

Technical Details



Hydraulic Milling Expansion Chucks

Assembly and Operating Manual



Mill Toolholding

1 About

This manual provides important technical information to promote the safe and correct usage of the product. All intended personnel must read and understand the safety notes specified in this manual before handling. Actual product appearance may differ.

2 Usage

2.1 Applicable Use

- The product is designed to clamp rotationally symmetric tools in industrial applications.

2.2 Non-Applicable Use

The product is not used as intended if:

- The information in the technical details is not regarded when operating the product.
- The product is not properly maintained after repeated operation.
- The product is used with heat shrinking technology.

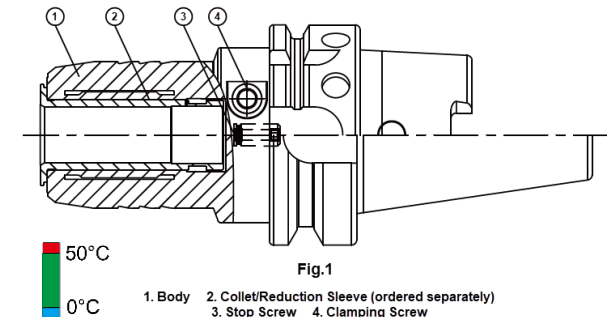
3 Safe Operation and Requirements

3.1 Notes on Safe Operation

- Do not use the product in ambient temperatures beyond 0-50°C.
- The product must not be clamped without a tool above 25°C.
- Only use HaasTooling collets/reduction sleeves that insert to the fixed backstop at the end of the chuck. The use of collets may reduce the total transmittable torque.
- Extended or larger tools may only be clamped if the rotation speed is reduced accordingly.
- To maintain proper product function, the chuck must be unscrewed, clean, and rust-free when not in use.

3.2 Notes on Tool Requirements

- **Clearance:** Before installing, both the tool and the chuck should be cleaned thoroughly, eliminating any presence of rust-preventative grease or dust. Do not excessively soak the product in any organic solvents.
- **Installation:** Insert the cutting tool into the clamping bore as far as the stop screw will allow as shown in **Fig. 1**.



- **Diameter Tolerance:** An h6 tolerance tool shank is required for proper tool clamping. Inadequate clamping forces may result in catastrophic damage to the tool(s) and/or machine.
- **Shape:** Tools must have a perfectly round shank without flats, otherwise the respective collets/reduction sleeves must be used.

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3.3 Other Notes

- Do not dismantle the sealing compound on the product. Doing so may disrupt the hydraulic pressure within the system.
- If the clamping screw is worn or broken, replace with a new screw.
- Haas recommends checking the clamping force via torque wrench frequently. If the torque value is greater than or equal to the data shown in **Fig. 2**, it indicates the chuck is in good working condition.

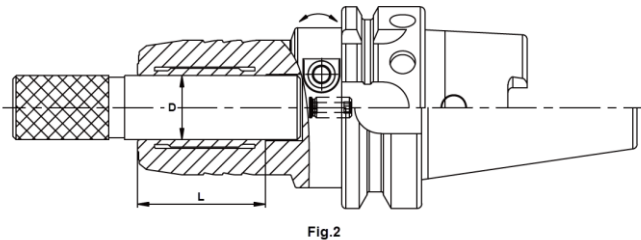


Fig.2

Minimum Torque, Radial Force

[D] Bore Diameter (mm)	6	8	10	12	14	16	18	20	25	32
[L] Tool Clamping Length (mm)	27	27	31	36	36	39	39	41	47	51
Minimum Torque (N-m)	16	23	45	90	110	185	240	330	400	650
Allowable Radial Force (N)	225	370	540	650	900	1410	1580	1860	4400	6500

[D] Bore Diameter (in)	1/4	3/8	1/2	5/8	3/4	1	1-1/4
[L] Tool Clamping Length (in)	1.1	1.2	1.4	1.5	1.6	1.9	2
Minimum Torque (lbf-ft)	12.5	33.2	70.1	136.4	228.6	295	479.4
Allowable Radial Force (lbf)	50.6	121.4	146.1	317	418.1	989.2	1461.3

4 Assembly and Maintenance

4.1 Basic Information

WARNING

Risk of injury due to ejected parts!

The max. rotation speed of the machine must be reduced accordingly when using extended or larger tools.

Risk of injury and material damage due to collet failure!

The collet/reduction sleeve may burst if not used correctly, which can cause harmful metal fragments and fluid to eject at high pressures, resulting in serious injury.

