

Operating instructions AOCS quick change system

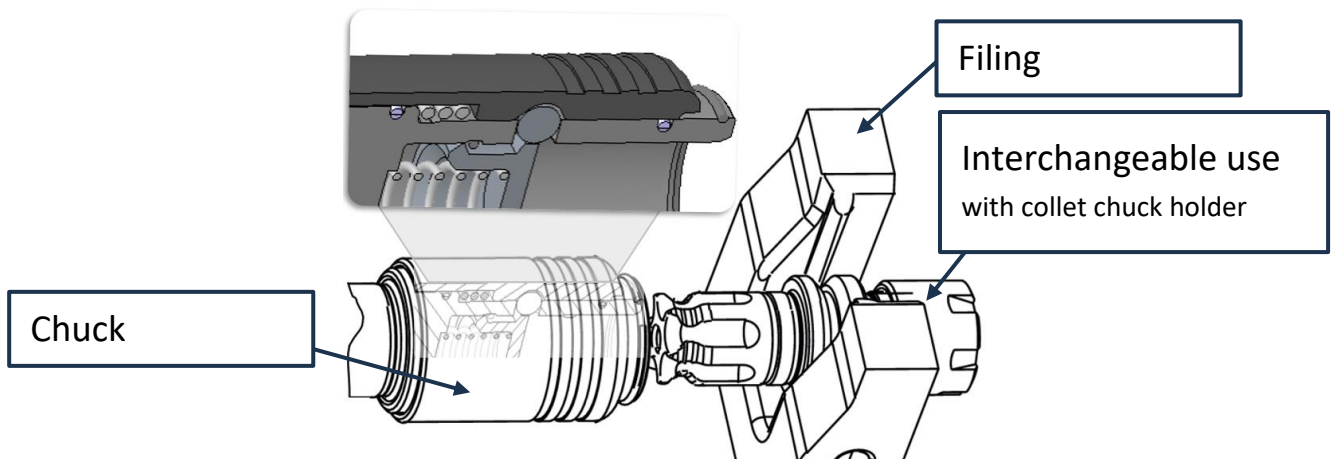
Introduction

The Bilz AOCS quick-change system offers an innovative solution for automated tool changing on industrial robots. It has been specially developed for applications such as polishing, brushing, deburring, grinding, assembly, tapping and trimming of CFRP molded parts. However, it can also be used for manual tool changes on hand-held pneumatic and electric spindles. Thanks to its easy handling and high flexibility, it optimizes production processes and reduces changeover times. These instructions provide you with all the information you need to install, operate and maintain the system.

Main components

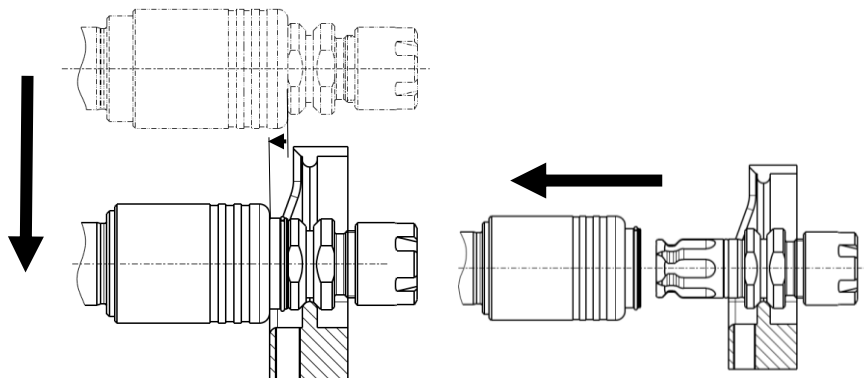
The Bilz AOCS quick-change system consists of three main components: chuck, interchangeable insert and support.

