



# Assembly and Operating Manual

## iTENDO<sup>2</sup>

Translation of Original Operating  
Manual

Hand in hand for tomorrow

## Imprint

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### Technical changes:

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

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Dear Customer,

Thank you for trusting our products and our family-owned company, the leading technology supplier of robots and production machines.

Our team is always available to answer any questions on this product and other solutions. Ask us questions and challenge us. We will find a solution!

Best regards,

Your SCHUNK team

Customer Management

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**Please read the operating manual in full and keep it close to the product.**

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# 1 General

## 1.1 About this manual

This manual contains important information for a safe and appropriate use of the product.

This manual is an integral part of the product and must be kept accessible for the personnel at all times.

Before starting work, the personnel must have read and understood this operating manual. Prerequisite for safe working is the observance of all safety instructions in this manual.

In addition to these instructions, the documents listed under ▶ 1.1.3 [ 6 ] are applicable.

**NOTE:** The illustrations in this manual are intended to provide a basic understanding and may deviate from the actual version.

### 1.1.1 Presentation of Warning Labels

To make risks clear, the following signal words and symbols are used for safety notes.



#### **⚠ DANGER**

**Dangers for persons!**

Non-observance will inevitably cause irreversible injury or death.



#### **⚠ WARNING**

**Dangers for persons!**

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



#### **⚠ CAUTION**

**Dangers for persons!**

Non-observance can cause minor injuries.

#### **CAUTION**

**Material damage!**

Information about avoiding material damage.

### 1.1.2 Definition of Terms

The term "product" replaces the product name on the title page in this manual.

### 1.1.3 Applicable documents

- General terms of business \*
- Contractual agreements
- Assembly and Operating Manual iTENDO<sup>2</sup> pad (ID 1494155)
- Assembly and Operating Manual iTENDO<sup>2</sup> easy connect (ID 1539948)
- Assembly and Operating Manual iTENDO<sup>2</sup> easy monitor (ID 1539948)

The documents labeled with an asterisk (\*) can be downloaded from [schunk.com](https://www.schunk.com).

## 1.2 Warranty

If the product is used as intended, the warranty is valid for 12 months from the ex-works delivery date under the following conditions:

- Observe the applicable documents, ▶ [1.1.3 \[6\]](#)
- Observe the ambient conditions and operating conditions, ▶ [2.5 \[9\]](#)
- Observe the specified maintenance instructions, ▶ [7 \[24\]](#)

This does not include special agreements detailed in the warranty and wearing parts. Wearing parts can also become worn through appropriate use before the maximum number of clamping cycles has expired. This includes all areas that come into contact with the tool or the machine (clamping range and machine mount) and sealing elements.

### 1.3 Scope of delivery

The scope of delivery includes

- 1 iTENDO<sup>2</sup>
- 1 Assembly and Operating Manual

### 1.4 Accessories

The following accessories for the product are available separately:

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

## 2 Basic safety notes

### 2.1 Intended use

- The product is used to clamp rotationally symmetric tools.
- The product may only be used and applied within the scope of the information in the technical data, ▶ 3 [13].
- The product is intended for industrial use.
- Appropriate use of the product includes compliance with all instructions in this manual.

### 2.2 Not intended use

The product is not being used as intended if, for example:

- The product is used with heat shrinking technology.
- Workpieces or similar are picked up and clamped.
- The information in the technical data is not observed when using and operating the product ▶ 3 [13].
- The clamping screw is actuated with a mechanical screwdriver.
- The product is used as a lifting tool.
- The minimum clamping depth is not observed.
- The clamping force control is not observed ▶ 7.2.3 [27].
- The product is used in corrosive media.
- The maintenance and storage instructions are not observed ▶ 7 [24].

### 2.3 Constructional changes

#### Implementation of structural changes

By conversions, changes, and reworking, e.g. additional threads, holes, or safety devices can impair the functioning or safety of the product or damage it.

- Structural changes should only be made with the written approval of SCHUNK.

### 2.4 Spare parts

#### Use of unauthorized spare parts

Using unauthorized spare parts can endanger personnel and damage the product or cause it to malfunction.

- Use only original spare parts or spares authorized by SCHUNK.

## 2.5 Environmental and operating conditions

### Required ambient conditions and operating conditions

Incorrect ambient and operating conditions can make the product unsafe, leading to the risk of serious injuries, considerable material damage and/or a significant reduction to the product's life span.

