

Swiss Micro Product Range – User Manual

1. Introduction

Swiss Micro offers a comprehensive quick-change tooling system designed for both external and internal machining applications. This system allows operators to replace tool heads rapidly without removing the toolholder from the machine.



The design prioritizes accuracy, rigidity, and ease of use, making it ideal for high-precision turning operations on Swiss-type machines, multi-spindle lathes and other compact machining centers.

This manual provides a concise overview of the product concept, key advantages, and general usage guidelines for the Swiss Micro system. It does not describe individual articles but instead focuses on how the system benefits daily machining operations.

2. System Overview

The Swiss Micro tooling range is built around a modular quick-change interface available for square shank holders, round holders, HSK-A, HSK-E, PSC, and other machine-specific connections.



The system uses a cone/face contact interface between the base holder and the interchangeable head. This ensures extremely accurate positioning, a rigid connection, and excellent repeatability. Tool presetting can be carried out outside the machine, reducing downtime and improving throughput.

Internal coolant supply is standard on all components, supporting reliable chip evacuation and tool life extension. Swiss Micro shanks are offered in the following sizes:

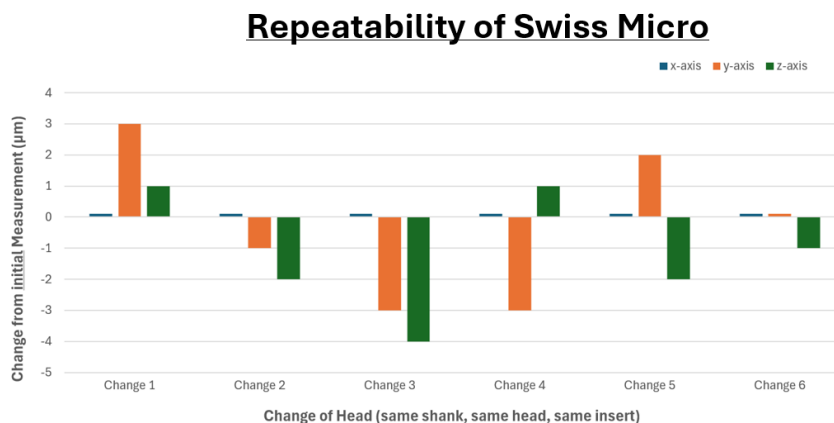
	Size	Interface
Square	10 x 10 mm	LW2
	12 x 12 mm	LW3
	1/2 x 1/2 inch	LW3
	16 x 16 mm	LW4
	5/8 x 5/8 inch	LW4
	20 x 20 mm	LW5

	Size	Interface
Cylindrical	16 mm	LW3
	20 mm	LW4
	3/4 inch	LW5
	22 mm	LW5
	25 mm	LW5
	1 inch	LW5

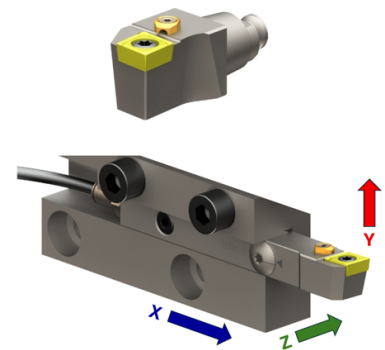
Swiss Micro tooling supports numerous ISO insert geometries, threading tools, grooving systems, and special insert styles. See our Swiss Micro product catalog or contact us for the full range of compatible insert types.

3. Key Advantages

- High repeatability – The cone/face interface ensures the tool returns to the same position after every change.
- Reduced setup time – Tool heads can be measured and adjusted outside of the machine to improve setup efficiency.
- Rigid, precise interface – The optimized contact surface improves machining accuracy and reduces vibration.
- Guaranteed center height – Critical for Swiss-type turning, ensuring consistent cutting performance.
- Internal coolant – Standard on all holders and heads, improving chip control and extending tool life.
- Ease of handling – Only one clamping screw is needed to secure the interchangeable head.
- Compatibility – A wide variety of tool heads and insert systems fit into the same base holder family.



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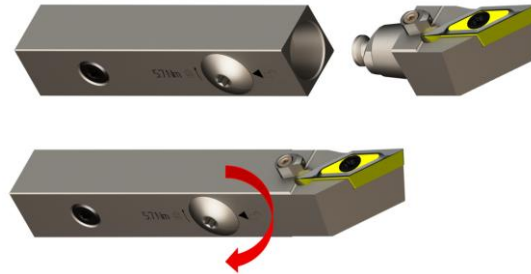


4. General Use Instructions

4.1 Installation of Base Holders

Ensure the mounting surface is clean and free from chips. Insert the head's cone into the holder so it rests flat. Tighten using the recommended torque values shown below. The use of a torque screwdriver is recommended:

Interface	Tightening Torque
LW2	3.0 Nm
LW3	3.8 Nm
LW4	5.7 Nm
LW5	5.7 Nm



4.2 Changing Tool Heads

1. Loosen the clamping screw.
2. Remove the interchangeable head from the base holder.
3. Insert the new head; ensure the cone/face surfaces are clean.
4. Tighten the clamping screw using a torque screwdriver (recommended).

The precision interface automatically positions the tool in the correct axial and radial orientation.

4.3 Coolant Connection

Standard shanks feature a direct internal coolant channel. These are found on the sides and end of the shanks. The standard connection is an M8x1 thread, and the shanks are supplied with coolant sealing screws for when the coolant connection is not in use.

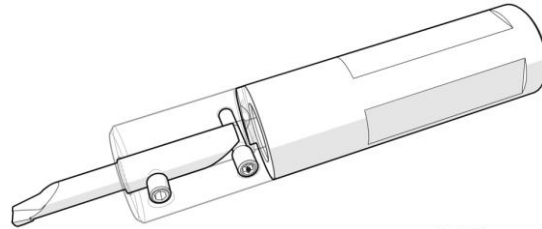
Ensure the machine's coolant supply is properly aligned with the holder's coolant inlet. Proper coolant flow will improve chip evacuation, especially in small-diameter internal machining.



****4.4 Insert Replacement****

Depending on the head type, replace inserts using the manufacturer-specified screw, torque value, and Torx key. Always inspect the insert pocket for chips or wear before installing a new insert.

Boring bar holders – Swiss Tools boring bars feature a 30° chamfer on the back end. This ensures accurate positioning of the cutting edge and is designed to line up with the pin in the Swiss Micro head, as shown below:



****4.5 Presetting****

Preset tool heads externally using a height gauge or tool presetter. This allows operators to prepare multiple heads in advance and swap them with minimal interruption.

****4.6 Threading, Grooving, and Special Applications****

The Swiss Micro range supports threading, grooving, face turning, profiling, and specialized operations through dedicated interchangeable heads. Always refer to insert manufacturer recommendations for cutting data.

5. Maintenance and Care

- Keep all contact surfaces clean (shank, cone/face interface, and insert seats).
- Periodically inspect clamping screws for wear; replace if damaged.
- Maintain proper coolant pressure and filtration.
- Store interchangeable heads in protective holders or racks to prevent damage.
- Use only the recommended torque values for both tool heads and insert screws.

Regular maintenance ensures long-term system accuracy and reliability.

6. Summary

The Swiss Micro quick-change system is designed to maximize productivity, tool life, and machining precision.

By reducing setup time, ensuring consistent repeatability, and providing a wide range of compatible tool heads, the system delivers significant value for high-precision machining environments.

This user manual provides general guidance; always consult machine-specific instructions and insert manufacturer guidelines for optimal performance.