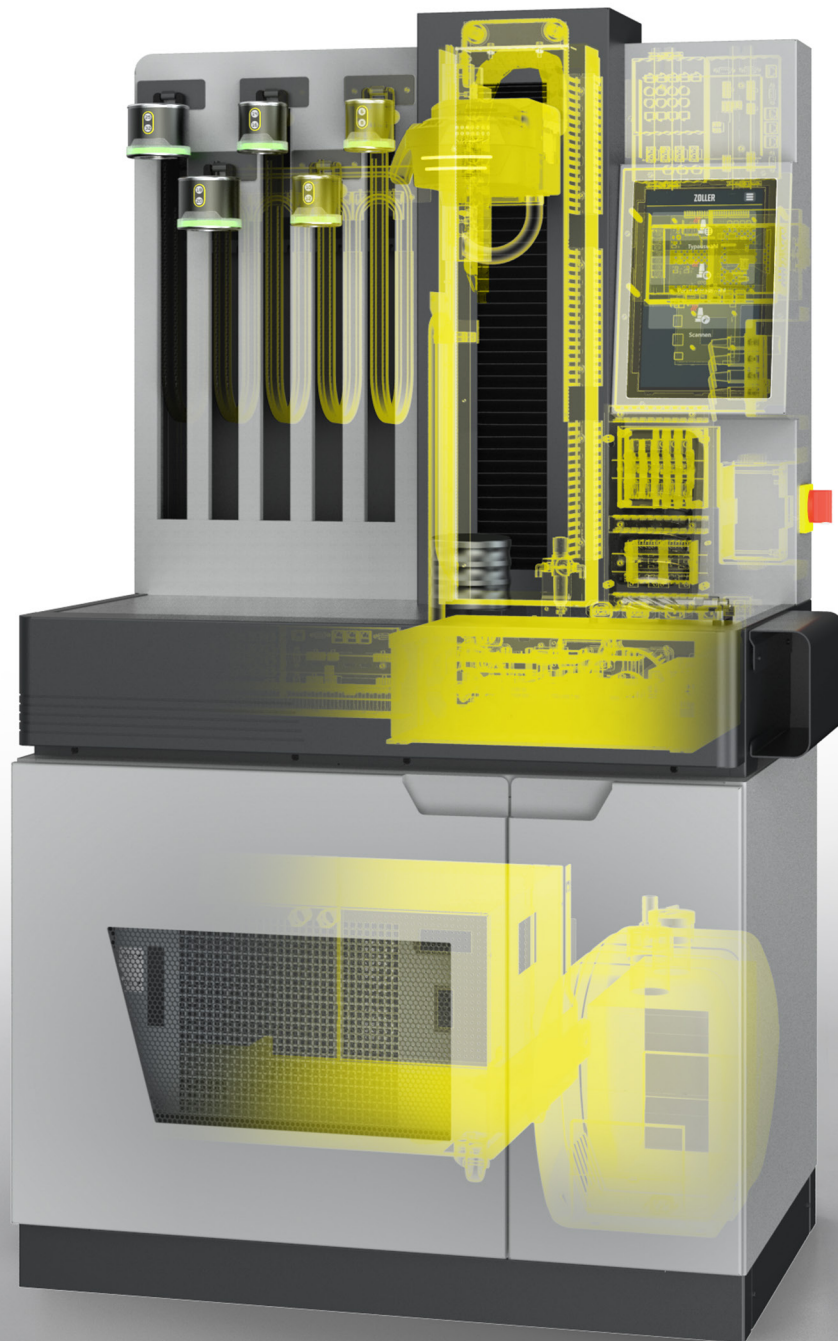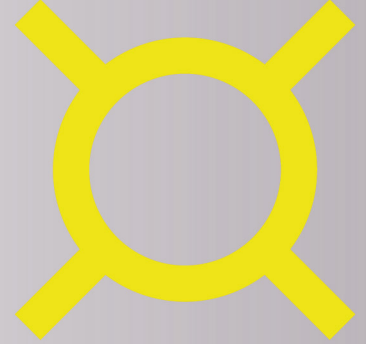# Technical Description
heat-shrinking machine

»powerShrink«

»powerShrink« / »pilot«

Note:

All images are non-binding example illustrations and may show options, accessories and equipment, which differ from the actual product configuration.

Reproduction or dissemination of content to third parties, in particular to competitor companies, is not permitted without the express consent of the author and manufacturer.

Equipment, options/default are stated in your quote or order confirmation.

Table of Contents

»powerShrink«

heat-shrinking machine

The ZOLLER »powerShrink« heat-shrinking machine can be used to clamp and unclamp cutting tools with D 3 mm to D 32 mm[1]. The inductive heat-shrinking system of the ZOLLER »powerShrink« heats the chuck using two separate coil windings, which are controllable in parallel to one another. The cooling bells are available in a suspended manual and a mechanically guided version. A 12.5" TFT color monitor with touch operation[2] and the ZOLLER »pilot« software is integrated into the housing.

The shrink-clamping machine is available in the following versions:

- »powerShrink 400« as workbench version

- »powerShrink 400« with table[3]

- »powerShrink 600« with table

[1]Optional up to D 50 mm

[2]The »powerShrink 400« is also available with a membrane keypad
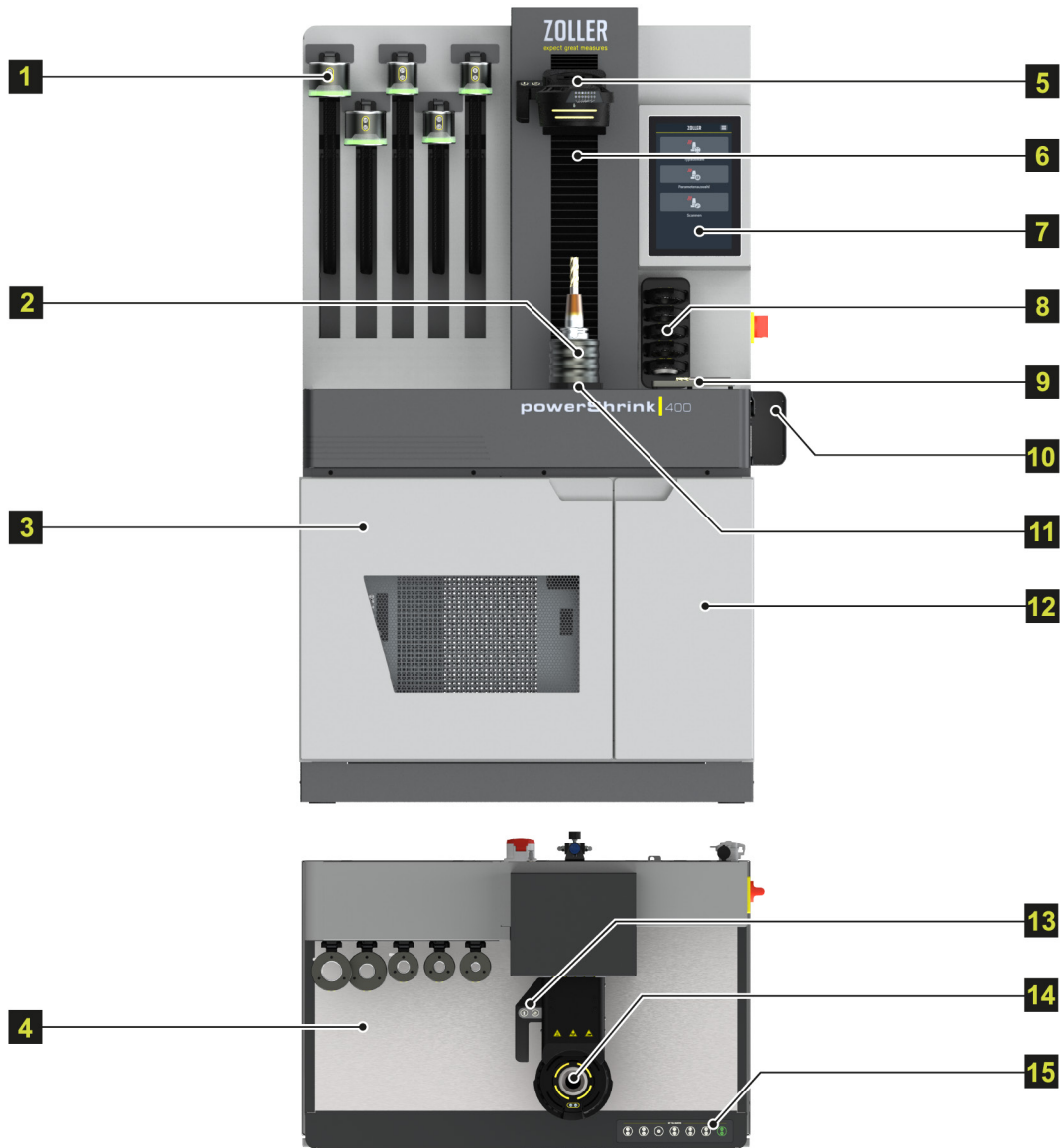
[3]Optional

Tested operational safety through TÜV certification.