## 2.6 Personnel qualification

### Inadequate qualifications of the personnel

If the personnel working with the product is not sufficiently qualified, the result may be serious injuries and significant property damage.

- All work may only be performed by qualified personnel.
- Before working with the product, the personnel must have read and understood the complete assembly and operating manual.
- Observe the national safety regulations and rules and general safety instructions.

The following personal qualifications are necessary for the various activities related to the product:

#### Qualified personnel

Due to its technical training, knowledge and experience, qualified personnel is able to perform the delegated tasks, recognize and avoid possible dangers and knows the relevant standards and regulations.

#### Instructed person

Instructed persons were instructed by the operator about the delegated tasks and possible dangers due to improper behaviour.

#### Service personnel of the manufacturer

Due to its technical training, knowledge and experience, service personnel of the manufacturer is able to perform the delegated tasks and to recognize and avoid possible dangers.

## 2.7 Personal protective equipment

### Use of personal protective equipment

Personal protective equipment serves to protect staff against danger which may interfere with their health or safety at work.

- When working on and with the product, observe the occupational health and safety regulations and wear the required personal protective equipment.
- Observe the valid safety and accident prevention regulations.
- Wear protective gloves to guard against sharp edges and corners or rough surfaces.
- Wear heat-resistant protective gloves when handling hot surfaces.
- Wear protective gloves and safety goggles when handling hazardous substances.
- Wear close-fitting protective clothing and also wear long hair in a hairnet when dealing with moving components.

## 2.8 Notes on safe operation

- 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.

## 2.9 Transport

### Handling during transport

Incorrect handling during transport may impair the product's safety and cause serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- Secure the product against falling during transportation and handling.
- Stand clear of suspended loads.

## 2.10 Malfunctions

### Behavior in case of malfunctions

- Immediately remove the product from operation and report the malfunction to the responsible departments/persons.
- Order appropriately trained personnel to rectify the malfunction.
- Do not recommission the product until the malfunction has been rectified.
- Test the product after a malfunction to establish whether it still functions properly and no increased risks have arisen.

## 2.11 Disposal

### Handling of disposal

The incorrect handling of disposal may impair the product's safety and cause serious injuries as well as considerable material and environmental harm.

- Follow local regulations on dispatching product components for recycling or proper disposal.



In accordance with the Waste Electrical and Electronic Equipment (WEEE) Directive, the following must be observed during disposal:

- This product may not be disposed of in household waste. It must be taken to a collection point for material recovery and recycling.

## 2.12 Fundamental dangers

### General

- Observe safety distances.
- Never deactivate safety devices.
- Before commissioning the product, take appropriate protective measures to secure the danger zone.
- Disconnect power sources before installation, modification, maintenance, or calibration. Ensure that no residual energy remains in the system.
- If the energy supply is connected, do not move any parts by hand.
- Do not reach into the open mechanism or movement area of the product during operation.

### 2.12.1 Protection during handling and assembly

#### Incorrect handling and assembly

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Have all work carried out by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention rules.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

#### Incorrect lifting of loads

Falling loads may cause serious injuries and even death.

- Stand clear of suspended loads and do not step into their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.

### 2.12.2 Protection during commissioning and operation

#### Falling or violently ejected components

Falling and violently ejected components can cause serious injuries and even death.

- Take appropriate protective measures to secure the danger zone.
- Never step into the danger zone during operation.



### 3 Technical data

#### 3.1 Product data

General technical data	
Maximum permissible tightening torque of the clamping screw	13 Nm
Permissible cooling agents	Compressed air, coolant, oil
Maximum permissible coolant pressure with internal coolant supply	80 bar
Maximum permissible coolant pressure with external coolant supply	20 bar
Radio transmission frequency band (ISM band)	2.4 GHz
Transmission power	< 6 dB
Acceleration range of measurement	±100 g
Maximum permissible acceleration	10,000 g
Maximum operating time (battery life) with active radio transmission	8 h
Maximum operating time (battery life) in standby mode	240 h (10 days)
Tolerance tool shank	h6

#### Variant-specific technical data

Material number	1484050	1495389	1495390
Clamping diameter D1	20 mm	20 mm	3/4"
Base body diameter D2	42 mm	42.05 mm	44.5 mm
Machine mounting	HSK-A 63	BT30	CAT40
Maximum permissible speed of rotation	30 000 rpm	30 000 rpm	30 000 rpm
Maximum transmittable torque*	330* Nm	330* Nm	310* Nm
Minimum clamping depth	41 mm	41 mm	41 mm
Maximum permissible radial force F on the product at 50 mm projecting length of the tool	1 860 N	1 860 N	1 860 N
Projecting length L1	90 mm	90 mm	101.6 mm
TENDO Platinum with comparable outside contour	204056	205636	1447901

