CrMoV18, vacuum hardened
Screws	different materials and strength classes



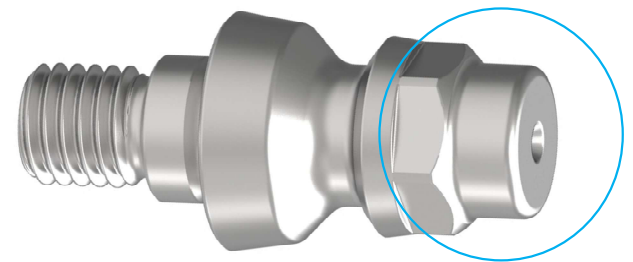
Advantage CPB:

Robust material means maximum performance Steel parts are used in all stationary clamping systems therefore cost efficiency for SCHUNK

Only for internal use

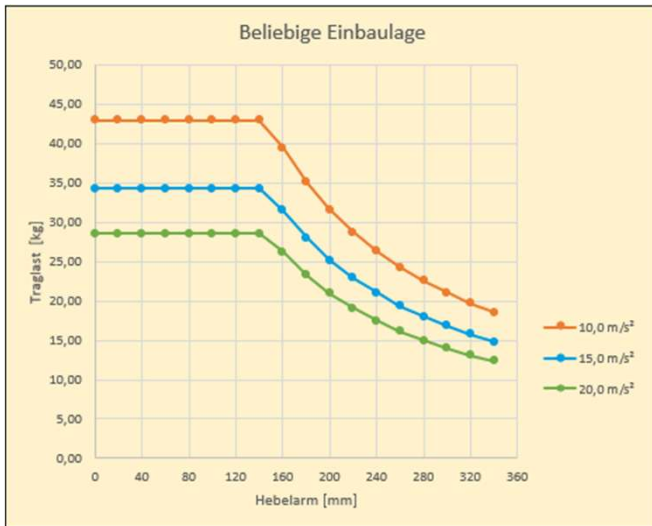
Materialen Clamping Pin

- 3 Different sizes of clamping pin available: diameter 10 mm, 20 mm and 40 mm (version A bolt)
- Visible "jumps" regarding moment payload values in technical data sheet
- Stainless steel (1.4112 / X90CrMoV18), vacuum-hardened
- Glued into CPB Adapter and tightened with torque
- **Multiple part use:** the same clamping bolt is also used For CTS-B, hence the flat surface at the upper end



Only for internal use

Load diagrams – Description



NEW representation: Customers can quickly find a suitable size without detailed calculation of the maximum moments and forces.

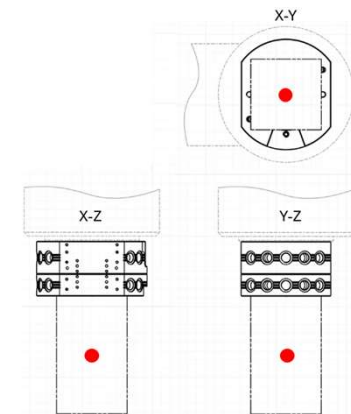
Procedure:

Depending on the additional robot acceleration and the lever arm*, the maximum load that can be attached to the tool changer can be determined.

*Lever arm:

The lever arm shown is the center of gravity distance in the Z direction (extension of the last robot axis). This diagram assumes that the load is mounted centrally and that the center of gravity of the load is not shifted in the X and Y directions.

Centric load case



As soon as an off-center center of gravity load is present: calculate M_{xyz} dynamically and compare it with the dynamic moment values given in the catalog.

Only for internal use

Load diagram – selection

Examples:

Details:

Lever arm in Z-direction: 200 mm

robot acceleration $20 \frac{m}{s^2}$

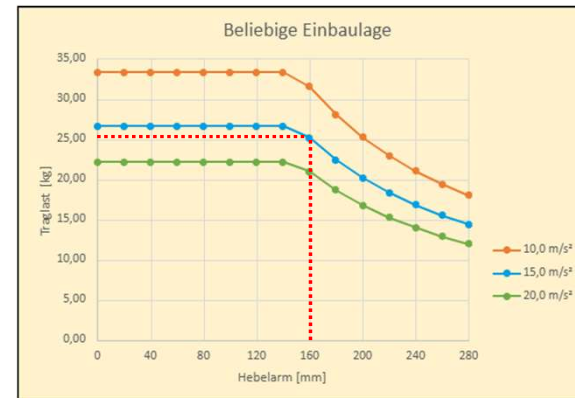
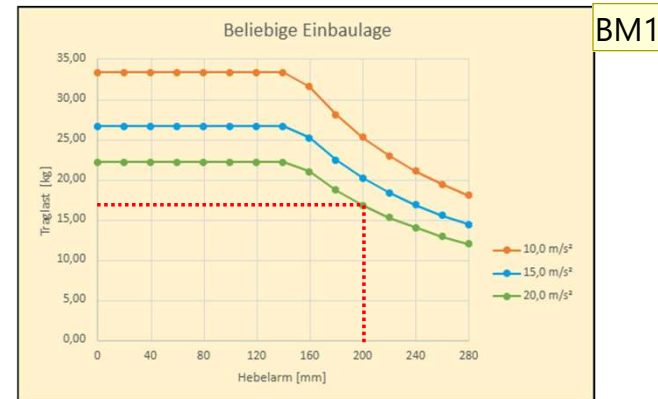
Result: 17 kg