ZOLLER is an accredited DIN EN ISO/IEC 17025 calibration laboratory

»powerShrink 400«

1	Cooling sockets (default or with »coolbyLight« operator guidance*)	9	Tool tray*
2	Mount*	10	Glove tray
3	Table of the cooling module for cooler and flue gas suction device*	11	Centering device for mount under the induction coil
4	Working surface area	12	Table with three integrated compartments, including one drawer
5	Induction coil	13	Operating handle for positioning the coil and starting the heating process
6	Induction coil axis	14	»varOct«* shielding washers/shielding system (manual/automatic)
7	12.5" TFT color monitor with touch operation*	15	Membrane keypad
8	Washer tray*		

*Option

»powerShrink 600«
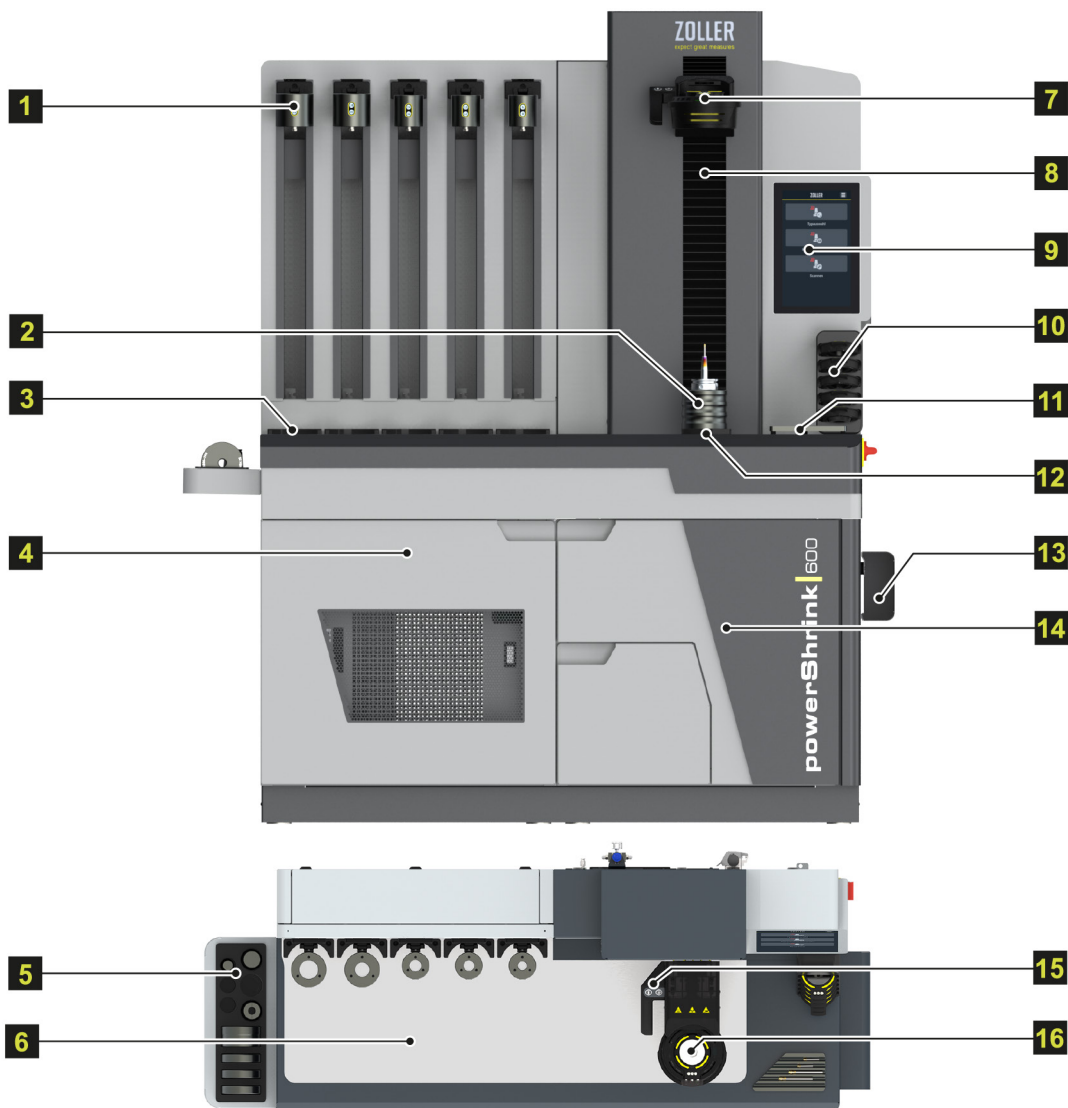
1	Cooling sockets (default or with »coolbyLight« operator guidance*)	**9**	12.5" TFT color monitor with touch operation
2	Mount*	**10**	Washer tray*
3	Centering mechanism for mount on the cooling station	**11**	Tool tray*
4	Table of the cooling module for cooler and flue gas suction device*	**12**	Centering device for mount under the induction coil
5	Storage board* with insert for mounting rings* and special cooling adapter*	**13**	Glove tray
6	Working surface area	**14**	Table with three integrated compartments, including one drawer
7	Induction coil	**15**	Operator handle for positioning the coil and starting the heating process
8	Induction coil axis	**16**	»varOct«* shielding washers/shielding system (manual/automatic)

*Option

ZOLLER Shrink-clamping Module

Two parallel switched windings inside the ZOLLER induction coil can be activated separately depending on the clamping diameter and length. This allows for optimal transfer of energy into the clamping range of the shrink-clamping chucks.

ZOLLER induction coils with »shrinkbyLight« operator guidance* offer automatic monitoring of the shielding system and coil lighting, to indicate the activity of the two coil windings. The ZOLLER induction coil is guided on a stable linear axis with the help of a counterweight. The axis clamp is released pneumatically using the button on the operator handle and can be positioned optimally as needed. A centering device under the coil supports exact positioning of the shrink-clamping chuck. The mounts can be moved quickly and quietly on the stainless-steel work surface. Operation and selection of the appropriate shrink-clamping parameters are carried out using a membrane keypad or 12.5" TFT color monitor with touch operation, depending on the version.
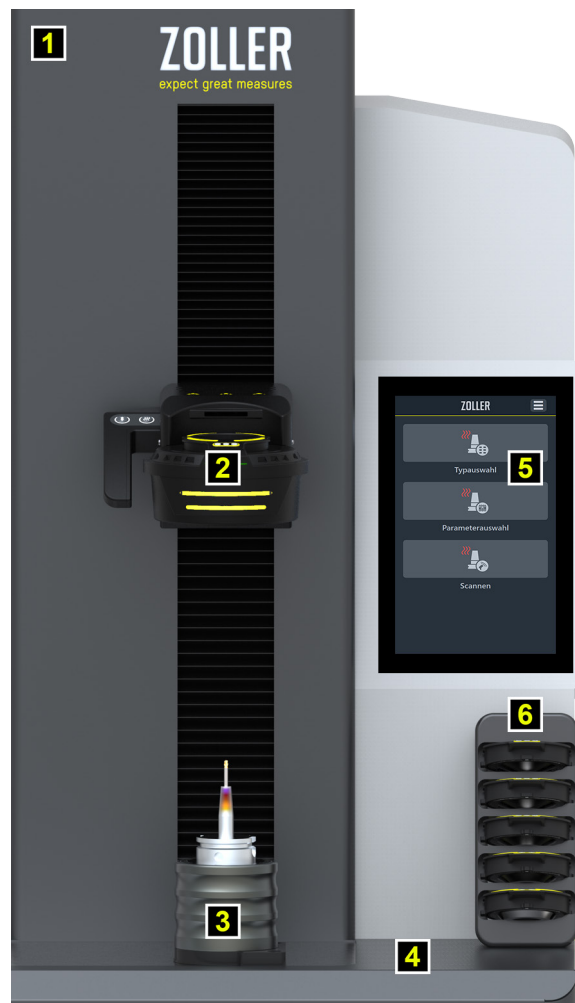
|			
1	Axis of the induction coil	**4**	Working surface area
2	Induction coil	**5**	12.5" TFT color monitor with touch operation
3	Centering device for mounts	**6**	Tray for shielding washers

*Option

Induction Coils

14 kVA Induction Coil with Shielding Washers

The appropriate shielding washer is inserted in the ZOLLER induction coil corresponding to the tool diameter to be shrink-clamped, and can be exchanged quickly and easily using a bayonet quick exchange interface. The maximum opening diameter is 50 mm.