Material number	1484710	1509955	1509960
Clamping diameter D1	20 mm	32 mm	32 mm
Base body diameter D2	42 mm	62.5 mm	62.5 mm
Machine mounting	SK40	HSK-A 100	SK50
Maximum permissible speed of rotation	30 000 rpm	25 000 rpm	25 000 rpm

Material number	1484710	1509955	1509960
Maximum transmittable torque*	330* Nm	650* Nm	650* Nm
Minimum clamping depth	41 mm	51 mm	51 mm
Maximum permissible radial force F on the product at 50 mm projecting length of the tool	1 860 N	6 500 N	6 500 N
Projecting length L1	110 mm	115 mm	103 mm
TENDO Platinum with comparable outside contour	204276	-	204247

Material number	1509962	1509899	1519203
Clamping diameter D1	32 mm	20 mm	32 mm
Base body diameter D2	62.5 mm	42 mm	62 mm
Machine mounting	Capto C6	BT40	HSK-A 63
Maximum permissible speed of rotation	25 000 rpm	30 000 rpm	30 000 rpm
Maximum transmittable torque*	650* Nm	330* Nm	650* Nm
Minimum clamping depth	51 mm	41 mm	51 mm
Maximum permissible radial force F on the product at 50 mm projecting length of the tool	6 500 N	1 860 N	6 500 N
Projecting length L1	110 mm	110 mm	125 mm
TENDO Platinum with comparable outside contour	201858	-	204058

Material number	1484703
Clamping diameter D1	20 mm
Base body diameter D2	42 mm
Machine mounting	Ø32 mm
Maximum permissible speed of rotation	30 000 rpm
Maximum transmittable torque*	330* Nm
Minimum clamping depth	41 mm
Maximum permissible radial force F on the product at 50 mm projecting length of the tool	1 860 N
Projecting length L1	69 mm
TENDO Platinum with comparable outside contour	-

\* Tool shank minimum tolerance h6, tool shank oiled. **NOTE:** The use of intermediate sleeves can reduce the transmittable torque. **The load limits of the spindle holder must be observed.**

### 3.2 Ambient conditions and operating conditions

Operating temperature range	+20°C to +50°C
Transport temperature range	-10°C to +50°C
Storage temperature range	+10°C to +30°C
Cleaning temperature range	0°C to +60°C
Clamping force check temperature range	+20°C to +25°C
Maximum temperature, clamping without tool	+25°C

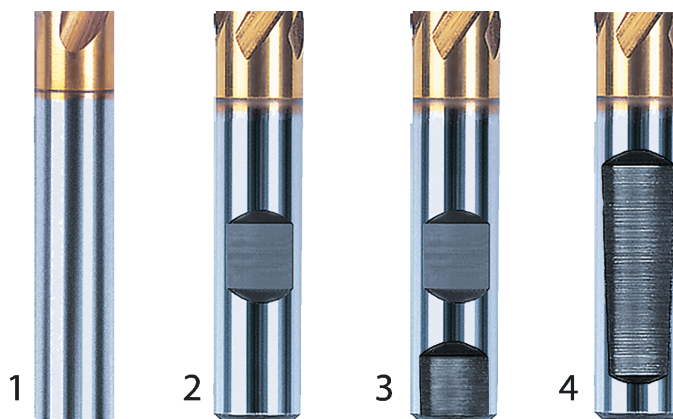
**NOTE:** The temperatures refer to the product.

