

TENDO HSK-F 63

Hydraulic expansion toolholder
for wood and plastic machining



Superior Clamping and Gripping



1 General

1.1 About this manual

This manual is part of the product and contains important information for safe and correct use. It must be kept accessible at all times. Personnel must have read and understood this manual before starting any work. All safety notes and the associated specifications in particular must be observed and complied with. Illustrations may differ from the actual design.

1.2 Applicable documents

– General terms of business

– Catalog data sheet of the purchased product

The other applicable documents can be downloaded from schunk.com.

1.3 Warranty

The warranty is valid for 24 months from the date of delivery from the production facility if the product is used as intended and in compliance with the prescribed operating data.

Wear parts and parts that come in contact with the tool or machine are not covered by the warranty.

1.4 Illustration of warnings

WARNING

Dangers for persons!

Non-observance can lead to irreversible injury and even death.

CAUTION

Dangers for persons!

Non-observance can cause minor injuries.

NOTICE

Material damage!

Information about avoiding material damage.

1.5 Scope of delivery

- Product
- Assembly and Operating Manual

1.6 Accessories

The following accessories for the product are available separately:

- Test shaft for monitoring the expansion rate
- Allen key for operating the clamping screw
- Hexagon socket wrench for length adjustment
- GZB-S intermediate sleeves for clamping several different shank diameters
- GZB-S sleeve remover for removing intermediate sleeves

2 Basic safety notes

2.1 Appropriate use

- The product is used to clamp rotationally symmetric tools.
- The product is intended for industrial use on wood and plastic processing machines.
- The product is intended for installation in a machine/automated system. The applicable guidelines for the machine/automated system must be observed and complied with.
- The product may only be used and operated within the scope of the technical data and the specifications in this manual, ► Chap. 3.

2.2 Inappropriate use

The product is not being used as intended if:

- The information in the technical data is not observed when using and operating the product ► Chap. 3.
- The maintenance and storage instructions are not observed ► Chap. 5.
- The product is used with heat shrinking technology.

2.3 Ambient conditions and operating conditions

The ambient and operating conditions must correspond or be adapted to the version of the product and the specifications in the technical data.

2.4 Structural changes, spare parts

Structural changes such as modification and reworking, e.g. additional threads, bore holes or attachments, may only be carried out with the written approval of SCHUNK. Only use original spare parts and spares authorized by SCHUNK.

2.5 Notes on safe operation

- The product is designed for an operating/product temperature of +50 to +70°C. This temperature range offers the optimum clamping force.
- The product must not be clamped without a tool above 25°C.
- Never combine multiple product extensions.
- Only use SCHUNK intermediate sleeves and always insert up to the fixed backstop point. The use of intermediate sleeves can reduce the transmittable torque.
- Long, projecting or heavy tools may only be clamped if the speed of rotation is reduced according to the ambient and operating conditions on site. The level of reduction is the responsibility of the operator and must ensure safe operation of the product.
- Maintain and service the product on a regular basis.
- Do not remove the air bleed screw (secured with pin or resin).
- All repair work must be performed by SCHUNK.
- The operational safety and function of the product must not be impaired by external influences.
- Follow the country-specific applicable safety, accident prevention, and environmental protection regulations for the application field of the product.
- Use mechanical screwdrivers only after approval by SCHUNK.

2.6 Personnel qualifications

- All operations may only be carried out by personnel that are qualified and instructed for the respective operation.
- Personnel qualifications must comply with the on-site country-specific requirements and laws.

2.7 Personal protective equipment

- When working on and with the product, follow the respective country-specific legal requirements for occupational health and safety, and wear the necessary personal protective equipment.
- Follow country-specific accident prevention regulations and the general safety notes.

2.8 Transport

To avoid product damage, the transport and handling of the product must be adapted according to the version, weight and packaging of the product. If necessary, use additional aids.

3 Technical data

Operating temperature range [°C]	50 – 70
Max. unclamping temperature [°C]	45
Test temperature for the clamping force control [°C]	20 – 25
Max. coolant pressure [bar]	80
Tool shank tolerance	h6
Max. tightening torque of the clamping screw [Nm]	10 – 12
Adjustment travel of the length adjustment screw [mm]	10

Clamping Ø [mm]	Permissible transmittable torque* [Nm]	Minimum clamping depth [mm]	Permissible radial force F on the product at 50 mm projecting length L1 [N]
10	20	31	540
12	25	36	650
16	60	39	1410
20	130	41	1860
25	170	47	4400

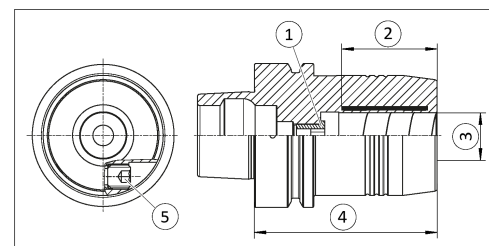
* Tool shank minimum tolerance h6, tool shank oiled. Measured at room temperature, the transmittable torque increases at higher operating temperatures.

The load limits of the spindle holder must be observed.

Max. speed of rotation** for clamping diameter

Clamping Ø [mm]	10	12	16	20	25
Max. speed of rotation [RPM]	50000				25000

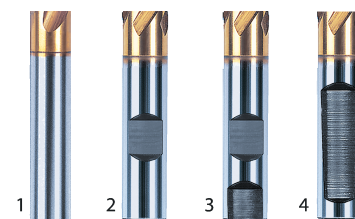
** depending on the interface of the spindle and tool to be clamped.