14 kVA induction coil with shielding washers without LED display
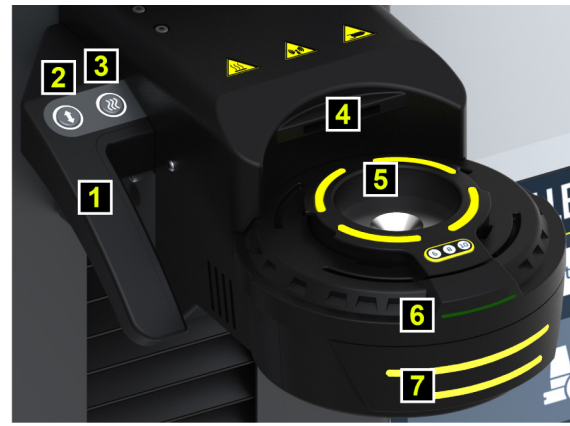
14 kVA induction coil with shielding washers with »shrinkbyLight« operator guidance

1	Operator handle
2	Button to release the axis clamp
3	Button to start the heating process
4	Flue gas suction device*
5	Shielding washer / shielding system
6	LED display for washer monitoring
7	LED displays for the two coil windings

14 kVA Induction Coil with »varOct« shielding system

The opening diameter of the seal is set to the correct position by turning the top sleeve. In the automatic version, the position is set appropriately using a CNC drive. The diameter scale shows the set position. The maximum opening diameter is 45.8 mm.
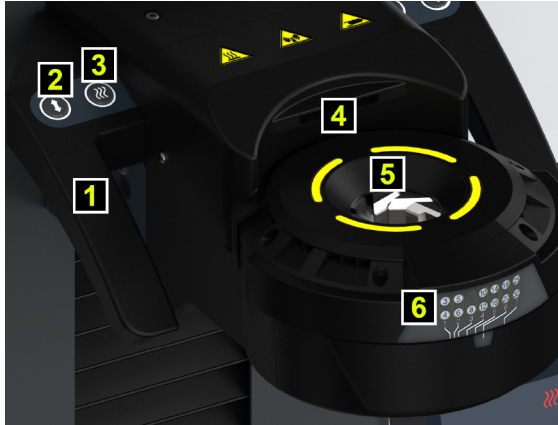
14 kVA induction coil with »varOct« manual shielding system
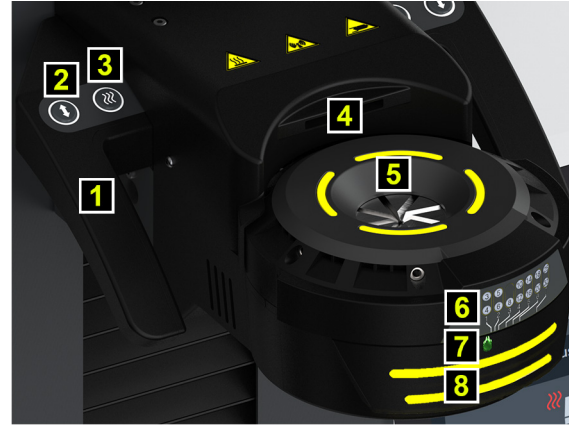
14 kVA induction coil with manual or automatic »varOct« shielding system and »shrinkbyLight« operator guidance

1	Operator handle
2	Button to release the axis clamp
3	Button to start the heating process
4	Flue gas suction device
5	»varOct« shielding system
6	Diameter scale
7	LED display for position monitoring
8	LED displays for the two coil windings

22 kVA Induction Coil with Shielding Washers

The induction coil with shielding washers is also available as a 22 kVA variant for shrink-clamping larger shrink-clamping chucks with diameters of D 40 mm to D 50 mm, as well as reinforced shrink-clamping chucks with thicker walls.

22 kVA induction coil with shielding washers

1	Operator handle	**4**	Flue gas suction device
2	Button to release the axis clamp	**5**	Shielding washer
3	Button to start the heating process		

The shielding washers are available in two versions, complete and divided, with three different sizes in the diameters:

- D 16 mm to D 20 mm
- D 25 mm to D 32 mm
- D 40 mm to D 50 mm

»shrinkbyLight« Operator Guidance

The »shrinkbyLight« operator guidance, consisting of the LED display for washer monitoring / position monitoring and the status indicator for the two coil windings, ensures better process reliability when operating the »powerShrink«.

14 kVA induction coil with shielding washers and washer monitoring

The washer monitoring indicates whether the correct shielding washer for the shrink-clamping process is inserted. Only then can the shrink-clamping process be started.

14 kVA induction coil with »varOct« shielding system and position monitoring

The position monitoring indicates whether the diameter setting is correct. Only then can the shrink-clamping process be started.

Shielding Washers for 14 kVA Induction Coils

The shielding washers for the 14 kVA induction coil are available in two versions with five different sizes in the diameters:

- D 3 mm to D 5 mm
- D 6 mm to D 10 mm
- D 12 mm to D 16 mm
- D 18 mm to D 20 mm
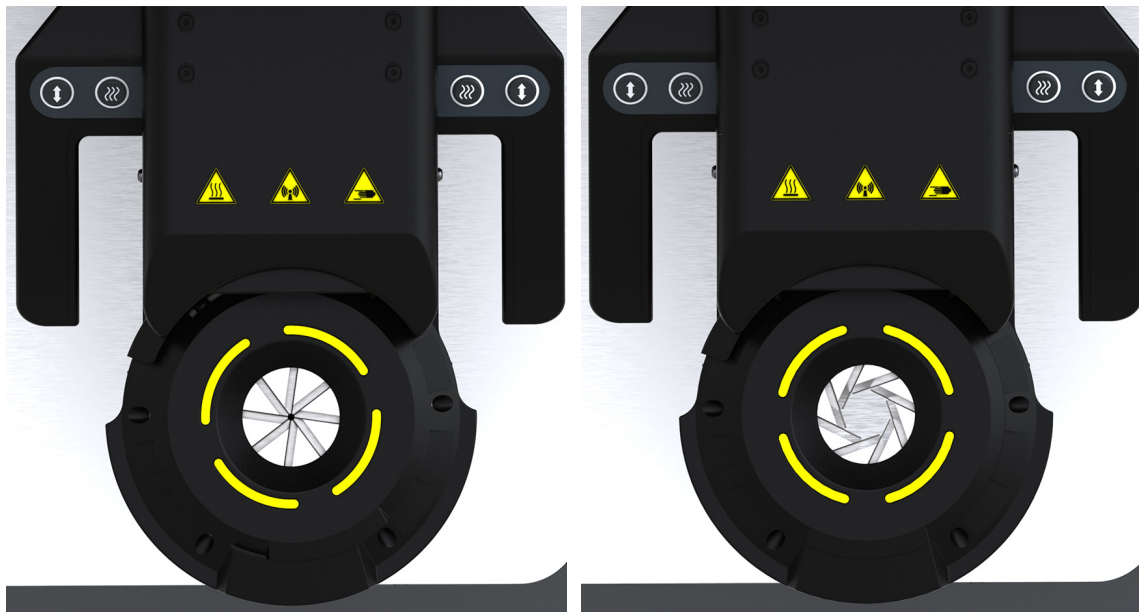- D 25 mm to D 32 mm

Complete Shielding Washers

Divided Shielding Washers

The divided shielding washers are inserted when unclamping offset tools, e.g. when the cutting edge diameter is larger than the tool shank.

