Rittal – The System.

Faster – better – everywhere.

Crimping machine RC-I

4051.020

Operating instructions

EN

Contents

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1 About this documentation

The warnings in this documentation are structured differently depending on the severity of danger.

Warning!
Risk of fatality!
Notices with the signal word "Warning" warn you about situations which could lead to fatal or severe injuries if you do not pay attention to the specified notices.

Caution!
Risk of injury!
Notices with the signal word "Caution" warn you about situations that could lead to injury if you do not pay attention to the specified notices.

Attention!
Property damage!
Notices with the signal word "Attention" warn you about dangers that could result in property damage.

Situation-related warnings may contain the following warning symbols:

Symbol	Meaning
	Warning: Dangerous voltage
	Warning: Injury to hands due to sharp blades
	Warning: Injury to hands (crushing)
	Work may be performed only by a qualified electrician
	Perform work only with personal protective equipment
	Notes on documentation

Additional formatting is used in the rest of the text which has the following meaning:

Note:
This constitutes information which is not related to safety, but which provides important information regarding correct and effective work.

■ This symbol indicates an "action point" and shows that you should perform an operation or work step.

– Enumerations are indicated with dashes.

Operating instructions in other languages can be found on our website:

Click here!

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2 General safety instructions

2.1 Intended use

The automatic machine is designed for insulation stripping and crimping of flexible conductors in a single workstep.
Only material described in section 2.2 may be processed with the automatic machine.
The process-secure machining can be guaranteed only for Rittal wire end ferrules; the processing of products from other manufacturers can lead to machine malfunctions and damage.
The automatic machine may be deployed only within the specified technical limits (see sections 3.1 "Technical specifications" and 3.2 "Rating plate"). Changes and conversions must not be made to the automatic machine. Warning signs must not be removed.
The intended use also includes the observance of the complete documentation.
All other uses are deemed as improper. An improper use is one that is not known to the manufacturer.
Secure operation is not ensured and the manufacturer's liability is excluded for the non-observance of these specifications.

2.2 Processable material and crimping form

Conductors
Flexible H05V-K and H07V-K PVC conductors with a cross-section of 0.5 – 2.5 mm².

Note:
The only wires that are considered processable are those that have been approved by the manufacturer. For a complete list, please contact your sales partner.

Wire end ferrules
Rittal wire end ferrules on a reel: www.rittal.com

Crimping form
Trapezoidal (standard)

2.3 Safety equipment

The automatic machine is equipped with the following safety equipment:
– Safety switch inside on the front panel
– Main valve
– Mains connector
This safety equipment must not be disabled. It must be checked annually by a service technician.
The automatic machine must not be operated in the event of a malfunction.

2.4 Personnel

Only personnel familiar with the machine may operate the automatic machine and perform maintenance tasks. The familiarisation also includes reading the operating instructions completely.

Repairs may be performed only after consultation with Rittal Service and only by a qualified electrician.

Keep these operating instructions at a safe place for future reference by operating personnel when needed.