### 3.3 Information on using the length adjustment screw

Maximum length adjustment dimension "X"	10 mm
---	-------

**NOTE:** The length-setting screw is not available in all variants of the product.

### 3.4 Usable tool shank types

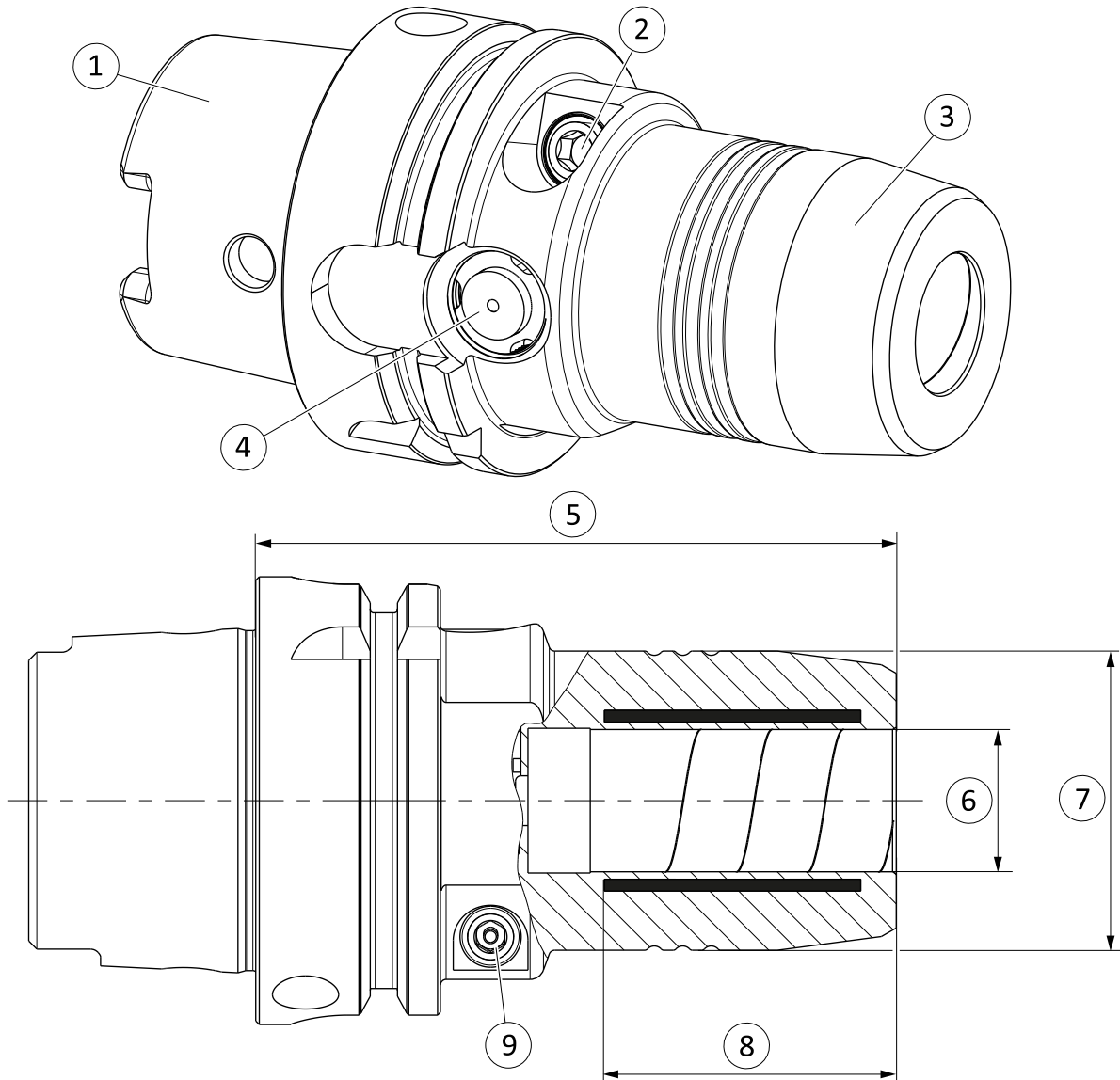


1. Shank type according to DIN 1835-1 form A and DIN 6535 form HA
2. Shank type according to DIN 1835-1 form B and DIN 6535 form HB (up to  $\varnothing$  20 mm)
3. Shank type according to DIN 1835-1 form B and DIN 6535 form HB (from  $\varnothing$  25 mm)
4. Shank type according to DIN 1835-1 form E and DIN 6535 form HE

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

## 4 Design and description

### 4.1 Design



**NOTE:** Illustration may differ from the actual design.

Position	Description
1	Machine mounting
2	Clamping screw
3	iTENDO <sup>2</sup> toolholder
4	Charging contact
5	Projecting length L1
6	Clamping diameter D1
7	Base body diameter D2
8	Minimum clamping depth
9	Air bleed screw

## 4.2 Functional description

This product clamps hydraulically by means of manual actuation. The piston with stroke limitation is actuated via a clamping screw. To achieve the full clamping force, the clamping screw must be screwed in until it reaches the stop. The stroke limitation protects the product against over-expansion.