»varOct« Shielding System

The appropriate opening diameter can be set by rotating the sleeve.

»varOct« shielding system closed

»varOct« shielding system open

Quick Exchange Interface

The quick exchange interface can be used to exchange the induction coils. The heat-shrinking machine does not have to be restarted; the inserted coil is detected automatically.

- For alternating operation of the 14 kVA and 22 kVA induction coils on a »powerShrink«.

Flue Gas Suction Device

The optional flue gas suction device suctions the flue gases produced when the shrink-clamping chuck is heated and filters them. The flue gas suction device above the induction coil is supplemented by a flue gas suction device integrated into the coil housing.

ZOLLER Cooling Module

Cooling Sockets:

5 cooling sockets with integrated contact cooling for cooling shrink-clamping chucks with diameters of D 6 mm to D 32 mm.

2 of the cooling sockets offer the option of mounting special cooling adapters.

The cooling sockets are available in 5 different sizes with diameters:

- D 6 mm to D 8 mm
- D 10 mm to D 12 mm
- D 14 mm to D 16 mm
- D 18 mm to D 20 mm
- D 25 mm to D 32 mm

In combination with the 22 kVA induction coil with the additional diameters:

- D 40 mm to D 50 mm (without »coolbyLight« operator guidance)

Cooling Sockets Standard

Cooling Sockets with «coolbyLight» Operator Guidance

«coolbyLight» operator guidance provides support during the cooling process with illuminated color LEDs and temperature monitoring.

Illuminated green:
Ready status
Flashing green:
Indicates the cooling socket to be used
Illuminated red:
cooling running, shrink-clamping chuck hot
Flashing blue (10 sec.):
Cooling completed, shrink-clamping chuck cold

Cooling Socket Guide with Fixing Mechanism

The cooling sockets are centered using the specially designed suspension.

The height of the suspension can be variably selected on the »powerShrink 600« and adjusted to the common tool lengths.

Cooling sockets standard

Cooling sockets with »coolbyLight« operator guidance

Linear Cooling Socket Guide with Push-to-release Mechanism for the »powerShrink 600«

The cooling sockets are positioned exactly on the shrink-clamping chuck via a linear guide. This prevents damage to the tool cutting edge. When the cooling sockets are moved down, they are released from the lock using a push-to-release mechanism. The weight compensation ensures safe movement and optimal positioning. When the cooling sockets are moved up, they automatically snap into the lock.

Cooling sockets standard

Cooling sockets with »coolbyLight« operator guidance

»zStream« Air Cooling

The »zStream« air cooling is optimal for shrink-clamping chucks and tools with contours or diameters of deviating shape and size, for which cooling sockets can only be used on a conditional basis. Tools with a length of up to 350 mm are cooled consistently. The vertical LED light strips provide a status indicator. No accessories such as cooling adapters are needed.
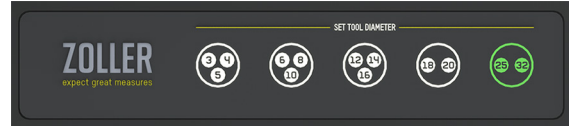

»zStream« air cooling

Electronics

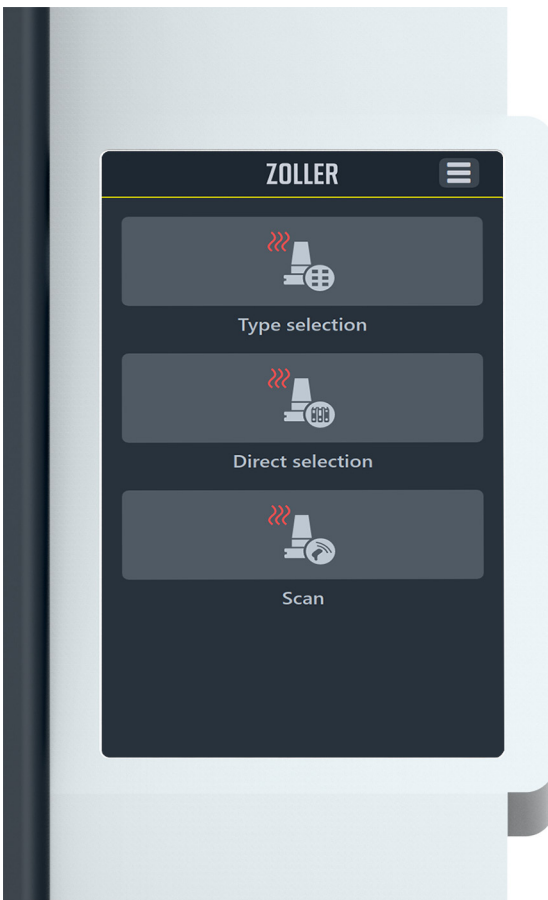**Membrane keypads for the »powerShrink 400«. The diameter is selected by pressing the appropriate key.**
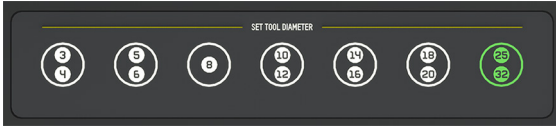
Version for induction coil with »varOct« manual shielding system

Version for induction coil with sealing washer

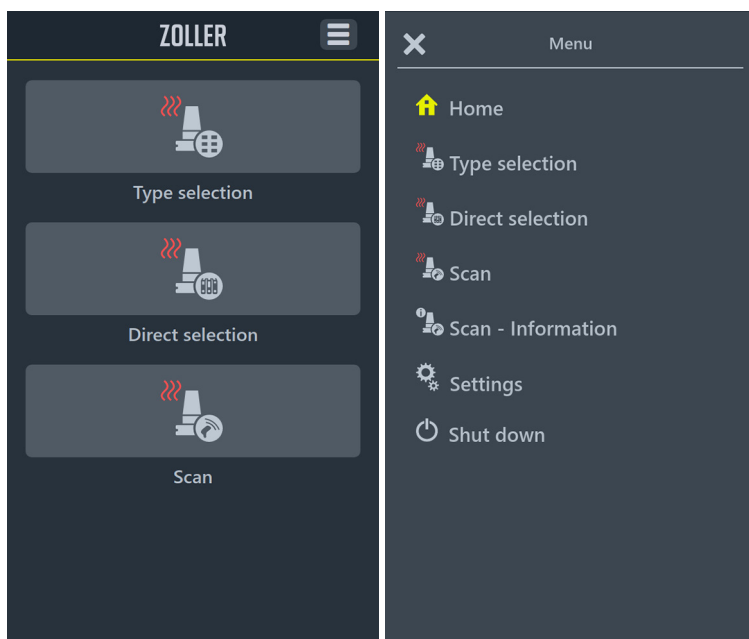**12.5" TFT monitor with touch operation for »powerShrink 400« and »powerShrink 600«.**

Version on the »powerShrink 600«

Software

»pilot« Operating Software

»pilot« is the ZOLLER operating software for heating and cooling shrink-clamping chucks on the »powerShrink«, optimized for a touch screen with the modern "Flat Design" operating concept.

The »pilot« menu offers up to three options for selecting the shrinking parameters. The self-explanatory graphic elements of the »pilot« user interface ensure fast and simple operation.