- AOCS quick-change system (Automatic Orientating Clamping System)
- AOC chuck (Automatic Orientating Chuck)
- AOA (Automatic Orientating Adaptor)
- AOSZ shelf (Automatic Orientating System accessories)



Basic functionality

The quick-change system enables tools to be changed quickly and easily. The change insert can be unlocked by pulling back the outer sleeve of the chuck. This is done either automatically by driving onto the support or manually. After disengaging, the sleeve remains in the rear position until a new interchangeable insert is pressed in axially. As soon as the insert reaches the end position, the sleeve snaps back into the locked position.



Safety instructions

- The Bilz AOCs quick-change system may only be used within the defined technical specifications. Use outside of these specifications can lead to malfunctions and an increased risk of accidents.
- Improper use will result in damage; the manufacturer is not liable for any resulting problems.
- Ensure that all parts are correctly assembled before use.
- Regularly check the condition of tools and system components for wear or damage.
- Always wear suitable personal protective equipment (PPE) during operation.
- Disconnect the power supply to manually operated devices such as pneumatic and electric spindles before you start changing them.
- For manually guided spindles and grinders, ensure that the **sleeve is fully engaged in the locking position and that the interchangeable insert is firmly fixed**. Insufficient locking can result in the insert and tool being ejected at high speed, which poses a **considerable risk of injury**.

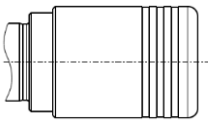
Technical data

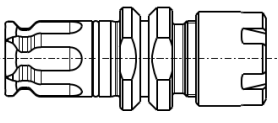
Compatibility: Interchangeable inserts and chucks must be of the same size.

Size 0: AOC0 + AOA0 + AOZS0

Size 1: AOC1 + AOA1 + AOZS1

Size 2: AOC2 + AOA2 + AOZS2

Chuck	max. load* ²	max. speed* ¹	
AOC0-...	10Nm (or M8)	20,000 min ⁻¹	
AOC1-...	30Nm (or M12)	16,000 min ⁻¹	
AOC2-...	90Nm (or M20)	12,000 min ⁻¹	

Interchangeable use	Clamping range for tool shanks [mm]	max. load* ²	Tightening torque of the clamping nut	
AOA0-ER11M-...	∅3...∅6	7...14 Nm (@ ∅3...∅6)	16 Nm	
AOA0-ER16M-...	∅3...∅10	10...25 Nm (@ ∅4...∅10)	24 Nm	
AOA1-ER16M-...				
AOA2-ER25M-...	∅3...∅16	30...60 Nm (@ ∅8...∅16)	32 Nm	