3 Unit description

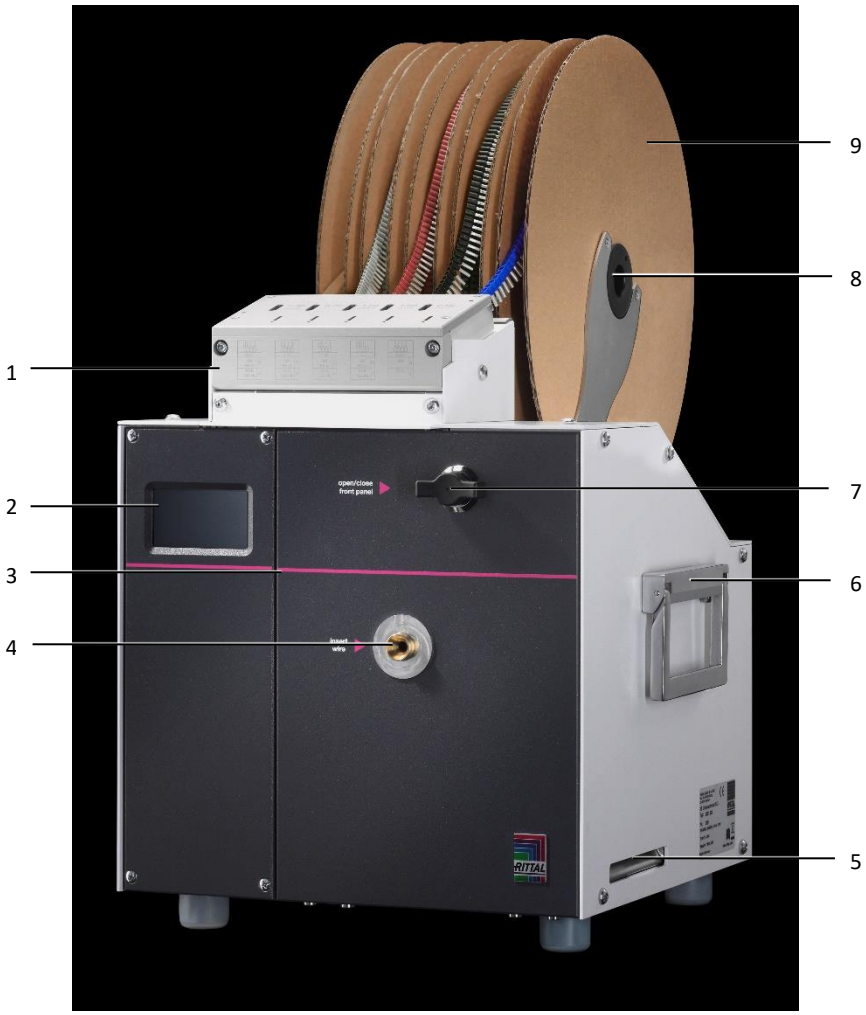

Fig. 1: Front view

Fig. 2: Rear view

Legend

1 Transport unit
2 Touch display
3 Front panel
4 Conductor feeding funnel
5 Waste chute
6 Carrying handle (on both sides)
7 Front panel latch
8 Reel holder
9 Wire end ferrule reel

10 Compressed-air maintenance unit
11 Pressure regulator for holding tongs
12 Mains connection socket
13 Fuse box
14 On/Off switch
15 12-pin interface