▪ The color, animated status displays provide a quick overview and ensure a safe workflow.
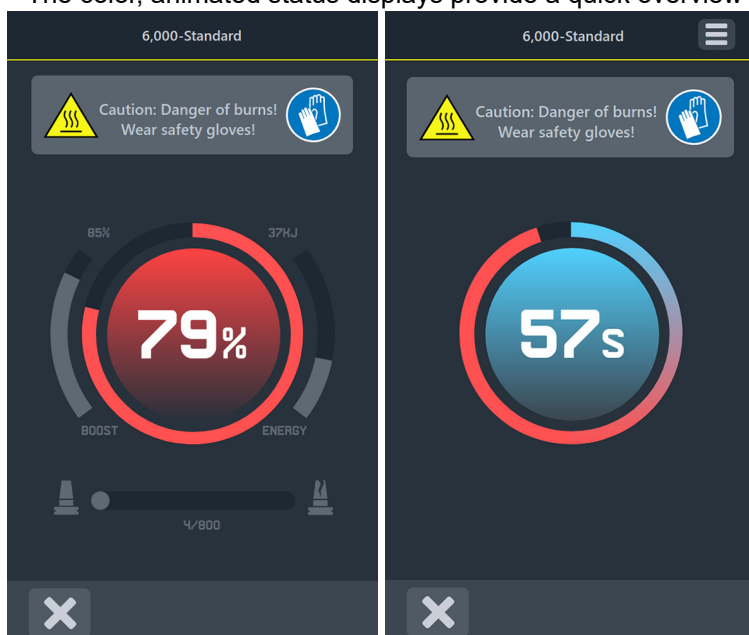
Type Selection

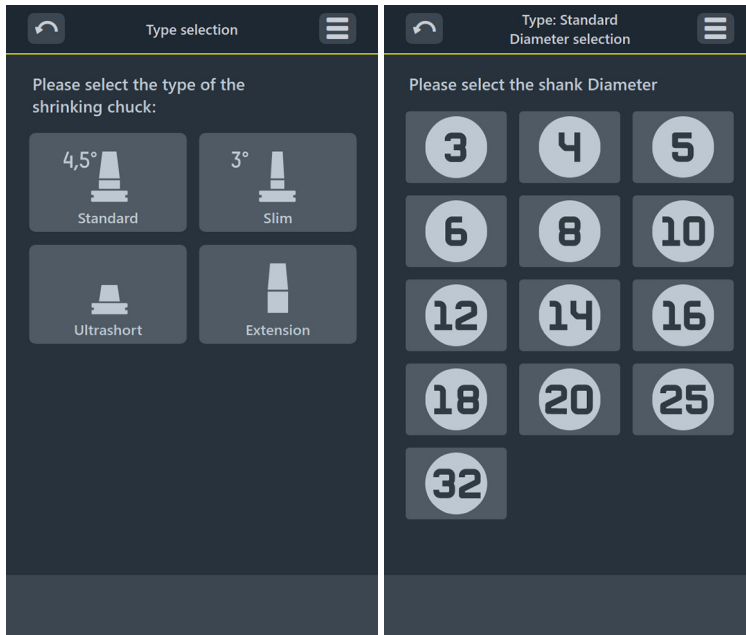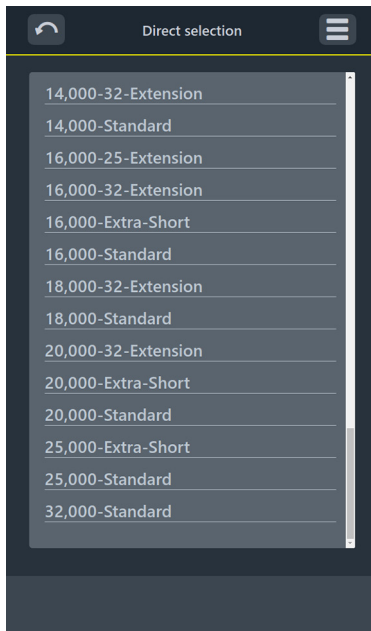A selection of shrink-clamping chuck types is provided in the «Type selection» with basic library. After the type is selected, the shaft diameter is selected.

Direct Selection

A selection of shrinking parameters for diameters D 3 mm to D 32 mm is provided in the «Direct selection». The appropriate parameter can be selected from a list of all available diameters and their variants.

Scanning*

The appropriate shrinking parameters are selected in the «Scan» selection by scanning the holder number on the shrink-clamping chuck. All shrink-clamping chuck types with DataMatrix code are supported (e.g. »idLabel«, »idChip«), regardless of the manufacturer. Information on the shrink-clamping chuck can be displayed by scanning the holder number.
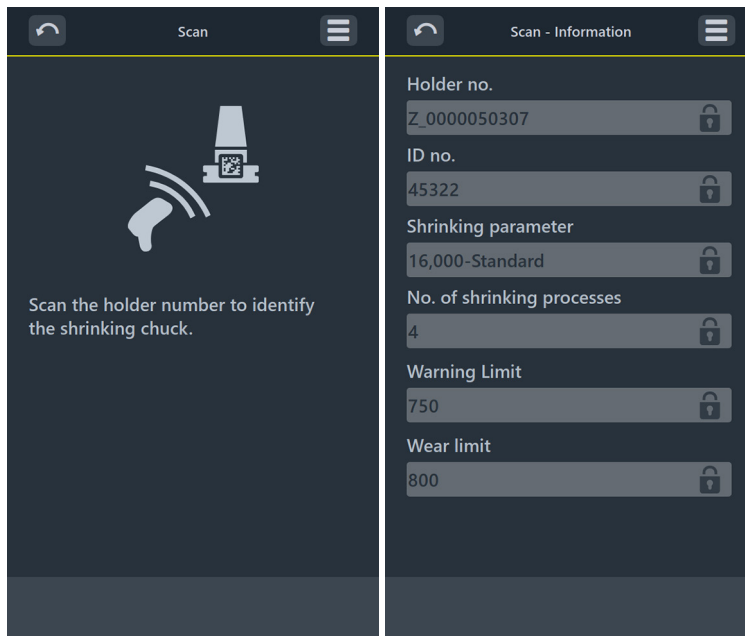
Counting Function/Shrink-clamping Procedures*

- A «Warning Limit» and «Wear Limit» for the permitted shrink-clamping procedures for the shrink-clamping chuck can be stored in the operating software, and each shrink-clamping procedure can be counted.

*Option

»powerShrink« Versions

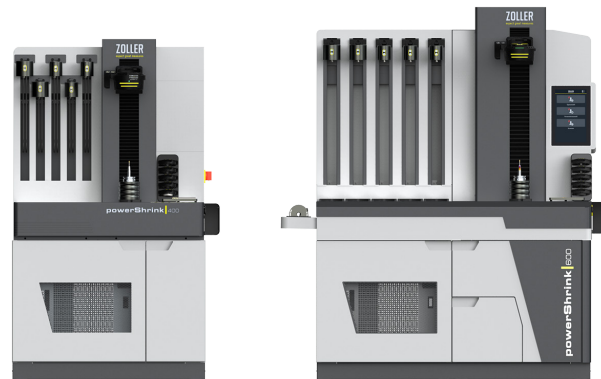»powerShrink 400«   »powerShrink 600«

Device versions		
Workbench version	●	-
Table version	○	●
Table with four rollers and handle for mobile installation	○	-
Operation		
Membrane keypad	●	-
12.5" TFT color monitor with touch operation	○	●
Shrink-Clamping Module		
Induction coil axis with pneumatic release of the axis clamp	●	●
Induction coil with shielding washers	●	●
Induction coil with shielding washers and »shrinkbyLight« operator guidance	○	○
Induction coil with »varOct« manual shielding system	○	○
Induction coil with »varOct« manual shielding system and »shrinkbyLight« operator guidance	○	○
Induction coil with »varOct« automatic shielding system and »shrinkbyLight« operator guidance	○[1]	○
14 kVA induction coil	●	●
22 kVA induction coil	-	○[2]
Quick exchange interface	-	○
Flue gas suction device	○	○
Operating handle left	●	●
Operating handle right/both sides	○	○

»powerShrink 400«   »powerShrink 600«

Cooling module		
Cooling system	-	●
Cooling sockets standard	●	●
Cooling sockets with »coolbyLight« operator guidance and temperature monitoring	o[1]	o
Cooling sockets guide with fixing mechanism	●	●
Linear cooling socket guide with push-to-release mechanism	-	o
»zStream« air cooling	o[3]	o[4]
Cooler manager	o[5]	o
Software		
ZOLLER »pilot« operating software	o[1]	●
Self-explanatory, graphic function areas	o[1]	●
Color animated status indicators	o[1]	●
Interface to the »actbyLight« operation concept	o	●
Scan	o[1]	o
Counting function for shrink-clamping procedures	o[1]	o

»powerShrink 400«   »powerShrink 600«

Accessories		
Reader	○[1]	○
Mount and mounting rings	○	○
Cooling adapters for cooling sockets	○	○
Washer tray	○	○
5 divided shielding washers with washer tray	○	○
Storage board with insert for mounting rings and special cooling adapter	○	○
Tool tray	○	○
Glove tray	●	●
»toolEx« unclamping fixture	○	○
»liteSet« length setting system	○	○
»eQset« integrated length setting system	○[6]	○
Brush holder	○	○
Cleaning brushes for shrink-clamping chuck	○	○

●   **Default**

○   **Option**

-        **Not possible**

1   **In connection with 12.5" TFT color monitor with touch operation**

2   **In connection with quick exchange interface**

3   **With 2 cooling stations**

4   **With 3 cooling stations**

5   **In connection with cooling socket/water cooler**

6   **In connection with right operating handle**

Accessories

Scan Function Including Code Reader*

The appropriate shrinking parameters are selected in the «Scan» selection by scanning the holder number on the shrink-clamping chuck. All shrink-clamping chuck types with DataMatrix code are supported (e.g. »idLabel«, »idChip«), regardless of the manufacturer. A «Warning Limit» and «Wear Limit» for the permitted shrink-clamping procedures for the shrink-clamping chuck can be stored in the operating software, and each shrink-clamping procedure can be counted.

