



Superior Clamping and Gripping



Product data sheet

Jaw quick-change system BSWS-M-PGZN-plus 50

BSWS-M-PGZN-plus

Jaw quick-change system

Productive. Flexible. Cost-effective.

Tool-free jaw quick-change system BSWS-M

The tool-free BSWS-M jaw quick-change system allows top jaws to be exchanged on the gripper manually and rapidly. Two adapter pins (= one BSWS-A set) and a base (BSWS-BM) are required for each gripper jaw. In case of reverse assembly and provided that no additional height is created, two adapter pins (= one BSWS-AR set) and an assembly kit (BSWS-URM) per gripper jaw are required. Another effect of the BSWS-URM is that there are no more problematic mounting holes in the finger contours.

Field of application

For handling of various components or frequent conversion of automated production lines in clean to dirty environments.

Advantages – Your benefits

Universal application possibilities By using the BSWS-M, just one single gripper is necessary for various applications

Tool-free jaw change via the unlocking button easy and fast for a high gripper flexibility

Saving time when converting applications Different workpieces can be handled by exchanging the gripper fingers



Sizes
Quantity: 9

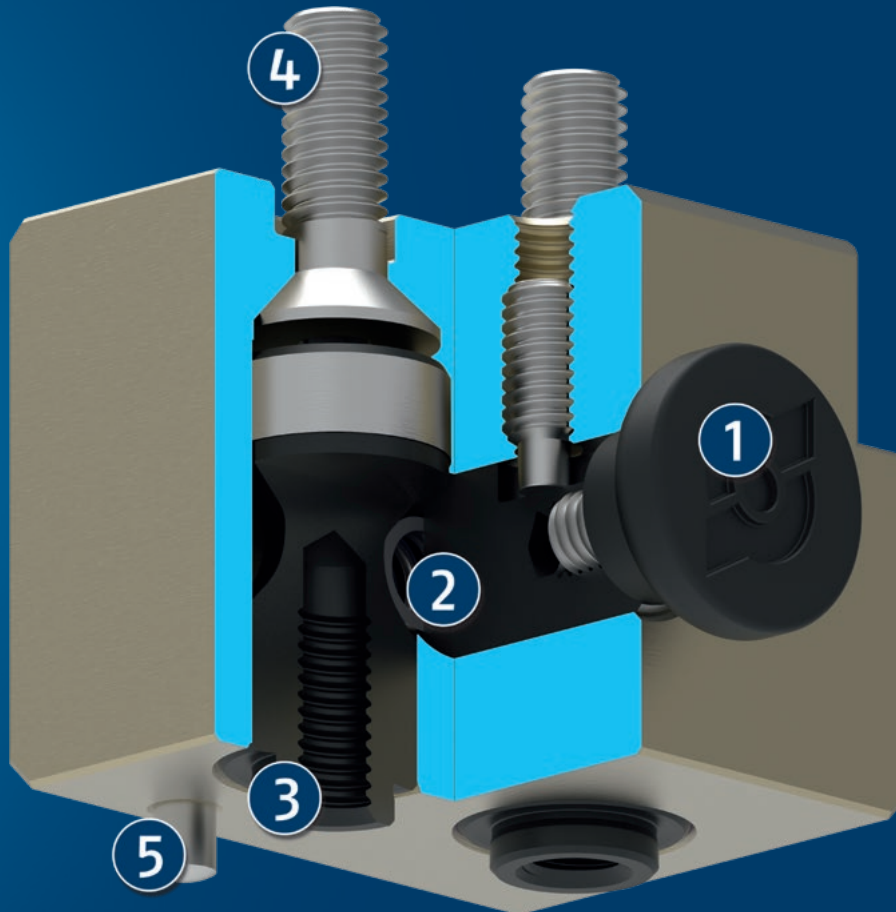


Weight
0.002 .. 1.67 kg

Functional description

The BSWS-M consists of a base, which is firmly screwed to the gripper, and two adapter pins, which are fastened to the gripper fingers to be exchanged. The form-fit locking mechanics ensures fast exchange of the gripper fingers. No

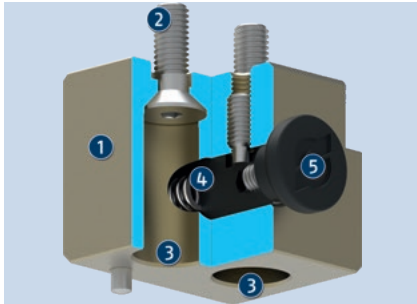
tools are required for the exchange. Two adapter pins (= one BSWS-A set) and a base (BSWS-BM) are required for each gripper jaw.