Details:

Lever arm in Z-direction : 160 mm

robot acceleration $15 \frac{m}{s^2}$

Result: 25,4 kg



Only for internal use

BM1

Diagramme auf englisch?

Matyssek, Barbara; 2025-03-04T08:36:04.399

Designation system COB Z

COB Z81–Interface1 / Interface 2



COB	Z81	Interface 1	Interface 2
Series	Size		
Changer Optional Module SCHUNK	The letter Z indicates that it is an adapter plate. The two digits have no further meaning	B (New: bolt COB)	J BJ (New: bolt COB) or J A number at the beginning of the second interface = number of interface

Adapter plates available

ID no.	Description	Interface 1	Interface 2
1610145	COB Z81–B/J	B	J
1610150	COB Z82–B/2BJ	B	2x B oder 2x J

Only for internal use

Competitive comparison

Hint:

See Slides from competitive comparison CPS

		Referenzprodukt		Vergleichsprodukte					
Traglastbereich	Kriterium	SCHUNK CPS 007	SCHUNK CPS 011	SCHUNK CPB 040	ATI QC 007	ATI QC 011	Zimmer WWR 040	Stäubli MPS 015	Stäubli MPS 025
<16kg	Teachbarkeit	Kugelverriegelung		Spannschieber, kleineres Einführspiel in XY, Z			Linienberührende Verriegelungsbolzen, Plananlage	Kugelmechanik mit kreuzförmig angelegten Positionierflächen	Kugelmechanik mit kreuzförmig angelegten Positionierflächen
	Sicherheit (bei Druckabfall)	Selbsthaltung + Feder (Spaltminimierung)			Spaltbildung	Spaltbildung	Feder	Feder	Feder
	Max. Moment/ Traglast	30/50 Nm (dynamisch), 16 kg	35/50 Nm, 16 kg	100/100 Nm, 20 kg	61/38 Nm, 16 kg	61/38 Nm, 16 kg	90/70 Nm (statisch), 20 kg	15/75 Nm (statisch) 52/52 Nm (dynamisch), 10 kg	34/34 Nm (statisch) 119/119 Nm (dynamisch), 20 kg
	Eigenmasse/ Störkontur	0,24 kg/ 54,5 x 48,3 x 45,5	0,22 kg / 50 x 36,1	0,35 kg/ 91 x 40,5	0,24 kg/ 54,5 x 48,3 x 45,5	0,22 kg/ 50 x 36,1	0,21 kg / 50 x 37	0,4 kg / 42 x 46	0,58 kg / 54 x 46
	Direktanschraubung, ISO 9409	ISO-031.5	Kein ISO	ISO-040		Kein ISO	ISO-040		ISO-040
	Lebensdauer/ Zyklenzahl	5 Mio.						"millionenfach"	"millionenfach"
	Luftdurchführungen integriert	6x M5			5x M5		4 x M5	8 x M5	8 x M5
	Anzahl Anschraubflächen	1 Anschraubfläche		2 Anschraubflächen				Bis zu 4 Anschraubflächen	Bis zu 4 Anschraubflächen
	Sensoroptionen	Verriegelung (im Gehäuse)	Verriegelung (zusätzlicher Aufbau)	Verriegelung und Werkzeuganwesenheit		Verriegelung (zusätzlicher Aufbau)	Verriegelung und Werkzeuganwesenheit	Verriegelung und Werkzeuganwesenheit	Verriegelung und Werkzeuganwesenheit

Rot = schlechtere Performance im Vergleich zu Referenzprodukt
 Orange = Performance gleich gut
 Grün = bessere Performance im Vergleich zu Referenzprodukt

Only for internal use

Q&A

Only for internal use

Technical questions

Can COS option modules also be screwed onto CPB tool changers?

- Yes, with the help of adapter plates, which can be found here. A COS can also be attached directly to some sizes, see [CPB screw-on surfaces](#).

Can a CPB changer be manually emergency unlocked?

- Yes, mechanically possible from size o63. For instructions/description, see slide “Manual emergency release”.

Why doesn't the CPB master have two centering pins like the CPS master?