* In conjunction with 12.5" TFT monitor with touch operation

Mount and Mounting Rings

The mounts are designed so as to prevent them from becoming tipped during positioning in the centering mechanisms on the working surface. The sliding surface makes it possible to comfortably and quietly move the mount.

Height of the mount:

▪ 110 mm

The mounting rings are available for all common tool-holding fixture types and sizes:

▪ up to SK 50
▪ up to HSK 100
▪ up to PSC 10
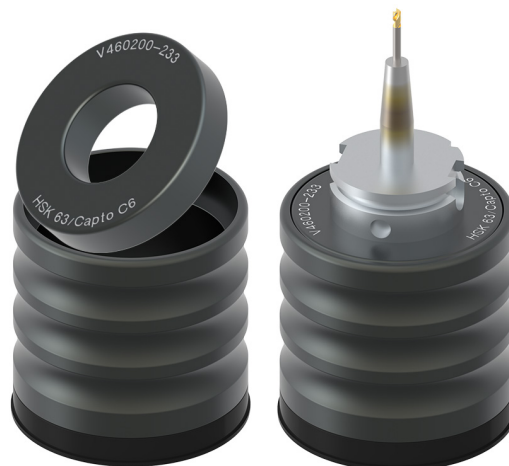
Cooling Adapters for Cooling Sockets

Cooling adapter for specialized shrink-clamping chuck formats and sizes (e.g. D3 mm to D5 mm).

Suitable for cooling sockets:

▪ D 14 mm to D 16 mm
▪ D 25 mm to D 32 mm

Washer Tray

The washer tray can be attached to the heat-shrinking module with magnets and is used to store the shielding washers.

- Offers space for the five shielding washers of the induction coil
- Another washer tray can be used if necessary.

Storage Board with Inserts for Mounting Rings and Special Cooling Adapter
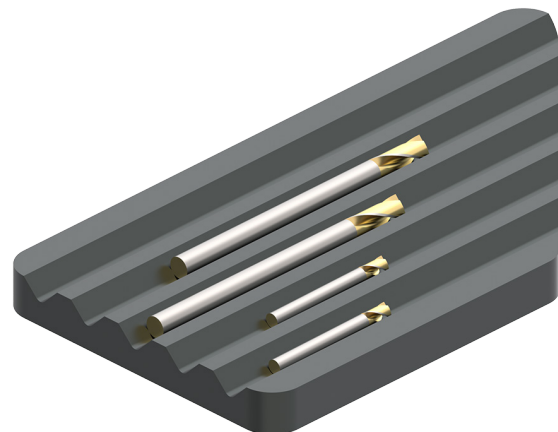
The storage board can be attached on the left side of the cooling module and is used to store 4 mounting rings and 6 special cooling adapters in size I, or 3 special cooling adapters in sizes I and II.
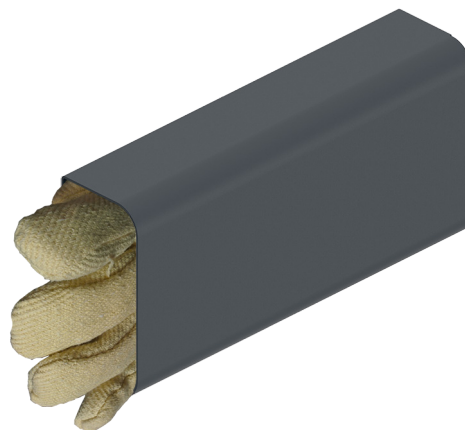
Tool Tray

The tool tray can be placed anywhere on the heat-shrinking machine using magnets.

- Tray for shaft tools to be shrink-clamped or unclamped tools

Glove Tray

The glove tray can be placed freely on the right side of the heat-shrinking machine using magnets, and is used to store heat-resistant protective gloves.

»toolEx« Unclamping Fixture

The »toolEx« unclamping fixture is used to remove tools from the shrink-clamping chuck that cannot be removed from the shrink-clamping chuck by hand or using tongs from the top (such as broken tools).
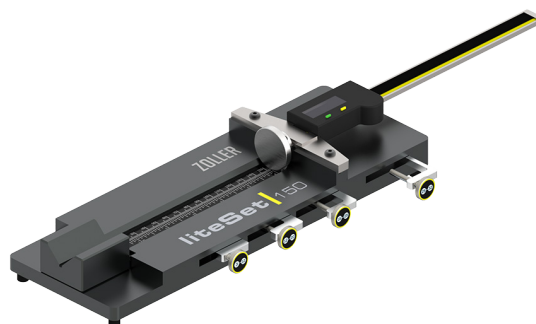
The unclamping fixture consists of:

- A shelf
- Exchangeable pins of different lengths and diameters for each shrink-clamping chuck
- A mount holder
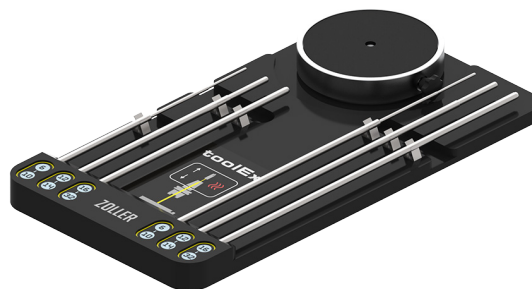
»liteSet« Length Setting System

The »liteSet« length setting system is used to adjust the overhang length of the tool.

- The maximum overhang length is 150 mm
- Includes 4 clamping prisms for shaft diameters D 3 mm to D 32 mm

»eQset« Length Setting System

The »eQset« length setting system integrated into the shrink-clamping module is used to adjust the total or overhang length of the tool and to complete a simple tool exchange. The measurement device has pneumatic quick adjustment and fine setting via hand wheel. The measurement head is moved between the park and working position using a linear guide.

Brush Holder

The brush holder can be placed anywhere on the shrink-clamping machine and is equipped with recesses for the cleaning brushes.