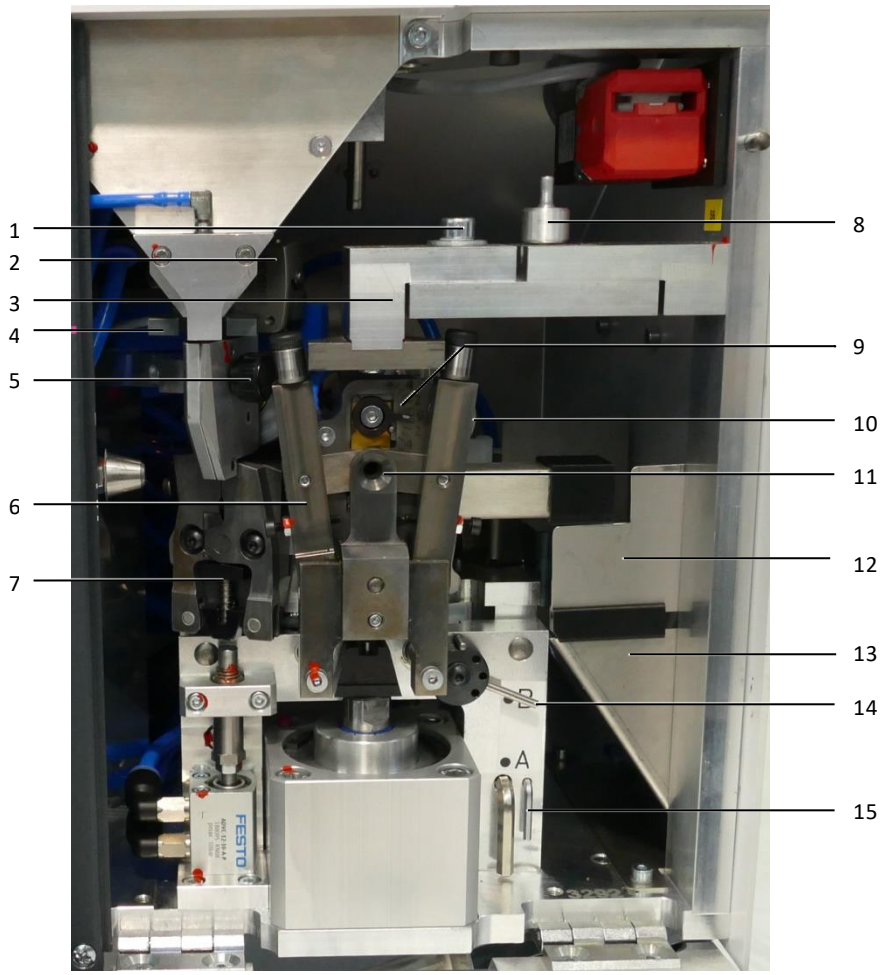

Fig. 3: Interior view

Legend

1 Opening chock setting
2 LS11 light barrier
3 Opening chock
4 LS10 light barrier
5 Sleeve limit stop setting
6 Crimping unit
7 Sleeve holding unit
8 Fixing pin
9 Insulation stripping unit
10 Tripping mechanism setting
11 Stranded wire fixing unit
12 Shielding plate
13 Fall-out plate
14 Stranded wire fixing unit setting
15 Allen key 2.5 mm and 5 mm

3.1 Technical specifications

	Crimping machine RC-I
Drive	electro-pneumatic
Power supply	1~, 100 – 240 V AC, 50/60 Hz
Power consumption	16 VA
Fuse (mains filter module)	2 x T2AH250V

	Crimping machine RC-I
Maximum short-circuit current (SCCR)	1.5 kA
Protection category	IP20
Protection class	I / PE conductor
Operating pressure	5.5 bar
Air consumption	approx. 0.9 nl / limit stop
Conductor insertion length	27 mm + crimping length
Crimping length	8 mm / 10 mm
Wire end ferrules	0.5 – 2.5 mm²
Crimping form	Trapezoidal
Cycle time	< 2.0 s
Conductor insertion length	200 mm
Ambient temperature	
Operation	+5 °C to 40 °C
Storage/transport	-25 °C to +55 °C (short-term +70 °C)
Environmental conditions	
Operating environment	Operation in closed and dry spaces / work-shops
Internal temperature during operation	max. 45 °C
Max. operating altitude	2000 m above mean sea level
Humidity	50% at +40 °C (without condensation), 90% at +20 °C (without condensation)
Contamination level	2
Continuous sound pressure level	< 70 dB(A)
Dimensions (W x D x H)	340 x 460 x 560 mm
Colour	RAL 9003/RAL 7016
Weight	22 kg

3.2 Rating plate

Symbol	Meaning	
	Operate automatic machines only in closed and dry spaces / workshops.	IEC 60417
	Reference to the accompanying information or that attached to the product. Directive 2003/15/EC	European Union

Symbol	Meaning	
	CE label	European Economic Area (EEA)
	The number of years that the product can be used for the intended use. SJ/T 11363-2006 (China RoHS)	China
	Marked product must not be disposed of as household refuse. WEEE directive	Europe

4 Transporting and installing the automatic machine

4.1 Installation site

The installation site must satisfy the following requirements:

– Stable base with flat, level surface (automatic machine weight, see section 3.1 "Technical specifications").
– At least 30 cm free work surface on both sides and in front of the automatic machine.
– Connection for electricity and compressed air easily accessible near the machine.
– The ergonomic principles as standing or sitting workstation follow.
– The workstation illumination should lie in the range 500 – 1000 lux.

Note:
The optimum operating pressure is 5.5 bar (±0.5 bar). Adequately good crimping results cannot be achieved with less than 5 bar operating pressure.
Increased wear on the automatic machine can occur with more than 6 bar operating pressure.

4.2 Transporting the automatic machine

Caution!
■ Always wear work shoes with foot protection when transporting the automatic machine.