The volume of oil that is squeezed out of the piston chamber is pressed in measured amounts against the thin-walled expansion sleeve. The resulting internal pressure presses radially against the thin-walled expansion sleeve, causing the clamping range to expand evenly along the entire active clamping length, uniformly central to the middle axis. The tool is clamped.

Screwing back the clamping screw causes a reduction of the pressure in the piston chamber and the expansion chamber. The thin-walled expansion sleeve then returns radially to its exact home position. The tool can be removed.

The iTENDO<sup>2</sup> sensor built into the product makes it possible to detect vibrations during machining.

Using a compatible tablet and the iTENDO<sup>2</sup> app, the detected vibrations can be displayed and recorded. The data is transmitted via a wireless connection between the product and the tablet.

## 5 Assembly

### 5.1 Basic information



#### **⚠ WARNING**

##### **Risk of injury due to incorrect assembly.**

If assembled incorrectly, the product may be thrown out during rotation, causing severe injuries.

- Regularly check the fastening of the product.
- Take appropriate protective measures to secure the danger zone.
- Wear suitable protective equipment.



#### **⚠ WARNING**

##### **Risk of injury if the product falls during transport, assembly or disassembly.**

Due to the oily surface required to preserve it, the product can slip through your hands, resulting in injury.

- Take appropriate safety measures to prevent the product from falling.
- Only install the product on machines with the appropriate connection dimensions.
- Wear suitable protective equipment, especially safety gloves.



#### **⚠ WARNING**

##### **Risk of injury due to sharp edges and rough or slippery surfaces.**

- Wear suitable protective equipment, especially protective gloves.



#### **⚠ CAUTION**

##### **Risk of crushing, impact and cutting when assembling and disassembling the product.**

- Do not reach between the product and machine.
- Wear suitable protective equipment, especially safety boots and protective gloves.

**CAUTION****Risk of damage to the product.**

- When transporting and handling the product, ensure that it is not damaged by knocks, impacts, etc.

## 5.2 Assembly of the product

To ensure optimum machining results, the product must be positioned and secured precisely on the machine interface.

**NOTE:** Only install the product on machines with the appropriate connection dimensions. Observe the mounting instructions from the manufacturer of the machine interface.

**IMPORTANT! Before the product is assembled, the tool must be fitted and clamped!**

1. Charge the battery of the iTENDO<sup>2</sup>. **NOTE:** Please refer to the chapters "iTENDO<sup>2</sup> Power Plug" and "iTENDO<sup>2</sup> Charger" in the operating manual of the iTENDO<sup>2</sup> complete system (1494155).
2. Ensure that the tool is clamped ▶ 6.2 [ 22].
3. Clean all interfaces on the product and machine.
4. Place the product on the machine interface in the correct position and fit it as far as the stop.
5. Clamp the product according to the specifications of the manufacturer of the machine interface.

## 6 Operation

### 6.1 Basic information



#### **⚠ WARNING**

**Risk of injury from clothing or hair being pulled into the machine if caught on the product.**

Loose clothing or long hair can get caught on the product and drawn into the machine, resulting in serious injuries or even death!

- Only wear tight-fitting clothing and a hairnet when working on the machine and the product.
- Observe the applicable accident prevention regulations.
- Wear suitable protective equipment.
- Take suitable protective measures to secure the danger zone.



#### **⚠ WARNING**

**Risk of injury and property damage due to the expansion sleeve cracking.**

If the expansion sleeve cracks, oil may be emitted at high pressure and chips or broken pieces may be ejected, causing severe injuries.

- **Never heat the product in heat shrink devices; only perform a tool change using the integrated clamping screw.**
- Avoid knocking or banging the expansion sleeve.
- When the product is tensioned, do not exceed the maximum permissible operating temperature.
- Only operate the product within the optimum operating temperature range.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment.



#### **⚠ WARNING**

**Risk of injury due to leakage of highly pressurized oil.**

If the air bleed screw is unscrewed when the product is clamped, highly pressurized oil can escape, causing serious injury.

- Never unscrew the air bleed screw.
- Do not remove the air bleed screw locking device (pin or resin).





### ⚠ WARNING

**Risk of injury when the product is rotating, due to the possibility of parts flying off.**

- Comply with technical data.
- Ensure correct installation and seating of existing add-on and functional components.
- Check clamping force regularly.
- Take appropriate protective measures to secure danger zones.
- Wear suitable protective equipment.