- The clamping bolt is designed as an A-bolt. The second centering bolt is the bolt that is also designed as a fastening screw in the direction of the robot flange (dual function). This is designed as a B-bolt, which means that the CPB also has two centering bolts that absorb the moment load M_z . So that our customers can use this bolt during assembly, it is pre-assembled with a lock nut on the CPB master when delivered.

Why does SCHUNK not offer the CPB with pre-assembled monitoring sensors?

- As all monitoring sensors (locking sensors and tool presence) are “plug & play”, they are offered or sold as an option and can be installed quickly and easily using the mounting kits (to the stop).

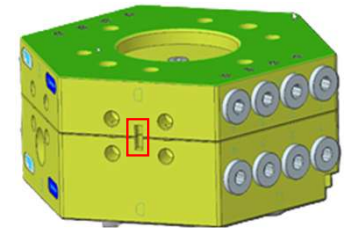
Technical questions

Can magnetic monitoring sensors also be offered?

- No, only inductive sensors is possible (for both locking and tool presence sensing).

Is there a teaching aid for the CPB?

- Yes, an optical aid for teaching the changer is integrated in the head and in the adapter in all sizes (milled groove, see image).



How is the maximum Z distance determined before the coupler is coupled?

- This is measured between the steel inserts of the head and the contact surface of the adapter.

Why does the CPB have internal springs?

- Despite its self-locking locking mechanism, additional piston springs were installed to reduce the gap formation to almost "0" (< 0.05 mm for all sizes) in the event of a drop in compressed air.

Can the pressure run be switched off after coupling the head and adapter?

- No, SCHUNK always recommends active pressurization (especially in dynamic applications).

Technical questions

Can the clamping bolt be purchased separately or individually instead of the CPB adapter?

- Depends on the application. As further technical details (tolerances, design templates, etc.) are relevant for users, this must be checked in advance by the product sales department in each individual case

Is there a “missed tool sensor” for the CPB (CPB master locked, but coupled without adapter)?

- No, but for example with the help of the ready-to-lock sensor or the customer uses a COB or COS option module to monitor the presence of the adapter in the coupled state.

How does SCHUNK ensure that the clamping bolt on the CPB adapter does not come loose?

- The clamping bolt is glued in and tightened with torque.

Technical questions

Are the molded gaskets/press-in sleeves from CPB 1:1 the same as those from CPS?

- Yes, they are the same part numbers depending on the size of the seal and sleeve.

Why are the fastening screws on the piston cover of the CPB master arranged asymmetrically (top view)?

- Because the cover is aligned or mounted in a defined position due to the clamping sliders. This clear measure ensures correct installation.

Can the functional earth (FE) be discharged via the tool changer (e.g. when using an electric gripper EGU or EGK)?

- No, because the contact resistance between the head and adapter is too high ($> 1 \text{ Ohm}$): the threads in the aluminum housing are also coated and an earthing point may have to be attached to the CPB adapter for the customer-side connection.

Is there a smaller size available than CPB 040?

- Because of technical reasons there is no smaller standard size available, but SCHUNK offers a standard interface plate to reduce the bolt diameter from ISO-040 to ISO-031,5. For those applications you can offer CPB 040.

Why did SCHUNK integrate inlays made of steel into the tool changer body CPB master side?

- These inlays serve as contact points between master and tool and will be grinded finally before delivery to ensure repeat accuracy specified in the catalogue.