■ Consider the weight of the automatic machine (see section 3.1). If necessary, use a transport aid.
■ Always use the side carrying handles to move the automatic machine.
■ To prepare the automatic machine for shipping (e.g. for servicing), use the transport packaging.

4.3 Unpacking the delivery

■ Check the delivery for completeness (see section 4.4 "Scope of supply").
■ Retain the transport packaging.
■ Ensure that the operating instructions are always available for users.

4.4 Scope of supply

– Insulation stripping and crimping machine
– Mains connection cable (10 A, 250 V)
– Conductor feeding funnel set (3 sizes)
– Socket plug for 12-pin connection

– Compressed air hose
– Allen key 2.5 mm and 5 mm
– Operating instructions
– Fixing pin
– Retaining plate

4.5 Installing the retaining plate

The automatic machine is supplied with a retaining plate that must be installed prior to commissioning.

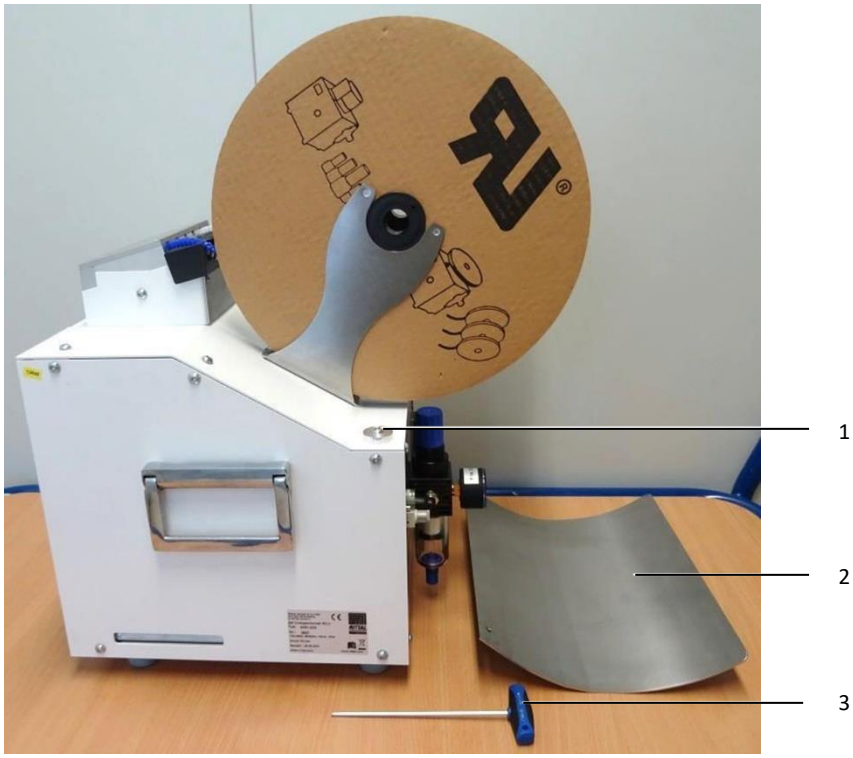

Fig. 4: Retaining plate installation

Legend
1 Screw with spacer
2 Retaining plate
3 Allen key, size 3

To install the retaining plate, proceed as follows:

■ Loosen the spacer screws with the Allen key.
■ Install the retaining plate and retighten the screws.

Fig. 5: Installed retaining plate

Legend
1 Installed retaining plate

4.6 Installing connections

■ Install the automatic machine at the envisaged location.