- ① Unlocking button
- ② Spring preloaded locking pin
- ③ Adapter pin BSWS-A for fastening the gripper finger to be exchanged
- ④ Screw connection for mounting on the gripper
- ⑤ Optional alignment pin to avoid errors with different gripper fingers (Poka Yoke)

Detailed functional description

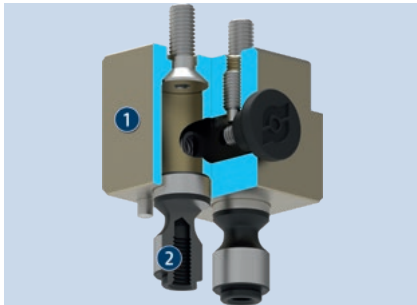
BSWS-BM in locked state without BSWS-A adapter pin



The locking pin is spring preloaded and therefore locked as standard. To assemble/disassemble a gripper finger with the BSWS-A adapter pins, the unlocking button must be pressed.

- ① Base BSWS-BM
- ② Screw connection for mounting on the gripper
- ③ Mounting bore for adapter pin BSWS-A
- ④ Spring preloaded locking pin
- ⑤ Unlocking button

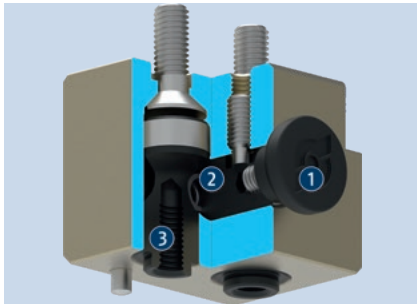
BSWS-BM in unlocked state (release button is pressed)



Insert the two BSWS-A adapter pins that are threaded onto the gripper fingers into the two mounting bores of the base BSWS-BM.

- ① Base BSWS-BM
- ② Adapter pin BSWS-A

BSWS-BM in locked state with BSWS-A adapter pin



No tool is required to lock the BSWS-A adapter pins in the base. The unlocking button is simply released. There is a positive fit between the spring-preloaded locking pin and the two BSWS-A adapter pins. The spring force then prevents the gripper fingers from falling out again.

- ① Unlocking button
- ② Spring preloaded locking pin
- ③ Adapter pin BSWS-A

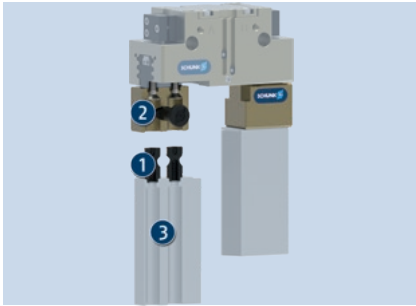
Optional alignment pin to avoid errors (Poka Yoke)



The BSWS-BM base is provided with a fitting to press in a dowel pin, if required. This alignment pin can optionally be used e.g. to exclude incorrect assembly of the gripper fingers if the left and right gripper jaws are different and therefore must not be interchanged (Poka Yoke).

- ① Base BSWS-BM (without alignment pin)
- ② Base BSWS-BM (with pressed-in alignment pin)
- ③ Gripper finger 1 (without bore hole for alignment pin)
- ④ Gripper finger 2 (with bore hole for alignment pin)

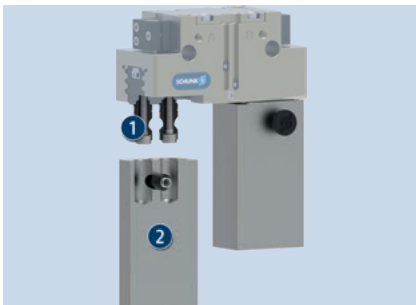
Jaw quick-change system BSWS-A/-BM



By combining BSWS-A and finger blank, a simple exchange of the gripper fingers is possible. The base BSWS-BM with the locking mechanism remains on the gripper during the jaw change. Only the gripper fingers are replaced.