### ⚠ WARNING

**Risk of injury due to the tool being flung out if the RPM is too high or not suitable.**

- Observe the technical data.
- Do not exceed the maximum RPM.
- Reduce the speed of rotation appropriately for strongly protruding or balance-asymmetrical tools.
- Take suitable protective measures to secure the danger zones.
- Wear suitable protective equipment.



### ⚠ CAUTION

**Risk of crushing, impact, and cutting when changing tools.**

- Do not reach between the product and the tool when changing tools.
- Wear suitable protective equipment, especially protective gloves.

### CAUTION

**Risk of damage to the product.**

If the product is not used as intended, the product may get damaged.

- Only operate the clamping screw by hand.
- Observe the minimum clamping depth of the tool.
- The tool must be free of burrs and dirt on the shank.
- Do not adjust the tool length when the tool is clamped.

## 6.2 Clamping the tool

The product must be unclamped when loading the tool. Initial tension inhibits loading and can damage the expansion sleeve.

**IMPORTANT! The tools to be clamped must be deburred at the surfaces that come into contact with the product, may not have sharp contours and must be free of oil, grease and dirt.**

When clamping the tool, observe the following points:

- The clamping screw may only be actuated by hand.
- Do not combine multiple extensions (e.g. TENDO SVL).
- The product may not be clamped without a tool above 25°C.
- Only clamp approved tool shank types ▶ 3.4 [15].

For clamping, proceed as follows:

1. Observe the technical data ▶ 3 [13] and the marking on the product.
2. Make sure that the product is in an unclamped state.
3. Clean clamping surfaces.
4. The tool length can be adjusted by screwing the length-setting screw in or out. Observe the adjustment travel of the length-setting screw ▶ 3.3 [15]. **NOTE:**The length-setting screw is not available in all variants of the product.
5. Insert the tool into the product in the correct position without exerting too much force. **CAUTION! The minimum clamping depth ▶ 3 [13] must not be undershot!**
6. Screw the clamping screw in by hand until it reaches the stop. Observe the maximum specified tightening torque ▶ 3 [13].
7. Check that the tool is firmly in place.
8. Mount the product ▶ 5 [18].

**IMPORTANT! Safe clamping of the tool is only achieved when the clamping screw is screwed in until it reaches the stop!**

## 6.3 Unclamping the tool

### CAUTION

#### Damage to the product when using a punch!

The iTENDO<sup>2</sup> sensor protrudes through the center into the product! Attempting to remove a fixed tool by applying pressure from behind will damage the iTENDO<sup>2</sup> sensor.

- Do not insert any objects into the product through the machine mount.
- Do not remove stuck tools with a punch.

- 
1. Disassemble the product ▶ 9 [📄 30].
  2. Unscrew the clamping screw far enough to allow the tool to be easily removed.**NOTE:** The clamping screw is not secured against falling out.
  3. Remove tool.

**IMPORTANT! The air bleed screw secured with a pin must not be unscrewed!**

## 7 Maintenance

### 7.1 Basic information



#### **⚠ WARNING**

**Risk of injury and property damage due to the expansion sleeve cracking.**

If the expansion sleeve cracks, oil may be emitted at high pressure and chips or broken pieces may be ejected, causing severe injuries.

- Avoid knocking or banging the expansion sleeve.
- Observe the test temperature specified in the technical data to check the clamping force.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment.



#### **⚠ WARNING**

**Risk of injury and material damage due to the expansion sleeve bursting at high product temperatures.**

If the product is operated at too high temperatures without a tool, the expansion sleeve may burst. As a result, hot oil may be emitted at high pressure and chips or broken pieces may be ejected, causing severe injuries and burns.

- Do not exceed the maximum temperature specified in the technical data when clamping without a tool.
- Take suitable protective measures to secure the danger zone.
- Wear suitable protective equipment, especially heat-resistant gloves.



#### **⚠ WARNING**

**Risk of injury due to sharp edges and rough or slippery surfaces.**

- Wear suitable protective equipment, especially protective gloves.



### ⚠ CAUTION

#### Injury of the eyes by dirt particles

When cleaning with compressed air, the eyes may be injured by flying dirt particles.

- Wear suitable protective equipment, particularly protective goggles.

For trouble-free, long-lasting use, clean, maintain and check the functionality of the product regularly.