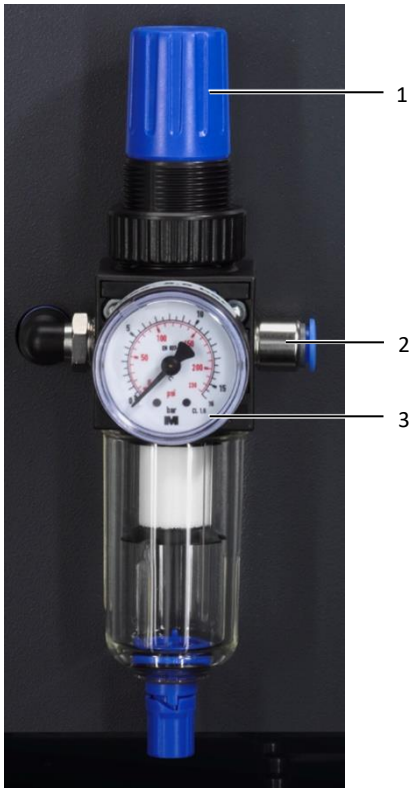

Fig. 6: Installing connections

Legend
1 Adjusting screw
2 Compressed air connection
3 Manometer

■ First connect the compressed air hose to the compressed air maintenance unit of the automatic machine (fig. 6, item 2).
■ Then connect the compressed air hose with the compressed air source.
■ Check the manometer display (fig. 6, item 3).
The operating pressure must be between 5 and 5.5 bar.

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- If necessary, adjust the operating pressure by pulling the adjusting screw upwards (fig. 6, item 1) and turning it carefully:
  – Turn clockwise to increase the pressure.
  – Turn counter-clockwise to decrease the pressure.
- Insert the 12-pin socket in the interface.
- Insert the mains cable in the mains connection socket of the automatic machine and connect it to the power supply.

5 Configuring the automatic machine

The automatic machine must be configured for the following situations:
– When a different type of wire end ferrule should be processed
– For every configuration
The following settings must be checked, and modified when required, for every configuring:
– Wire end ferrule reel
– Sleeve cross-section
– Sleeve length at four positions (see section 5.5 "Setting the stripping length")
– Reel holder

You can find how to use the crimping machine on our YouTube channel:

Click here!

Note:
The automatic machine must be switched off when configuring.

5.1 Setting the reel holder

If wire end ferrules with length 10 mm should be processed, the associated reel holder must be widened.

- If a wire end ferrule reel is installed, remove it (see section 5.4 "Replacing the wire end ferrule reel").
- Loosen with a 2.5 mm Allen key both fastening screws on the right-hand part of the reel holder.
- Move the loosened part of the reel holder uniformly by approx. 2 mm to the right.
- Retighten the two fastening screws.
- Insert wire end ferrules (see section 5.3 "Inserting wire end ferrules").

Fig. 7: Reel holder (length 8 mm: left, length 10 mm: right)

If wire end ferrules with length 8 mm are to be processed, the associated reel holder must be returned to the original position.

5.2 Inserting the feeding funnel

The feeding funnel must be changed for the following situations:

– When a conductor with a different cross-section is to be processed.

Conductor cross-sections are assigned to each letter:

– A = 0.5 – 0.75 mm²
– B = 1 – 1.5 mm²
– C = 2.5 mm²

Retain the feeding funnel at a suitable location near the machine.

- Remove the feeding funnel.
- Insert the new feeding funnel until a click can be heard.

5.3 Inserting wire end ferrules

- Arrange the wire end ferrule reels as specified on the transport unit.
- Place the wire end ferrule reels (fig. 8, item 1) so that unrolling forwards from below is possible.

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Fig. 8: Wire end ferrule reel position

- Place the fixing pin with the small diameter at the front in the lower opening (fig. 9, item 2) of the transport unit.