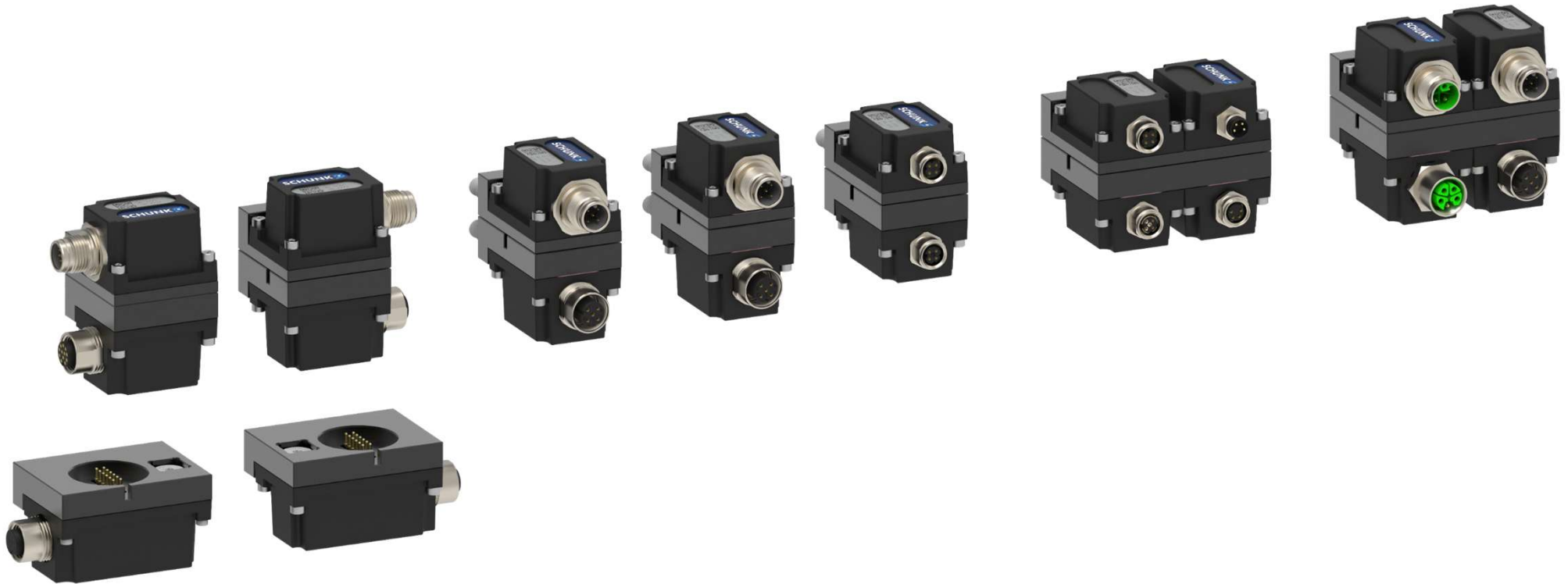
Technical questions

Do we offer the clamping bolt also in version B or C?

- Within start of sales of CPB the clamping bolt will be specified as A-bolt and the alignment pin as B-bolt. If customer is requesting further changers "in line" e.g. VERO-S modules, then please contact product sales.

COB

COB



Only for internal use

Naming systematic COB



COB S25 – K – HT

COB	S25	K	XX
COB	S25	A	XX
Series	Module name	K = Master A = Adapter	Versions E.g. High temperature (HT) etc.

Changer
Optional
Modules
Bolt



Hint: new development with more than 50 variants

Only for internal use

COB – In general

Module names COB



Signal

COB S12R-K
COB S12L-K
COB S12R-A
COB S12L-A
COB S12RC-A
COB S12LC-A
COB S8-K
COB S8R-K
COB S8L-K
COB S8-A
COB S8R-A
COB S8L-A
COB S8LR-A
COB S6LR-A

Communication

COB CB1-K
COB CB1-A
COB CB2-K
COB CB2-A
COB CB3-A ***
COB CB4-K *
COB CB4-A **
COB CB6-K
COB CB6-A
COB CI01-K
COB CI01-A

Power

COB P1-K
COB P1-A
COB P2-K
COB P2-A
COB P3-K
COB P3-A
COB P4W-K
COB P4-K
COB P4-A
COB P4C-A

Fluids

COB A6M5-K
COB A6M5-A
COB A6M5A-K
COB A6M5A-A
COB A618A-K
COB A618A-A
COB A10M5-K
COB A10M5-A
COB V1A-K
COB V1A-A
COB V2A-K
COB V2A-A



- * EGU/EGK master module
- ** EGU Adapter module
- *** EGK Adapter module

Only for internal use

New mounting pattern

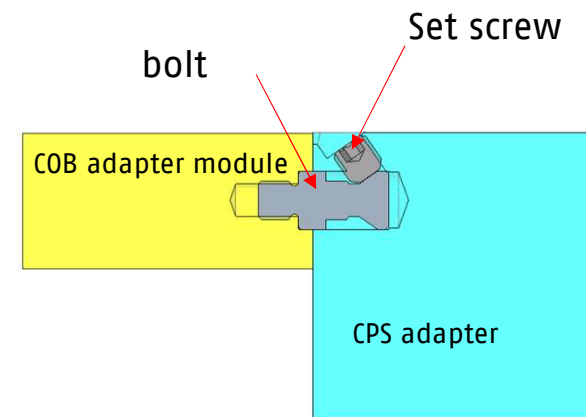
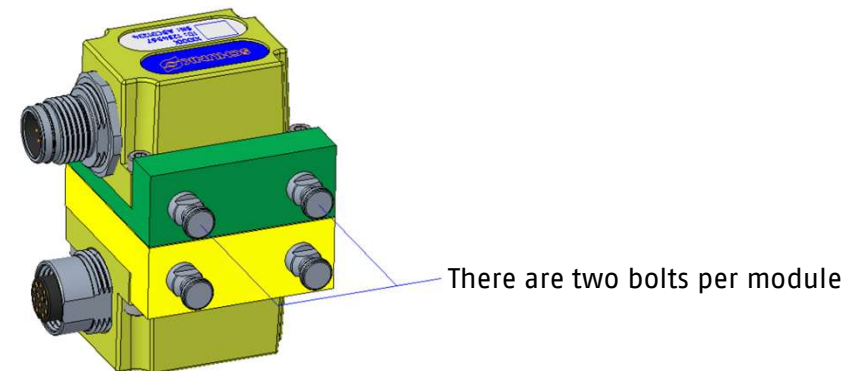
Mounting the modules with bolt interface