▪ For brushes with a diameter of 3 to 30
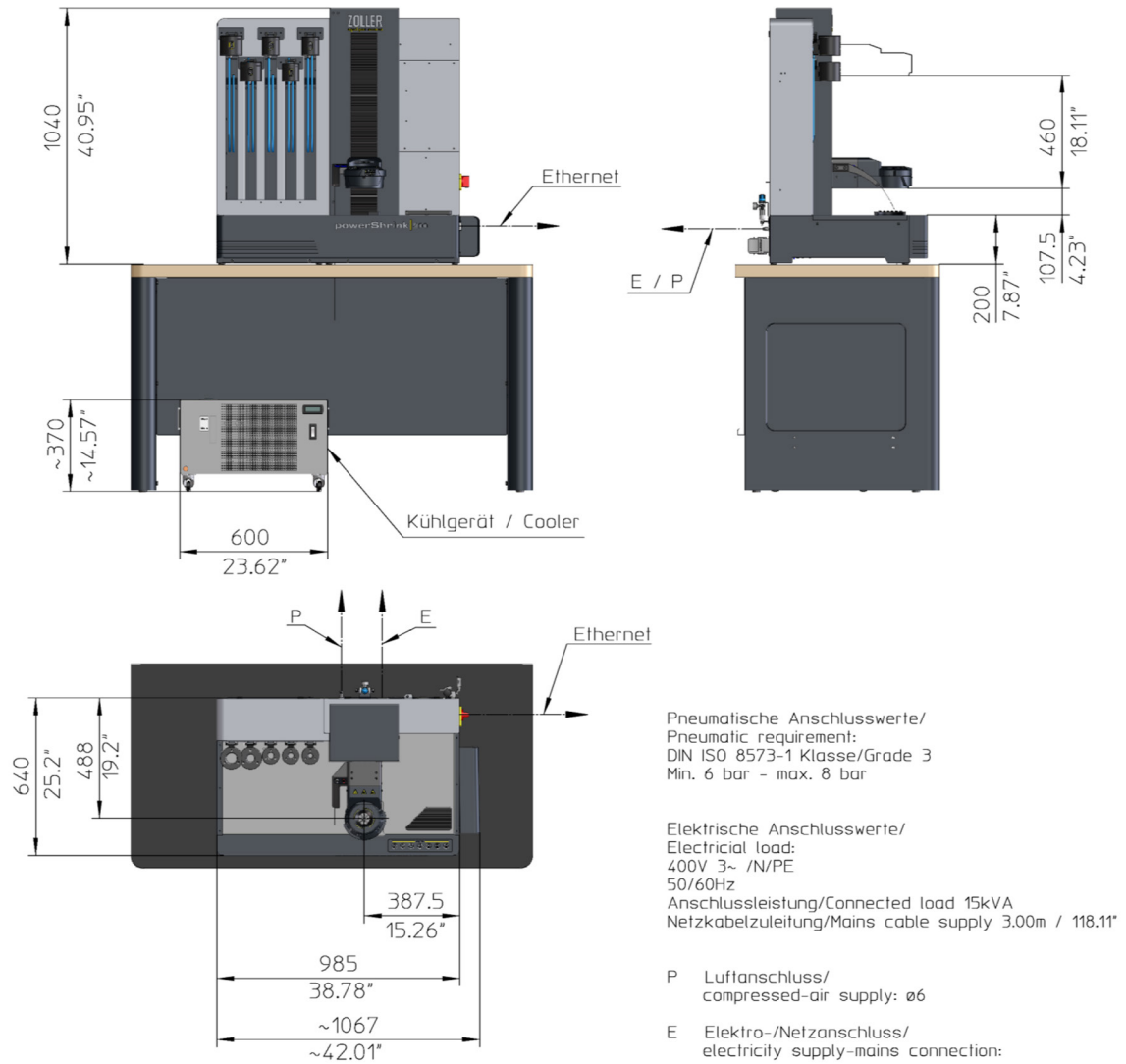
Cleaning Brushes for Shrink-clamping Chuck

For cleaning the mounting hole on the shrink-clamping chuck. The cleaning brushes are available in various sizes, to match the shrink-clamping chuck diameters.

▪ The cleaning brushes are available in brass or polyamide.

Technical Data

Alternating Current	400 V 3~/ N / PE	
Connection	Socket with protective ground contact	
Power	15 kVA	
Frequency	50 / 60 Hz	
Circuit breaker	6 A (thermal)	
Compressed air supply	6 - 8 bar	87 - 116 psi
Operating pressure of the pneumatics	6.0 bar	87 psi
Quality of compressed air	dry, lightly oiled	
Ambient temperature during operation	5 - 35 °C	
Relevant humidity during operation:	10 - 90 % (non-condensing)	
Use in operations	Interiors	
Noise level	During operation the product reaches a noise level of < 45 dbA. When using the printer, which is available as an option, the noise level may briefly rise to < 54 dbA according to DIN EN ISO 1683:2015- 09.	
»powerShrink 400« as workbench version		
Height	1040 mm	40.95 inch
Width	1067 mm	42.01 inch
Depth	640 mm	25.2 inch
Weight	143 kg	315 lbs
Tool length that can be shrink-clamped	460 mm	18.11 inch
»powerShrink 400« with table		
Height	1755 mm	69.09 inch
Width	1074 mm	42.28 inch
Depth	645 mm	25.39 inch
Weight	284 kg	626 lbs
Tool length that can be shrink-clamped	460 mm	18.11 inch
»powerShrink 600«		
Height	1920 mm	75.59 inch
Width	1420 mm	55.91 inch
Depth	622 mm	24.49 inch
Weight	410 kg	903.8 lbs
Tool length that can be shrink-clamped	600 mm	23.62 inch
Max. opening diameter of the induction coil with sealing washer	50 mm	1.96 inch
Max. opening diameter of the induction coil with »varOct« shielding system	45.8 mm	1.8 inch
Max. tool weight	20 kg	44 lbs

»powerShrink 400« as Workbench Version

1040 / 40.95"

Ethernet

~370 / ~14.57"

600 / 23.62"

Kühlgerät / Cooler

460 / 18.11"

107.5 / 4.23"

200 / 7.87"

E / P

P   E

Ethernet

640 / 25.2"

4.88 / 19.2"

387.5 / 15.26"

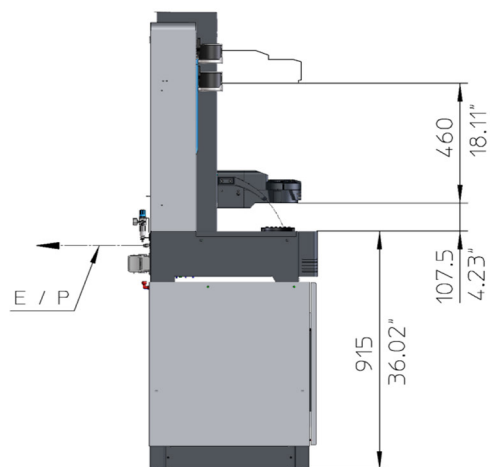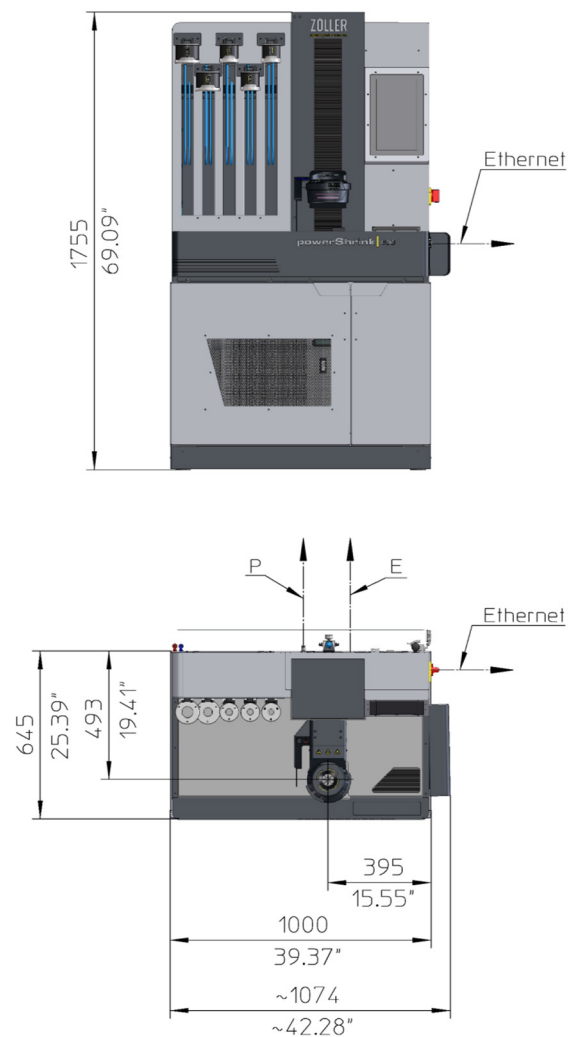985 / 38.78"

~1067 / ~42.01"

Pneumatische Anschlusswerte/
Pneumatic requirement:
DIN ISO 8573-1 Klasse/Grade 3
Min. 6 bar - max. 8 bar

Elektrische Anschlusswerte/
Electricial load:
400V 3~ /N/PE
50/60Hz
Anschlussleistung/Connected load 15kVA
Netzkabelzuleitung/Mains cable supply 3.00m / 118.11"

P   Luftanschluss/
     compressed-air supply: ø6

E   Elektro-/Netzanschluss/
     electricity supply-mains connection:

Gewicht / Weight
ohne Tisch / without table : 143 kg / 315 lbs

»powerShrink 400« with Table

Ethernet

1755
69.09"

460
18.11"

107.5
4.23"

915
36.02"

E / P

P   E

Ethernet

645
25.39"

493
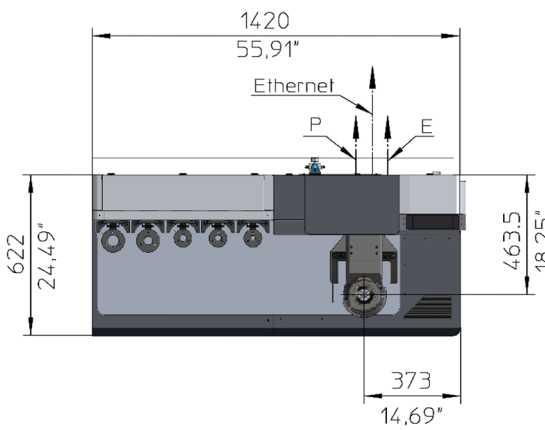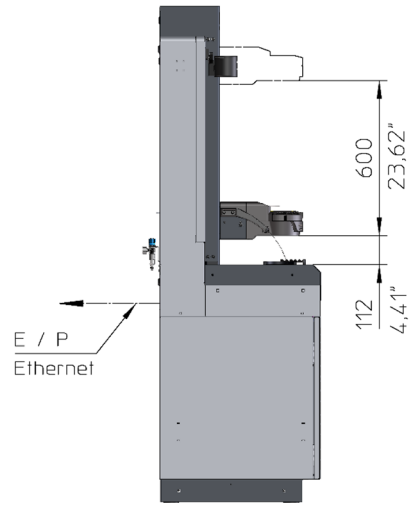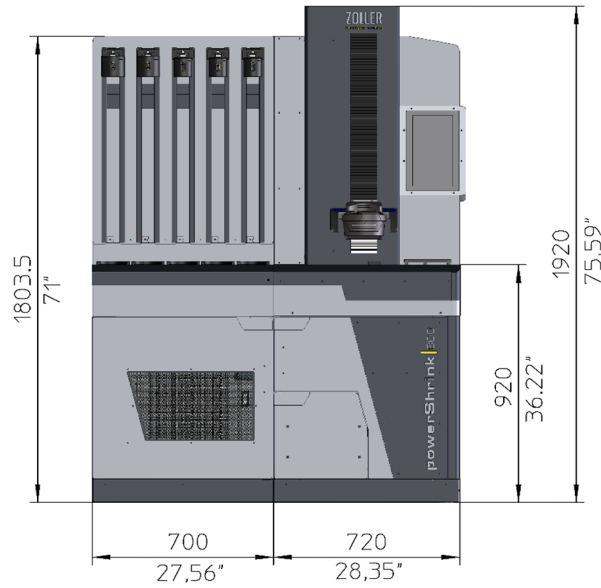19.41"

395
15.55"

1000
39.37"

~1074
~42.28"

Pneumatische Anschlusswerte/
Pneumatic requirement:
DIN ISO 8573-1 Klasse/Grade 3
Min. 6 bar – max. 8 bar

Elektrische Anschlusswerte/
Electricial load:
400V 3~ /N/PE
50/60Hz
Anschlussleistung/Connected load 15kVA
Netzkabelzuleitung/Mains cable supply 3.00m / 118.11"

P   Luftanschluss/
       compressed-air supply: ø6

E   Elektro-/Netzanschluss/
       electricity supply-mains connection:

Gewicht / Weight :   284 kg / 626 lbs

»powerShrink 600« with Table

1803.5
71"

1920
75,59"

920
36,22"

700
27,56"

720
28,35"

powerShrink 600

600
23,62"

112
4,41"

E / P
Ethernet

1420
55,91"

Ethernet

P   E

622
24,49"

463.5
18,25"

373
14,69"

Pneumatische Anschlusswerte/
Pneumatic requirement:
DIN ISO 8573-1 Klasse/Grade 3
Min. 6 bar – max. 8 bar

Elektrische Anschlusswerte/
Electricial load:
400V 3~ /N/PE
50/60Hz
Anschlussleistung/Connected load 15kVA
Netzkabelzuleitung/Mains cable supply 3.00m / 118.11"

P   Luftanschluss/
        compressed-air supply ø6

E   Elektro-/Netzanschluss/
        electricity supply-mains connection

Gewicht / Weight : ~410 kg / ~903,8 lbs

Service

Commissioning

Technical commissioning will take at least 1 day (8h/day) and will be handled at the customer's location by a ZOLLER service technician, including travel costs.

Operator Training

A training session of at least 1 day (8h/day) will be carried out at the customer's location by a ZOLLER service technician, including travel costs.
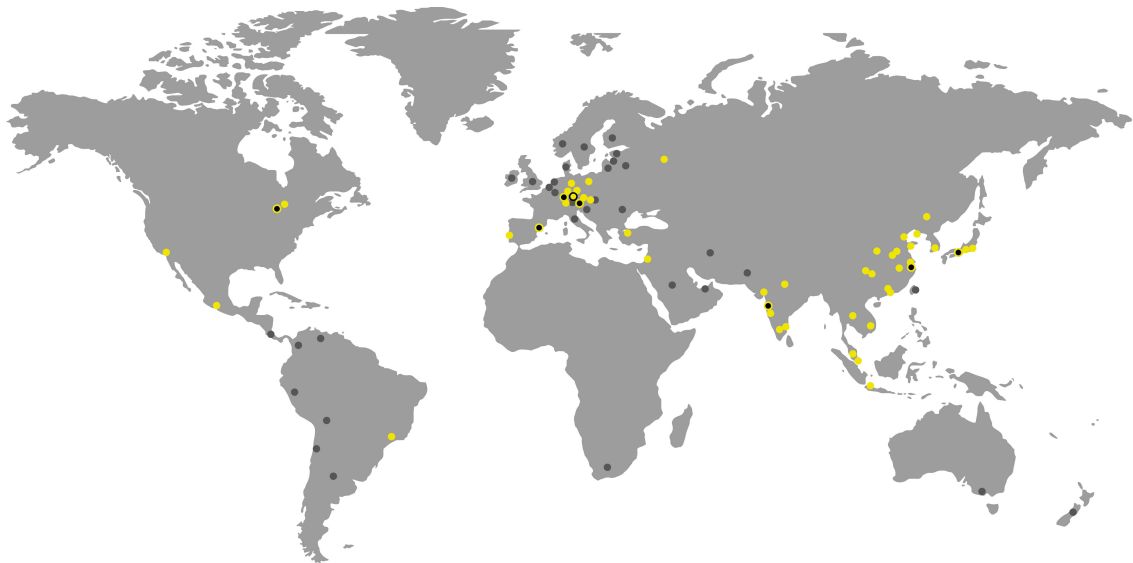
Production Support

Production support will take at least 1 day (8h/day) and will be carried out at the customer's location by a ZOLLER service technician, including travel costs.

Factory Acceptance / Preliminary Acceptance

Upon request, the factory acceptance / preliminary acceptance (8hrs/day) can be performed jointly with the customer at ZOLLER in Pleidelsheim. This will be performed by a ZOLLER service technician.

ZOLLER

Knowledge on site worldwide

We offer service where you need it – around the world in 58 countries.

⬤	⬤	⬤	⬤
Head office	Headquarters	Branch office	Representative

Our customers have trusted us for many decades, partially because ZOLLER offers first-class customer service. Just like all of our services, this customer service improves your production efficiency and quality. You benefit from freedom from maintenance, long lifetimes, and the ongoing further development of our solutions.

ZOLLER

Solutions

More speed, higher quality, safe processes – with ZOLLER, you increase the efficiency of your production. ZOLLER offers you outstandingly precise devices for adjusting, measuring and testing cutting tools, software, interfaces, cloud services and solutions for the automation of tool processes. You can combine all of this to create your individual system solution – on your way to the smart factory.

Presetting & Measuring

Tool Management

Inspection & Measuring

Automation

Everything from a Single Source.
Everything for your Success.
Everything with ZOLLER Solutions.

ZOLLER
expect great measures