- ① Length-setting screw***
- ② Minimum clamping depth
- ③ Clamping diameter
- ④ Projecting length L1
- ⑤ Clamping screw

*** if available.

3.1 Permitted shank types



- Shank type according to DIN 1835-1 form A and DIN 6535 form HA
- Shank type according to DIN 1835-1 form B and DIN 6535 form HB (up to Ø 20 mm)
- Shank type according to DIN 1835-1 form B and DIN 6535 form HB (from Ø 25 mm)
- Shank type according to DIN 1835-1 form E and DIN 6535 form HE

Tool shanks with reliefs (forms 2, 3 and 4) can impair the balancing grade and concentricity of the overall system.

4 Operation

4.1 Basic information

WARNING

Risk of injury due to ejected parts!

The max. speed of rotation of the machine/automated system must be reduced when using long, projecting or heavy tools and with extensions.

WARNING

Risk of injury and material damage due to the expansion sleeve bursting!

If not used as intended, the expansion sleeve may burst. This can cause metal shards and oil to be ejected from the product under high pressure, resulting in serious injury.

- **Never heat the product in heat shrink devices; only perform a tool change using the integrated clamping screw.**
- Do not exceed the specified operating temperature.

WARNING

Risk of injury due to hot surfaces!

Touching hot surfaces can cause burns.

- Before carrying out any work on the product, make sure that all surfaces have cooled down to the ambient temperature.
- Wear personal protective equipment, particularly protective gloves.

CAUTION

Risk of injury from tools with sharp edges!

Sharp edges on tools can cause cuts.

- Wear protective gloves when assembling the tool.

NOTICE

Material damage due to burrs and dirt!

- The tool must be free of burrs and dirt at the shank.

NOTICE

Material damage due to incorrect minimum clamping depth!

Too small a clamping depth of the tool leads to a loss of accuracy and torque on the product.

- Observe the minimum clamping depth of the tool.

NOTICE

Potential impairment of the clamping function and damage to the product!

If the product is not used as intended, the clamping function may be impaired or the product may get damaged.

- Only operate the clamping screw by hand.
- Do not exceed the max. unclamping temperature when unclamping the product.

4.2 Mounting tool

1. Ensure that the product temperature does not exceed the max. unclamping temperature ► Chap. 3.
2. Unclamp the product by loosening the clamping screw.
NOTE: The clamping screw is not secured against falling out!
3. If required, the tool length can be adjusted by screwing the integrated length adjustment screw in or out. Observe the adjustment travel of the length adjustment screw ► Chap. 3.
4. Insert the tool to the minimum clamping depth or stop.
5. Screw the clamping screw in by hand until it reaches the stop. Observe the maximum specified tightening torque ► Chap. 3.

4.3 Assembling the product

1. Position the product with tool correctly in the machine interface and tighten. **NOTE:** Observe the machine manufacturer's specifications!
2. Check that the product is in the correct position and securely clamped in the machine.

IMPORTANT! Safe clamping of the product in the machine must be ensured!

4.4 Tool change

1. Ensure that the product temperature does not exceed the max. unclamping temperature ► Chap. 3.
2. Unclamp the product by loosening the clamping screw.
NOTE: The clamping screw is not secured against falling out!
3. Remove tool.
4. If required, the tool length can be adjusted by screwing the integrated length adjustment screw in or out. Observe the adjustment travel of the length adjustment screw ► Chap. 3.
5. Insert a new tool to the minimum clamping depth or stop.
6. Screw the clamping screw in by hand until it reaches the stop. Observe the maximum specified tightening torque ► Chap. 3.

5 Maintenance and storage

If you have any questions regarding maintenance, our technical after-sales service is available during our business hours:

Service telephone: +49-7133-103-2956

service.toolholder@de.schunk.com

All repair work may only be performed by SCHUNK!

5.1 Cleaning the clamping bore

Clean the clamping bore during every tool change with a cleaning agent containing solvents and a cleaning brush.

5.2 Checking the clamping force

Check the clamping force before initial use, after approx. 100 tool changes and at least every 3 months.

1. Unclamp the product by loosening the clamping screw.
NOTE: The clamping screw is not secured against falling out!
2. Insert the test shaft to the minimum clamping depth.
3. Screw the clamping screw in by hand until it reaches the stop. Observe the maximum specified tightening torque ► Chap. 3.
4. The clamping force is no longer sufficient if the test shaft can be pulled out of the product with little effort using two fingers.

In this case, send the product to SCHUNK for inspection.

5.3 Lubricating the clamping screw

CAUTION

Allergic reactions if lubricating grease comes into contact with the skin.

- Wear protective gloves to lubricate the clamping screw.

It is necessary to adapt the cleaning and lubrication of the clamping screw to the ambient conditions. Especially in the case of high clamping frequencies, high operating temperatures, and abrasive dirt or dust. For optimum lubrication of the clamping screw, we recommend copper paste MOLYKOTE CU 7439. (100 g tube, ID 9247204).

1. Unscrew the clamping screw from the product.
IMPORTANT! The actuating piston underneath is not secured against falling out and must not be removed!
2. Clean the clamping screw as well as the actuating thread and check for damage to the thread flanks. Replace if necessary.
3. Lubricate the clamping screw and actuating thread.
4. Screw the clamping screw into the product.
5. Check the clamping force ► Chap. 5.2.

5.4 Storage

- Lightly oil the entire surface of the product.
- Only store the product in an unclamped state and protected against corrosion.
- Store the product in a suitable transport container.
- Protect the product from excessive temperature fluctuations.

NOTE: Before recommissioning, clean the product and check for damage, functionality and tightness!

6 Disposal

- Follow local regulations on dispatching product components for recycling or proper disposal.
- Alternatively, you can return the product to SCHUNK for correct disposal.

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Technical changes:

We reserve the right to make alterations for the purpose of technical improvement.

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