1. Insert the module onto the mounting surface
2. Fix the module with grub screws (included in the scope of delivery)

1 bolt interface for all COB modules

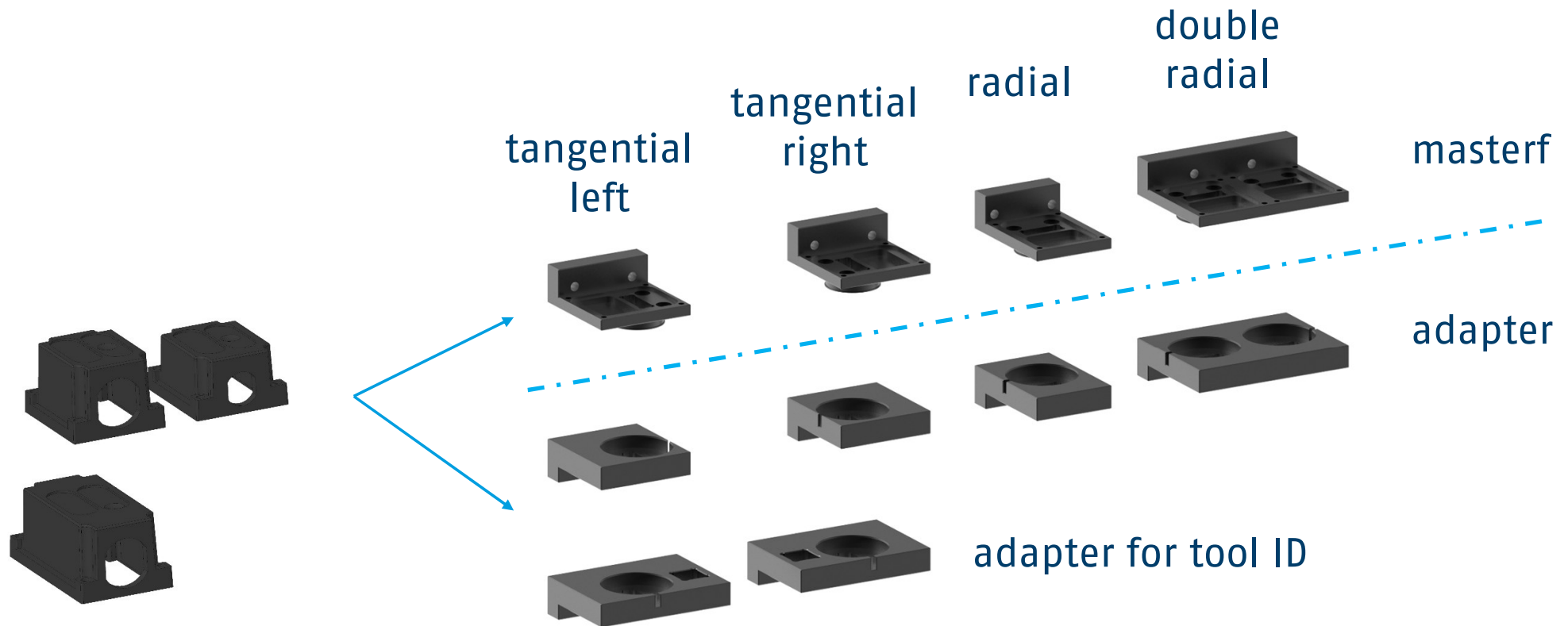
Advantages:

- Design universally usable for all sizes
- Low manufacturing costs
- Simple assembly "Space gained for function" – screws not radially through module housing (simpler design, compact construction)
- No limiting dimension of the two screws
- Solution in focus
- Flexible design for modules possible