- ① Adapter pin BSWS-A
- ② Base BSWS-BM
- ③ Finger blanks ABR/SBR

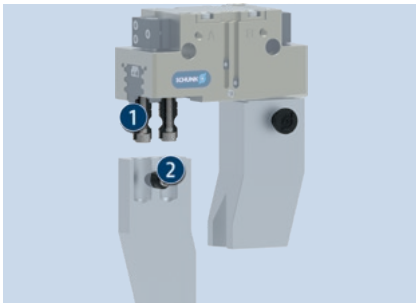
Jaw quick-change system BSWS-AR with BSWS-ABRM



In this version, the BSWS-AR adapter pins are screwed directly onto the base jaw of the gripper and remain there during exchange of finger. The locking mechanism is integrated into the BSWS-ABRM finger blank. This makes it possible to use the entire finger length for the workpiece-specific clamping contour. The workpiece-specific clamping contour can be adapted by machining the finger blank.

- ① Adapter pin BSWS-AR
- ② Finger blank BSWS-ABRM

Jaw quick-change system BSWS-AR with BSWS-URM



The BSWS-URM is designed for incorporation into workpiece-specific gripper fingers that cannot be produced by machining the BSWS-ABRM finger blank. The BSWS-URM contains the individual components of the locking mechanism (without finger blank) for incorporation into workpiece-specific gripper fingers.

- ① Adapter pin BSWS-AR
- ② BSWS-URM

Release button (can be removed if necessary)



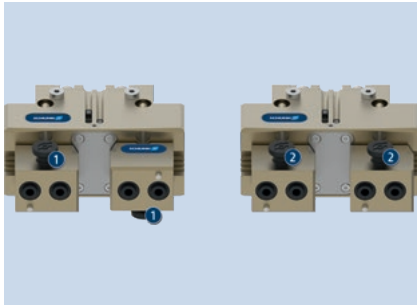
The release button on the jaw quick-change systems BSWS-M allows to exchange the gripper fingers by hand and without tools. If the projection of this release button should disturb in the application due to very limited space, it can be unscrewed. In addition, unscrewing it can prevent unintentional actuation, as the spring-preloaded locking bolt then closes flush and does not protrude.

- ① Base BSWS-BM
- ② Release button (pre-assembled as standard)
- ③ Spring preloaded locking pin
- ④ Release button (can be unscrewed if necessary)

BSWS-M-PGZN-plus

Jaw quick-change system

Mounting options BSWS-BM



The two basic modules BSWS-BM are mounted on the base jaws of the gripper. The two release buttons point in the opposite direction. Alternatively, the two basic modules BSWS-BM can be mounted on the base jaws of the gripper in such a way that both release buttons face the same side. It should be noted that the BSWS-BM base modules are not symmetrically oriented toward the center of the gripper. However, the relevant position of the gripper fingers is always symmetrical.

- ❶ The release buttons on the BSWS-BM point in the opposite direction.
- ❷ Both release buttons on the BSWS-BM point to the same side and can be operated from one side.

BSWS-M-PGZN-plus

Jaw quick-change system

General notes about the series

Adapter pin material: Steel

Actuation: Tool-free, by hand

Warranty: 24 months

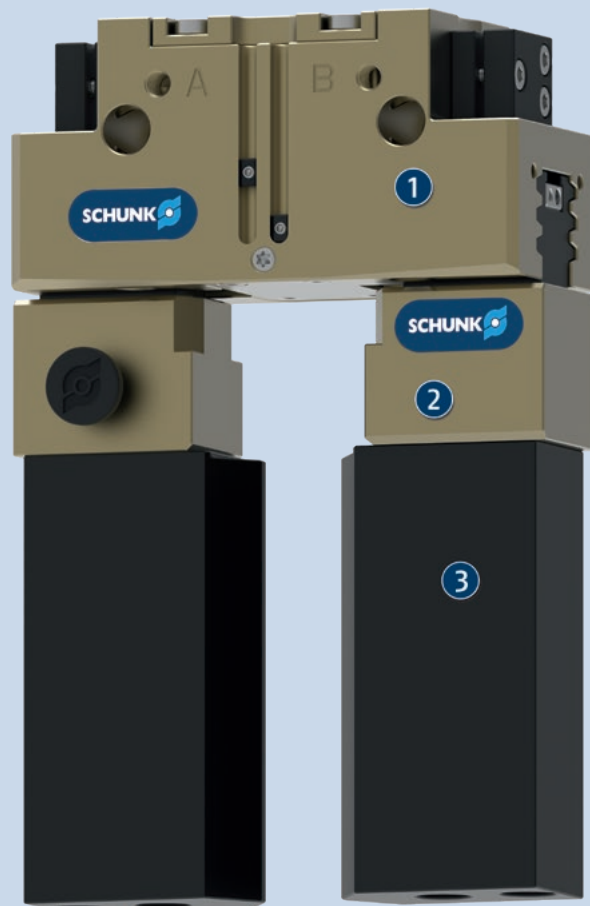
Scope of delivery: Base and adapter available separately in various quantities