- As mentioned previously, **never** heat the product in heat shrink devices.
- Do not exceed the specified operating temperatures.

4.2 Tool Mounting

1. Unclamp the product by loosening the clamping screw. See **Fig. 1**.
 2. Insert the tool to the minimum clamping depth or stop screw.
 3. Screw the clamping screw by hand until it reaches the stop. See **Fig. 2** for the minimum specified tightening torque.
- Note that too small of a clamping length results to a loss of accuracy and transmittable torque on the product.
 - Ensure the inserted tool is free of burrs, dirt, and debris.

4.3 Tool Assembly

1. Position the tool in the product correctly and tighten. Mount onto the machine interface.
2. Check that the product is in the correct position according to manufacturer specifications and securely clamped in the machine.

4.4 Tool Change

1. Remove the product from the machine.
2. Unclamp the product by loosening the clamping screw. See **Fig. 1**.
3. Insert a new tool to the minimum clamping depth or stop screw.
4. Screw the clamping screw by hand until it reaches the stop. See **Fig. 2** for the minimum specified tightening torque.

4.5 Applicable Shank Types

Use only rotationally symmetric tools with this product. Tool shanks with reliefs (types 2, 3, and 4) can affect the overall balance and concentricity of the toolholding assembly. See **Fig. 3**.

1. Shank type according to DIN 1835-1 form A and DIN 6335 form HA
2. Shank type according to DIN 1835-1 form B and DIN 6335 form HB
3. Shank type according to DIN 1835-1 form B and DIN 6335 form HB
4. Shank type according to DIN 1835-1 form E and DIN 6335 form HE



Fig.3



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4.6 Lubrication

WARNING

Allergic reactions can occur if lubricating grease comes into contact with skin!

Wear protective gloves to lubricate the clamping screw. Lubrication of the clamping screw is necessary, especially in conditions with high clamping frequencies and high operating temperatures.

For optimal lubrication, Haas recommends MOLYKOTE CU-7439 copper paste.

1. Unscrew the clamping screw from the product. **The actuating piston underneath is not secured against falling out and must never be completely removed!**
2. Clean the clamping screw and its respective threads. Check for thread damage, particularly at the flanks. Replace if necessary.
3. Lubricate the clamping screw and the actuating threads with the recommended lubricant.
4. Screw the clamping screw back into the product.
5. Verify that the clamping force applied by the clamping screw is adequate. See **Section 3.3**.

4.7 Storage

- Clean the bore diameter of the product during every tool change with a brush and a solvent cleaning agent.

- When not in use, lightly oil the entire surface of the product in its unclamped state. Cover the product to protect it from external elements and corrosion.
- Protect the product from excessive temperatures.
- Maintain the product on a regular basis.

Before reusing, clean the product, check for damage, functionality, clamping tightness, and concentricity!

WARNING

Danger for operator(s)!

Disregarding the requirements for safety and observation can lead to injury or death.

Risk of injury from tools with sharp edges!

Sharp cutting edges on tools can cause cuts and injury. Wear the correct protective gloves and eyewear when handling the product and/or tool(s).

5 Technical Data

5.1 General Parameters

Item	Category	Scope	Value
1	Material	Handle Material	Alloy Steel
2		Weight	see spec.
3		Tensile Strength	1600-1800 N/mm ²
4		Hardness	HRC 50-55
5	Precision	Radial Runout	4XD < 0.005 mm
6		Repeatable Positioning Accuracy	<0.003 mm
7		Static Stiffness	-
8		Dynamic Stiffness	-
9	Tool Life	Dynamic Balancing Parameters	G2.5 25000 RPM
10		Repeatable Clamping Times	-
11	Standard	Production Standard	ISO
12		Tool Adjustable Travel	10 mm
13	Application Parameters	Cooling Pressure	8 MPa
14		Cooling Method	Internal Cooling (TSC)
15	Temperature	Operating Temperature	0-50°C
16	Workpiece	Shank Tolerance	h6
17		Shape	Full Circle
18	Related Tool	Wrench	TS6

Maximum Allowable Rotation Speed**

[D] Bore Diameter (mm)	6	8	10	12	14	16	18	20	25	32
Maximum Rotation Speed (RPM) for Gage Length < 125mm									50000	25000
≥ 125mm									30000	20000

[D] Bore Diameter (in)	1/4	3/8	1/2	5/8	3/4	1	1-1/4
Maximum Rotation Speed (RPM) for Gage Length < 5in						50000	25000
≥ 5in						30000	20000

**dependent on spindle interface and tool diameter.