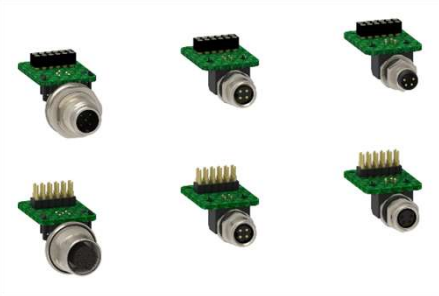
Only for internal use

Variant of connection outlets



Only for internal use

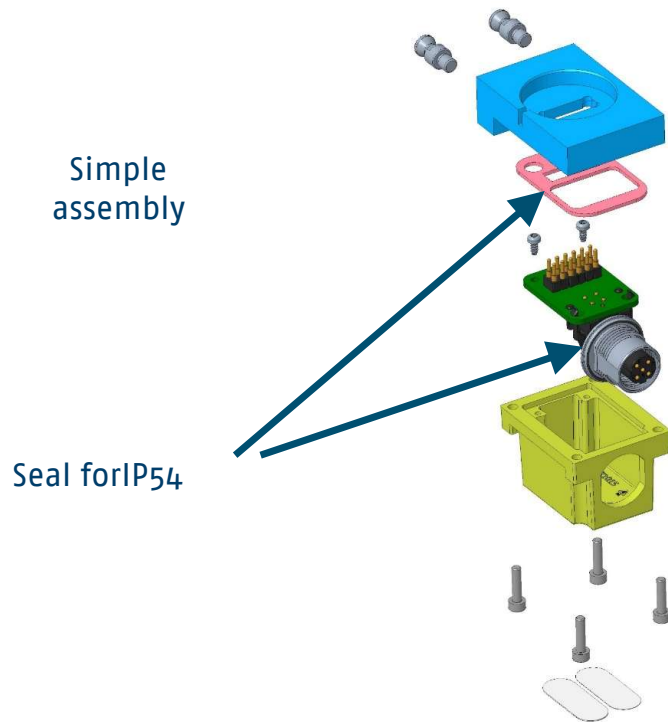
Mechanical structure: modular system

Circuit board M8	Circuit board M12	Circuit board communication	Circuit board Power
Signal (max. 48 V 1,5 A)	Signal (max. 48 V 1,5 A)	ProfiNet EtherCAT Ethernet IP IOLink ModBus	Power EGU/EGK/EZU
			

Only for internal use

COB – Characteristics

Circuit board with plug No soldering necessary



Simple
assembly

Seal for IP54



Advantage:

Board can be replaced, better servcability

Signal



Communication

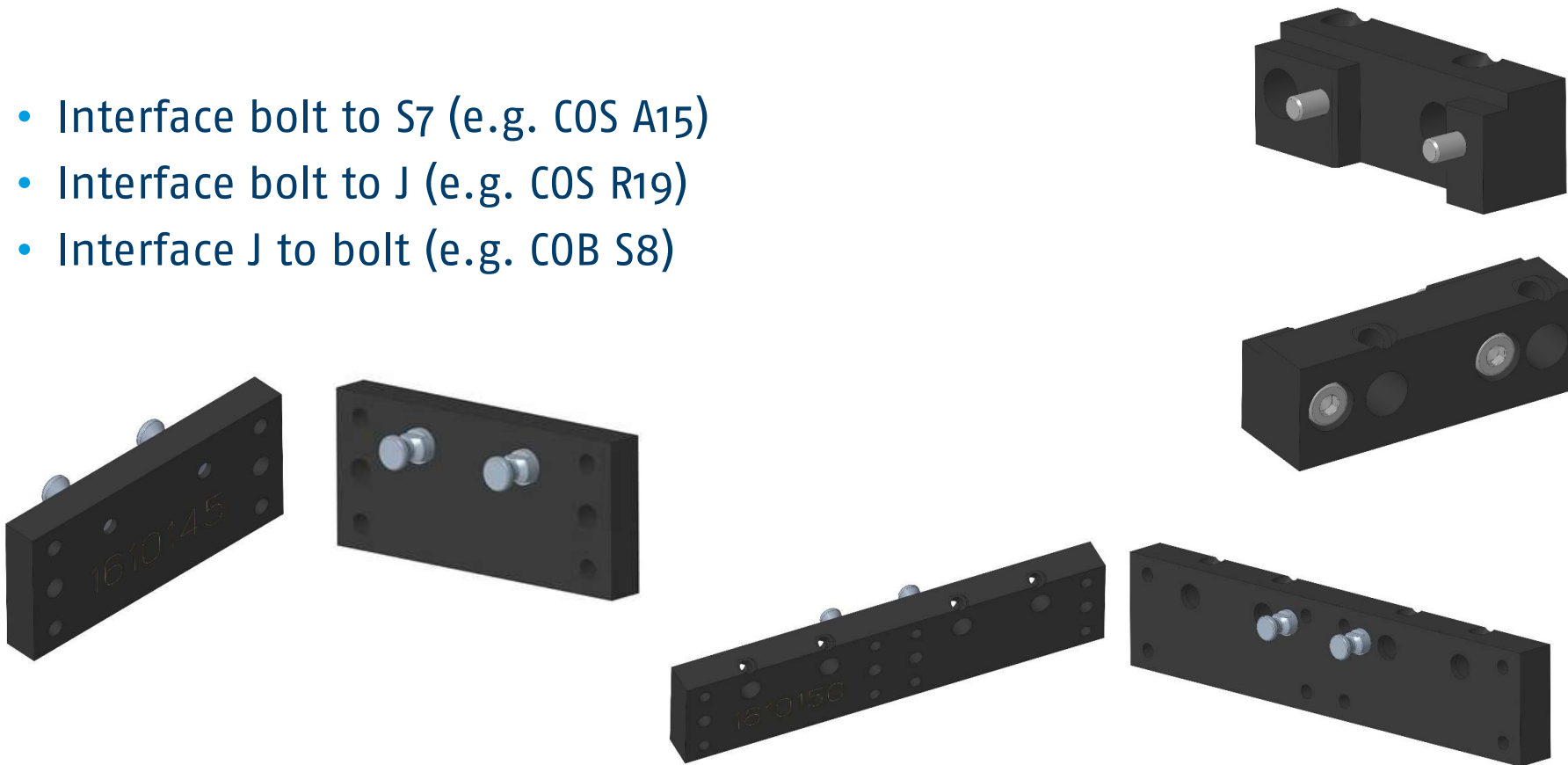
Power

One Interface for all PCB's with 12 contacts and M8 / M12 connection for all functions

Only for internal use

Mounting pattern optional modules CPB/CPS Interface plates

- Interface bolt to S7 (e.g. COS A15)
- Interface bolt to J (e.g. COS R19)
- Interface J to bolt (e.g. COB S8)



Only for internal use

COB – Matching List



Matchinglist COS vs. COB

	ID	Naming	ID	naming
Signal			1606973	COB S8-K
			1606974	COB S8R-K
			1606975	COB S8L-K
			1606976	COB S8-A
			1606978	COB S8R-A
			1606979	COB S8L-A
			1607000	COB S8LR-A
			1607002	COB S6LR-A
			1586455	COB S12R-K
			1586427	COB S12L-K
			1586428	COB S12R-A
			1586421	COB S12L-A
			1586450	COB S12RC-A
			1586424	COB S12LC-A
	1586474	COS R21-A	1607020	COB P4C-A
Servo	1586475	COS R26-A	1607019	COB P4-A
	1586477	COS R26-K	1607017	COB P4-K
	1586511	COS R26W-K	1607018	COB P4W-K
	1586664	COS REP10-A	1607007	COB P2-A
	1586665	COS REP10-K	1607006	COB P2-K
Communication	1586669	COS RES10B-A	1607014	COB P3-A
	1586671	COS RES10B-K	1607012	COB P3-K
	1586639	COS RD5-A	1586385	COB CB3-A
	1586650	COS RD5-K	1586412	COB CB6-A
	1586652	COS RE10-A	1586415	COB CB6-K
	1586735	COS TE-A	1586378	COB CB2-A
	1586736	COS TE-K	1586383	COB CB2-K
	1586738	COS TP-A	1586375	COB CB1-A
Vacuum / Welding	1586740	COS TP-K	1586376	COB CB1-K
	1586922	COS PG3-A	1586922	COS PG3-A
	1586923	COS PG3-K	1586923	COS PG3-K
	1586746	COS V200A-A	1604611	COB V2A-A
	1586747	COS V200A-K	1604612	COB V2A-K
Pneumatic	1586754	COS VF1-A	1604610	COB V1A-A
	1586755	COS VF1-K	1604606	COB V1A-K
	1586843	COS P05-A	1586141	COB A10M5-A
	1586844	COS P05-K	1586357	COB A10M5-K
	1586864	COS P186A-A	1586358	COB A618A-A
	1586866	COS P186A-K	1586359	COB A618A-K

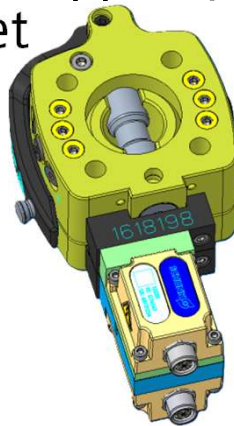
Attention: The assigned modules are not 1:1 compatible.

Only for internal use

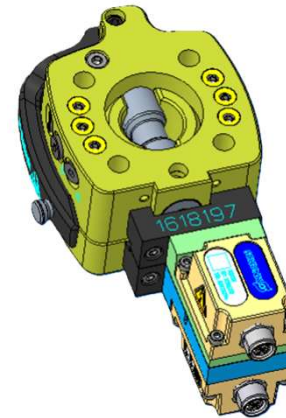
Technical questions

Is there anything special to consider with the two APL 1618197 COS Z84-K-S7/B and 1618198 COS Z84-A-S7/B?