Load limits: The max. permissible moment of load resulting from the finger length, the force, as well as the loads occurring from acceleration/torques must not be exceeded. The same applies to the max. permissible force F_x . Independently of this, attention needs to be paid to the max. permissible finger length and the permissible load values for the gripper used.

Application example

Gripping unit with jaw quick-change system for tool-free exchange of the workpiece-specific gripper fingers

- 1 2-finger parallel gripper PGN-plus-P
- 2 Jaw quick-change system BSWS-M
- 3 Finger blanks ABR/SBR



SCHUNK offers more ...

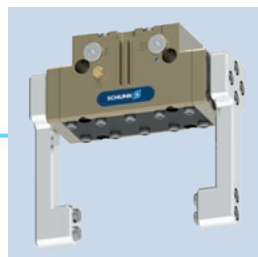
The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



2-finger parallel gripper



3-Finger Centric Gripper



Sealed universal gripper



Finger blank

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

Options and special information

BSWS-BM with adapter pin BSWS-A: System consisting of base and adapter pin.

BSWS-ABRM with adapter pin BSWS-AR: System consisting of top jaw blank with integrated jaw quick-change system and adapter pin. If the additional attachment height of the BSWS system with base should have a negative impact, it is possible to fasten the BSWS adapter pins BSWS-AR in the base jaws of the gripper with screws. Then the changing system is more compact in height. The locking mechanism will be integrated into the top jaw. As an additional effect, there are no more disturbing mounting holes in the finger contours.

BSWS-URM with adapter pin BSWS-AR: System consisting of individual components of the locking mechanism and adapter pin. If the additional installation height provided by the BSWS system with base is unfavorable and the finger contour cannot be produced from the BSWS-ABRM finger blank, it is possible to purchase the BSWS-ABRM locking mechanism separately and to integrate it with the customer's own finger constructions.

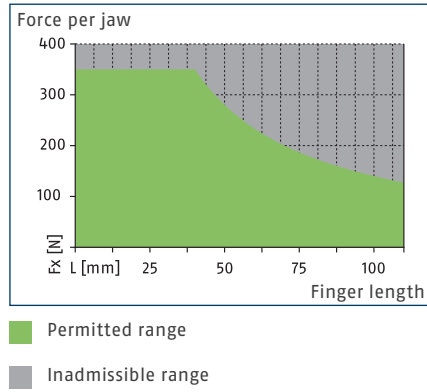
BSWS-AR: For the "SD" (dustproof) gripper variant, the supplied screws are too short. Therefore longer screws must be used. These are not included in the scope of delivery.