#### Repair work may only be carried out by SCHUNK!

If you have any questions regarding maintenance and servicing, our technical

customer service is available during our business hours:

**Service telephone: +49-7133-103-2956**

**service.toolholder@de.schunk.com**

## 7.2 Intervals and tasks

Operation	Interval period
Cleaning the clamping surface	after every clamping procedure
Cleaning the product	daily
Checking the clamping force	every 3 months or after 100 clamping operations
Checking and lubricating the clamping screw	as required

The specified maintenance intervals are based on practical experience gathered by SCHUNK and are recommended. Depending on the ambient and operating conditions, as well as the clamping frequency of the product, the maintenance intervals must be adapted and noted accordingly. For maintenance intervals with two or more specifications, the valid specification is the one that applies first.

**CAUTION: For maintenance, either disassemble the product ▶ 9 [ 30] or switch off the power supply to the machine and ensure that there is no residual energy in the system.**

### 7.2.1 Cleaning the clamping surface

1. Disassemble the product ▶ 9 [ 30].
2. Remove tool ▶ 6.3 [ 23].
3. Make sure that the product is in an unclamped state.
4. Clean the clamping bore and groove with a cleaning agent containing solvents.
5. Wipe the surfaces dry with a clean cloth.

### 7.2.2 Cleaning the product

1. Disassemble the product ▶ 9 [ 30].
2. Remove tool ▶ 6.3 [ 23].
3. Make sure that the product is in an unclamped state.
4. Clean the entire product with compressed air.
5. Carefully remove any stubborn dirt with a suitable tool.
6. Wipe all surfaces dry with a clean cloth.
7. Check the product for deformation, damage or wear, in particular the surfaces that come in contact with the tool.
8. Lightly oil the entire surface of the product.
9. Wipe the charging contact dry with a clean cloth and, if necessary, clean it with a cleaning agent containing alcohol (e.g., ethanol).

**NOTE:** Damage or wear can compromise the functioning of the product. If non-replaceable parts of the product are worn or damaged, return the product to SCHUNK for inspection.

### 7.2.3 Checking the clamping force

To check the clamping force, a corresponding test shaft ▶ 1.4 [ 7] is required.

**IMPORTANT! Observe the specified temperature range for the clamping force check!**

1. Disassemble the product ▶ 9 [ 30].
2. Remove tool ▶ 6.3 [ 23].
3. Make sure that the product is in an unclamped state.
4. Insert the corresponding test shaft to the minimum clamping depth.
5. Screw the clamping screw in by hand until it reaches the stop. Observe the maximum specified tightening torque ▶ 3 [ 13].
6. 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.**

## 7.2.4 Checking and lubricating the clamping screw



### ⚠ CAUTION

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

- Wear protective gloves.

In order to prevent wear to the clamping screw, we recommend that it be lubricated using a method suited to the ambient conditions and the conditions of use. This is especially relevant in case of:

- high clamping frequency
- high operating temperature
- Intensive cleaning

For optimum clamping screw lubrication, we recommend copper paste type MOLYKOTE CU 7439 (100 g tube, ID 9247204).

1. Disassemble the product ▶ 9 [ 30].
2. Remove tool ▶ 6.3 [ 23].
3. Unscrew the clamping screw from the product.  
**IMPORTANT! The actuating piston underneath is not secured against falling out and must not be removed!**
4. Clean the clamping screw and actuating thread and check for damage to the thread flanks. Replace if necessary.
5. Lubricate the clamping screw and actuating thread.
6. Screw the clamping screw into the product.
7. Check the clamping force ▶ 7.2.3 [ 27].



## 8 Troubleshooting

Malfunction / Error	Possible cause	Solution(s)
Tool is not clamped	Clamping screw is not screwed in as far as the stop	Screw the clamping screw in until it reaches the stop
	Wear on the clamping diameter	Send the product to SCHUNK for inspection
	Oil loss on the product	Send the product to SCHUNK for inspection
	Clamping piston was removed during lubrication of the clamping screw	Insert clamping piston into product
Product not transmitting a signal	Battery is flat	Charge battery
Workpiece cannot be joined Workpiece cannot be removed	Product is not completely unclamped	Unclamping the product ▶ 6.3 [📄 23]
Insufficient run-out accuracy	Product is not correctly positioned on the machine interface	Clean the contact surfaces of the product and machine

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

**Service telephone: +49-7133-103-2956**  
**service.toolholder@de.schunk.com**

## 9 Disassembly

### 9.1 Basic information



#### **⚠ WARNING**

**Risk of injury if the product falls during transport, assembly or disassembly.**

Due to the oily surface required to preserve it, the product can slip through your hands, resulting in injury.