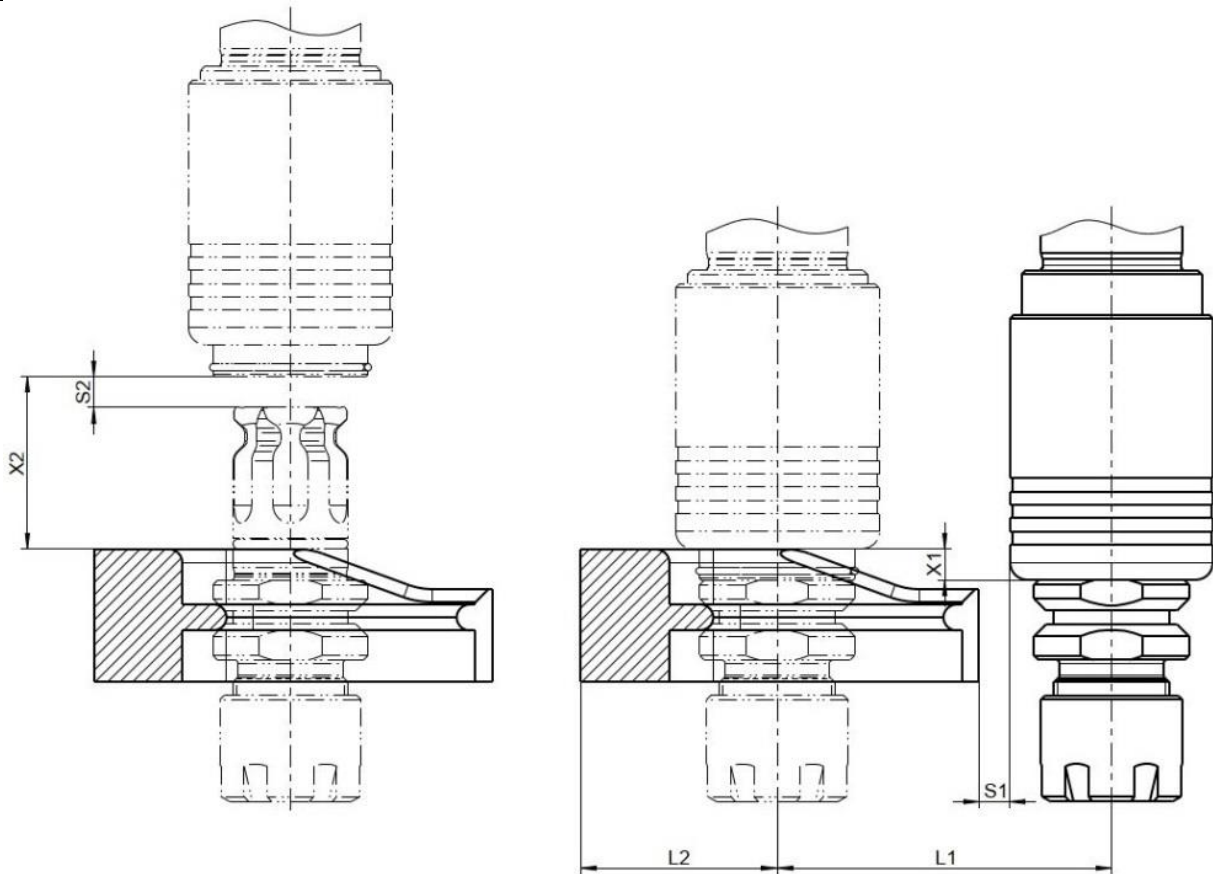
*¹ Taking into account the clamped tool.

*The maximum load or the maximum transmittable torque of the overall system is limited by the component with the lower load capacity - either the chuck or the interchangeable insert. In the case of the interchangeable insert, the maximum load also depends on the shank diameter of the tool. For example, for an insert with ER11M, max. 7 Nm applies for ∅3 mm, but max. 14 Nm for ∅6 mm.

Commissioning

If the quick-change system is used for automatic quick-change, the travel distances can be taken from the following table.

	L1 (with S1= 1) [mm]	L2 [mm]	S1 min. [mm]	S2 min. [mm]	X1 [mm]	X2 (with S2= 1) [mm]
AOC0...	35,2	22,3	1	1	3	17
AOC1...	41	31	1	1	3,5	18
AOC2...	73	38	1	4,5	30,5	



When installing the shelf, make sure that it is aligned exactly at right angles to the spindle axis.

If the interchangeable inserts are exposed to chips or grinding dust in the machining area / robot cell, they must be protected by appropriate measures. We recommend an automatically closing dust-tight protective cover or at least compressed air cleaning of the cylinder surface on all sides before changing into the chuck.

Handling instructions

Mounting the collet chuck

The collet chuck, the clamping nut and the collet chuck mount must be burr-free and clean. Insert the collet chuck into the clamping nut by hooking the groove of the collet chuck onto the eccentric ring of the clamping nut and allowing it to engage. Screw the clamping nut with the collet chuck onto the thread of the collet chuck holder. Tighten the clamping nut with a torque wrench. Use an open-end wrench to hold against the wrench flats of the interchangeable insert.

Tool assembly

The tool must be burr-free and clean. Insert it as deeply as possible into the pre-assembled collet.

Dismantling the collet chuck

Unscrew the clamping nut from the collet chuck. Apply lateral pressure to the rear part of the collet in the direction of the marking on the back of the clamping nut to release the engagement.

Care and maintenance

Clean the system regularly with a lint-free cloth without using aggressive solvents. Remove coolant residues and residues before storage and apply corrosion protection agent. Flash rust can be removed with a polishing agent.

These instructions ensure correct handling and a long service life for the system.