BSWS-M-PGZN-plus 50

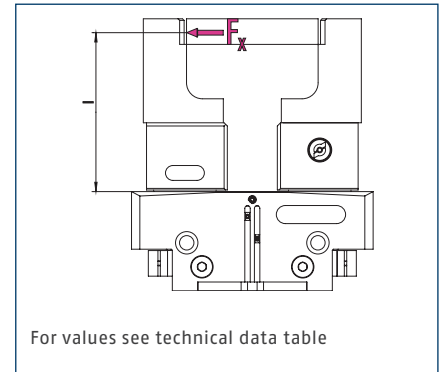
Jaw quick-change system



Load diagram



Max. loads



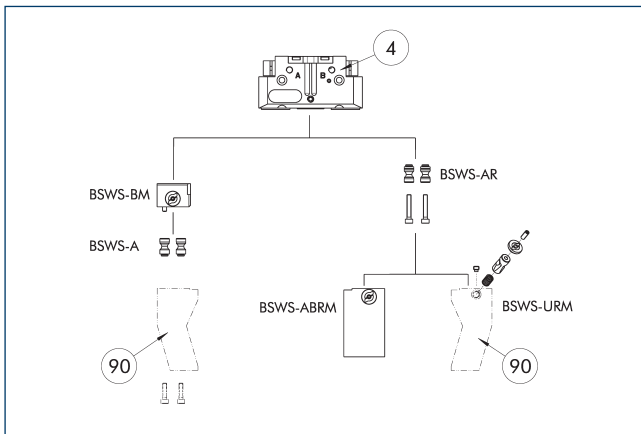
ⓘ The max. permissible moment of load ($M=F_x \cdot l$), resulting from the finger length (l), the force (F_x), and the loads occurring during application resulting from acceleration/torques must not be exceeded. The same applies to the max. permissible force F_x . Independently of this, attention needs to be paid to the max. permissible finger length and the permissible load values for the gripper used.

Technical data

Description		BSWS-BM 50	BSWS-AR 50	BSWS-AR 50
ID		1313899	0300091	0300091
Weight	[kg]	0.02	0.01	0.01
Number per ID		1	2	2
Min./max. ambient temperature	[°C]	5/130	5/130	5/130
Load limits				
Max. permissible loading torque	[Nm]	14	14	14
Max. perm. force F_x	[N]	350	350	350
Jaw quick-change system				
Description		BSWS-A 50	BSWS-URM 50	BSWS-ABRM-PGZN-plus 50
ID		0303020	1380614	1420850
Weight	[kg]	0.002	0.006	0.08
Number per ID		2	1	1
Material BSWS adapter		42CrMo4+QT		
Min./max. ambient temperature	[°C]	5/130	5/130	5/130

ⓘ The BSWS-BM is ± 0.05 mm are of equal height and the replacement accuracy of a top jaw in conjunction with the BSWS-A is ± 0.02 mm.

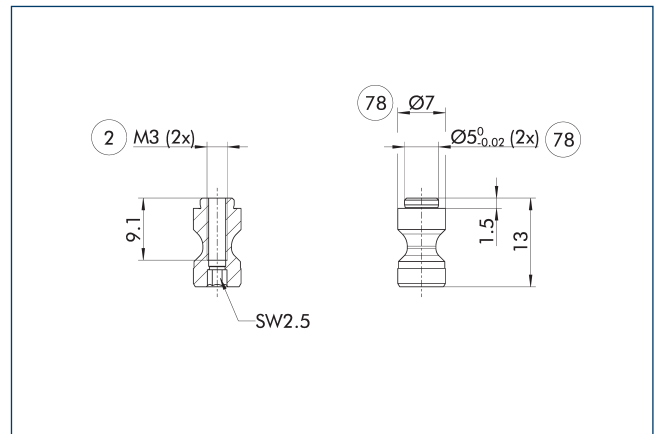
Jaw quick-change system BSWS-M



- ④ Grippers
- ⑨⑩ Customized gripper fingers

The drawing shows an overview of the possibilities of the jaw quick-change system BSWS-M.

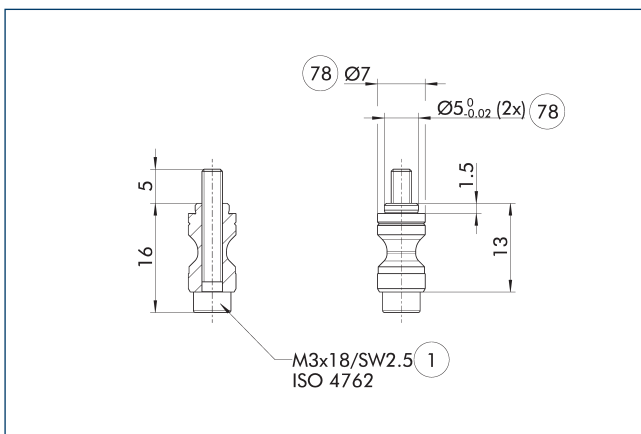
Adapter pin BSWS-A



- ② Finger connection
- ⑦⑧ Fit for centering

① Two adapter pins BSWS-A are included in the scope of delivery.