- Take appropriate safety measures to prevent the product from falling.
- Only install the product on machines with the appropriate connection dimensions.
- Wear suitable protective equipment, especially safety gloves.



#### **⚠ WARNING**

**Risk of injury due to sharp edges and rough or slippery surfaces.**

- Wear suitable protective equipment, especially protective gloves.



#### **⚠ CAUTION**

**Risk of crushing, impact and cutting when assembling and disassembling the product.**

- Do not reach between the product and machine.
- Wear suitable protective equipment, especially safety boots and protective gloves.

#### **CAUTION**

**Risk of damage to the product.**

- When transporting and handling the product, ensure that it is not damaged by knocks, impacts, etc.

## 9.2 Disassembly of the product

1. Secure the product against falling.
2. Loosen the connection to the machine interface.  
Observe the specifications of the machine manufacturer.
3. Remove the product.
4. If necessary, remove tool ▶ 6.3 [📄 23].

**NOTE:** To avoid damage, only place the product on a clean and soft surface.

## 10 Storage

When storing the product for a longer period of time, observe the following points:

- Ensure that the product is in an unclamped state.
- Clean the product and lubricate it lightly.
- Only store the product in dry rooms.
- Protect the product from major temperature fluctuations.
- Completely charge the battery regularly every year.
- Comply with the storage temperature specified in the technical data.
- Store the product in a suitable transport container.

## 11 Disposal



- This product may not be disposed of in household waste. It must be taken to a collection point for material recovery and recycling.
- Follow local regulations on dispatching product components for recycling or proper disposal.

Alternatively, you can return the product to SCHUNK for correct disposal.

## 12 EU Declaration of Conformity

according to the European Directive 2014/53/EU, Annex VI.

Manufacturer/  
Distributor SCHUNK SE & Co. KG  
Toolholding and workholding | Gripping Technology | Automation  
technology  
Bahnhofstr. 106 – 134  
D-74348 Lauffen/Neckar

We hereby declare that on the date of the declaration, the product described below complied with all basic safety and health regulations found in Directive 2014/53/EU of the European Parliament and of the Council on machinery. The declaration shall be rendered invalid if modifications are made to the product.

Product designation - iTENDO<sup>2</sup> pad - 1484493  
ID: iTENDO<sup>2</sup> HSK-A63 Ø20 x 90 - 1484050  
iTENDO<sup>2</sup> HSK-A63 Ø32x125 - 1519203  
iTENDO<sup>2</sup> HSK-A100 Ø32x115 -1509955  
iTENDO<sup>2</sup> SK40 Ø20x110 - 1484710  
iTENDO<sup>2</sup> SK50 Ø32x103 - 1509960  
iTENDO<sup>2</sup> CAT40 Ø3/4"x101.6 - 1495390  
iTENDO<sup>2</sup> BT30 Ø20x90 - 1495389  
iTENDO<sup>2</sup> BT40 Ø20x110 - 1509899  
iTENDO<sup>2</sup> Capto C6 Ø32x110 - 1509962

Harmonized standards and technical specifications applied:

EN 61000-6-2:2019	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments
EN 61000-6-4:2018	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments
EN 301 489-1 V2.2.3 2019-11	Electromagnetic compatibility (EMC) – Standard for radio equipment and services – Part 1: Common technical requirements – Harmonized standard for electromagnetic compatibility
EN 300 328 V2.2.2 2019-07	Wideband Transmission Systems – Data transmission equipment operating in the 2.4 GHz band – Harmonized standard on the use of the radio spectrum

**Additionally, the product is declared to conform with the following standards and EU directives:**

DIN EN ISO 12100	Safety of the machines
2014/30/EU	EMC Directive
2014/53/EU	Radio Equipment Directive

2011/65/EU                      RoHS Directive

Person authorized to compile the technical documentation:  
Moritz Wiedmann, address: refer to manufacturer's address

Signed for and on behalf of: SCHUNK GmbH & Co. KG

*Signature: see original declaration*

Lauffen/Neckar, February 2020

p.p. Moritz Wiedmann; Head of Development  
Clamping Technology

*Signature: see original declaration*

p.p. Jörn Rastetter; Head of Functional Safety; Safety  
Assurance Manager (SAM)



**SCHUNK SE & Co. KG**  
Toolholding and workholding | Gripping Technology |  
Automation technology

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