- Yes, these can also be swapped (APL master to adapter, APL adapter to master), which changes the lateral offset



APL replaced -> offset to the left



APL not replaced (standard)-> offset to the right

Only for internal use

Matching Liste: SWM vs. CTS

ID no. SCHUNK SWM	Description	ID no. SCHUNK CTS	Description
30086648	SWM-TSL-SMA-8090/9475 SENSORHALTER	1594628	AS-CTS-P-500
302575	SWM-TSS-3314 ZWISCHEN- PLATTENROHLIN	1594574	CTS C-016-AH-CPS005-011
302571	SWM-TSS-3310 ABLAGERING SWS-005-011	1594543	CTS C-016-MM
302573	SWM-TSS-3312 ABLAGERING SWS-005	1594542	CTS C-016-MM-005
302576	SWM-TSS-3319 ZWISCHEN- PLATTENROHLIN	1594576	CTS C-025-AH-CPS020-021
302577	SWM-TSS-M5-3303 AUFLAGE- BOLZEN SWS-00	1594629	CTS C-AB-M5
302583	SWM-TSS-3308 3-POSITIONEN ABLAGE SW	1594642	CTS C-M3
302582	SWM-TSS-3306 BEFESTIGUNGS- BLOCK S	1594641	CTS C-MB
303273	SWM-TSS-VBQ-8206	1594590	CTS P-050-AV-J
303182	SWM-TSS-MMB-7130	1594545	CTS P-050-MM
303283	SWM-TSM-VBQ-8442 ZWISCHENPLATTE VERTIKAL	1594608	CTS P-150-AV-J
303281	SWM-TSM-MMB-8432 ABLAGEMODUL	1594547	CTS P-150-MM
303267	SWM-TSL-RMB-R000 ABLAGEMODUL STARR	1594549	CTS P-500-MM
303276	SWM-TSS-MM-7869 ABLAGEPLATTE SWS-0	1594527	CTS T-001-MM
1459976	SWM-TSS-MMS-11345	1594541	CTS T-016-MM

Only for internal use

Matching Liste: SWM–B vs. CTS

ID no. SCHUNK SWM–B	Description	ID no. SCHUNK CTS	Description
1523876	AS-SWM-B-V-IN30K-L INKL. SENSOR für*	1523876	AS-CTS-B-V-IN30K-L
1523878	AS-SWM-B-V-IN30K-T INKL. SENSOR für*	1523878	AS-CTS-B-V-IN30K-T
1529468	Ablagebolzen SWM-B 050	1529468	CTS B-016-AB
1523807	A-SWA-005/011-SWM-B 050	1523807	CTS B-016-AH-CPS005-011
1523840	A-SWA-005/011-SWM-B 050-V	1523840	CTS B-016-AH-V-CPS005-011
1523812	A-SWA-007-SWM-B 050	1523812	CTS B-016-AV-7B
1523842	A-SWA-007-SWM-B 050-V	1523842	CTS B-016-AV-V-7B
1459336	SWM-B 050 Ablagemodul	1459336	CTS B-016-MM
1542887	Verdrehsicherung SWM-B 050-V	1542887	CTS B-016-V-AR
1529834	Ablagebolzen SWM-B 085	1529834	CTS B-100-AB
1523816	A-SWA-020/021/022-SWM-B 085	1523816	CTS B-100-AH-CPS020-021
1523817	A-SWA-040-SWM-B 085	1523817	CTS B-100-AH-CPS040
1523819	A-SWA-041-SWM-B 085	1523819	CTS B-100-AH-CPS041
1523828	A-SWA-060-SWM-B 085	1523828	CTS B-100-AH-CPS060
1523830	A-SWA-071-SWM-B 085	1523830	CTS B-100-AH-CPS071

Only for internal use

Matching Liste: SWM–B vs. CTS

ID no. SCHUNK SWM–B	Description	ID no. SCHUNK CTS	Description
1523831	A-SWA-076-SWM-B 085	1523831	CTS B-100-AH-CPS076
1523845	A-SWA-020/021/022-SWM-B 085-V	1523845	CTS B-100-AH-V-CPS020-021
1523846	A-SWA-040-SWM-B 085-V	1523846	CTS B-100-AH-V-CPS040
1523860	A-SWA-041-SWM-B 085-V	1523860	CTS B-100-AH-V-CPS041
1523862	A-SWA-060-SWM-B 085-V	1523862	CTS B-100-AH-V-CPS060
1523865	A-SWA-071-SWM-B 085-V	1523865	CTS B-100-AH-V-CPS071
1523869	A-SWA-076-SWM-B 085-V	1523869	CTS B-100-AH-V-CPS076
1523836	A-SWA-J16-SWM-B 085	1523836	CTS B-100-AV-J
1523875	A-SWA-J16-SWM-B 085-V	1523875	CTS B-100-AV-V-J
1459339	SWM-B 085 Ablagemodul	1459339	CTS B-100-MM
1489443	Befestigungsplatte SWM-B	1594752	CTS B-MP-1
1547060	Befestigungsplatte SWM-B universal	1594753	CTS B-MP-2

Only for internal use

Feedback

Do you have suggestions for improvement or other input?

If so, please send an E-Mail with the subject line and include the relevant details to:

automationsolution@de.schunk.com

Suggestions for improvement „Technical Product Guide CHANGING“

Only for internal use



Hand in hand for tomorrow

© SCHUNK SE & Co. KG
[schunk.com](https://www.schunk.com)