Adapter pin BSWS-AR 50

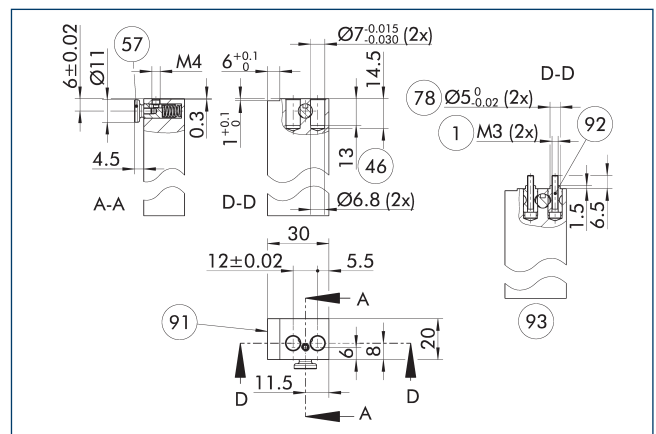


- ① Gripper connection
- ⑦⑧ Fit for centering

BSWS-AR is not compatible with the precision versions 788864 of the grippers, as the connection fits are of different sizes.

① Two adapter pins BSWS-AR, incl. screws, are included in the scope of delivery.

Finger blanks BSWS-ABRM-PGZN-plus 50



- ① Gripper connection
- ⑤⑦ Locking
- ⑦⑧ Fit for centering
- ⑨⑩ Side gripper center
- ⑨② Adapter pins BSWS-AR (to be ordered optionally)
- ⑨③ View with built-in adapter pins (to be ordered optionally)

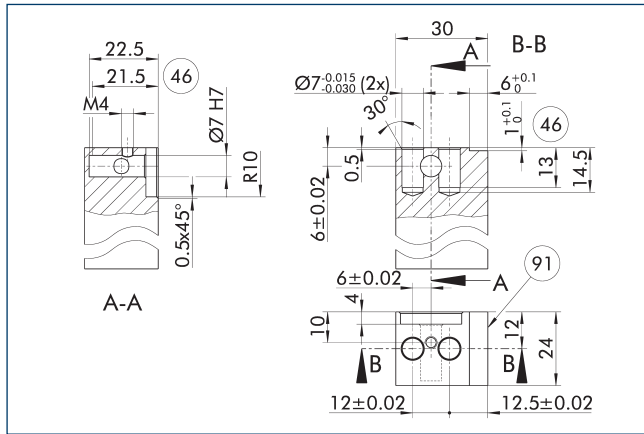
The drawing shows the finger blank with jaw quick-change system which can be reworked by the customer.

① The adapter pins BSWS-AR shown are not included in the scope of delivery for the finger blanks BSWS-ABRM-PGZN-plus and must be ordered separately.

BSWS-M-PGZN-plus 50

Jaw quick-change system

Jaw quick-change system BSWS-URM 50

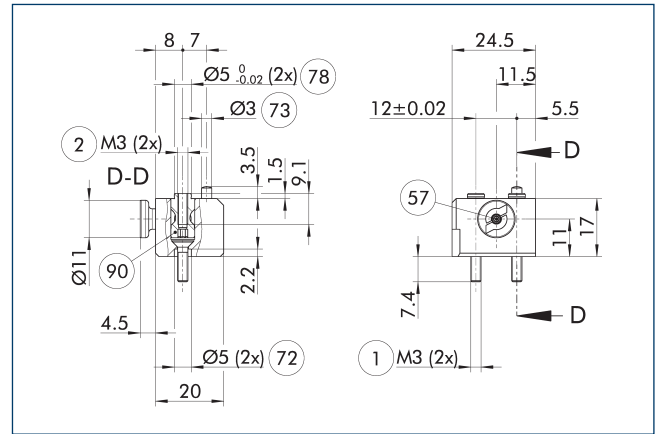


④⑥ Fitting depth ⑨① Side gripper center

The locking mechanism for the BSWS-AR should only be installed as shown in the drawing. A mirror-inverted installation, for example, will not work. A 3D CAD template for the SCHUNK BSWS-UR is available online.

- ① Only the locking mechanism is included in the scope of delivery. The drawing shows the manufacturing dimensions for the customized fingers. The surfaces should be wear-resistant, e.g. hard-anodized aluminum.

Jaw quick-change system BSWS-BM 50



① Gripper connection ⑦③ Fit for centering pins
② Finger connection ⑦⑧ Fit for centering
⑤⑦ Locking ⑨① Adapter pins BSWS-A (to be ordered optionally)
⑦② Fit for centering sleeves

The drawing shows the basic design of the jaw quick-change system.

- ① The adapter pins BSWS-A shown are not included in the scope of delivery for the BSWS-BM and must be ordered separately.



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