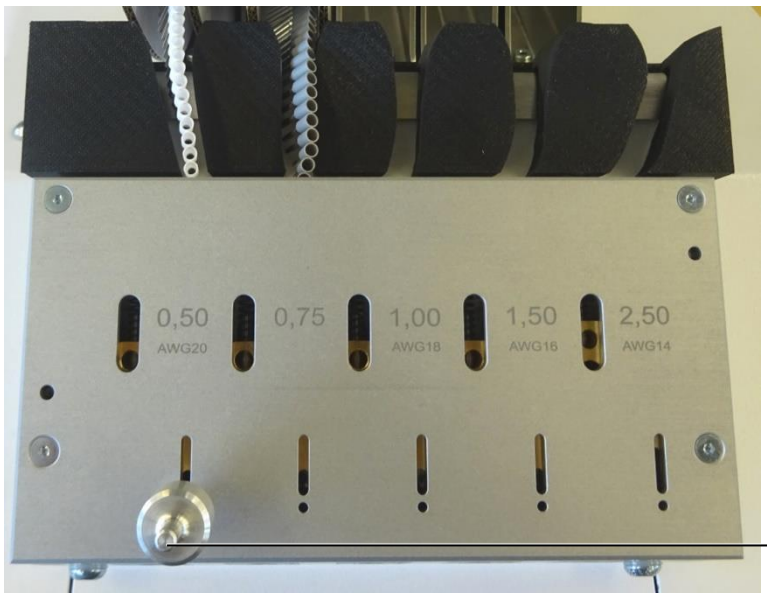

Fig. 9: Fixing pin at the bottom

- Insert the wire end ferrule belt in the transport unit until the first sleeve latches.
- Check for correct seating by pulling carefully at the wire end ferrule belt.
- Roll up the loose wire end ferrule belt.
- Remove the fixing pin.

5.4 Replacing the wire end ferrule reel

- Open the front flap to depressurise the machine.
- Place the fixing pin with the large diameter in the upper opening (fig. 10, item 1) of the transport unit.

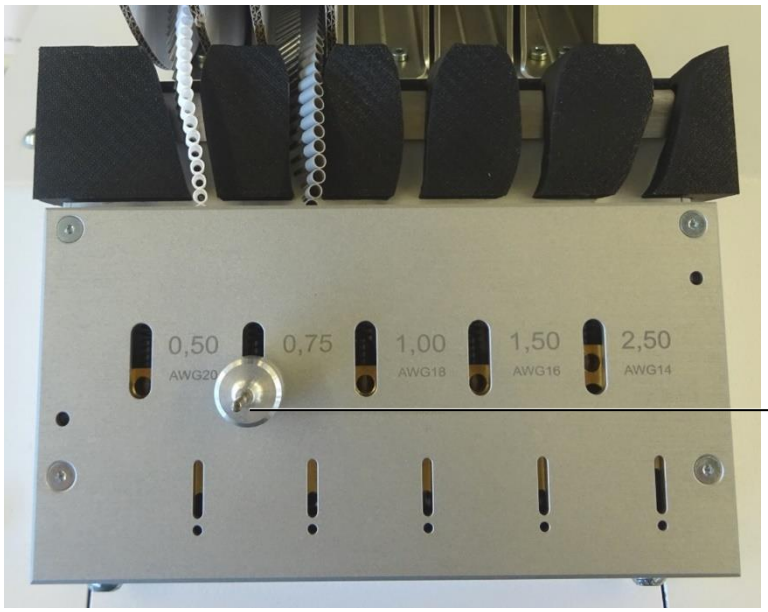

Fig. 10: Fixing pin at the top

- Push the fixing pin upwards completely.
- Pull the wire end ferrule belt out of the transport unit.
- Insert wire end ferrules, see section 5.3 "Inserting wire end ferrules".

5.5 Setting the stripping length

Each wire end ferrule length is assigned a letter:

– 10 mm = A
– 8 mm = B

- Check whether the associated letter (A or B) is set at the following four components:
  – Sleeve limit stop (fig. 3, item 3)
  – Tripping mechanism setting (fig. 3, item 8)
  – Stranded wires fixing unit (fig. 3, item 9)
  – Opening chock (fig. 3, item 1)

Set sleeve limit stop

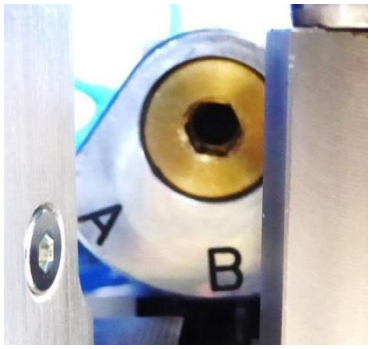

Fig. 11: Sleeve limit stop setting

- Swivel the tool unit to the right.
- Turn the setting wheel with the Allen key (5 mm) so that the desired value is at the bottom.

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Set the stripping length at the tripping mechanism

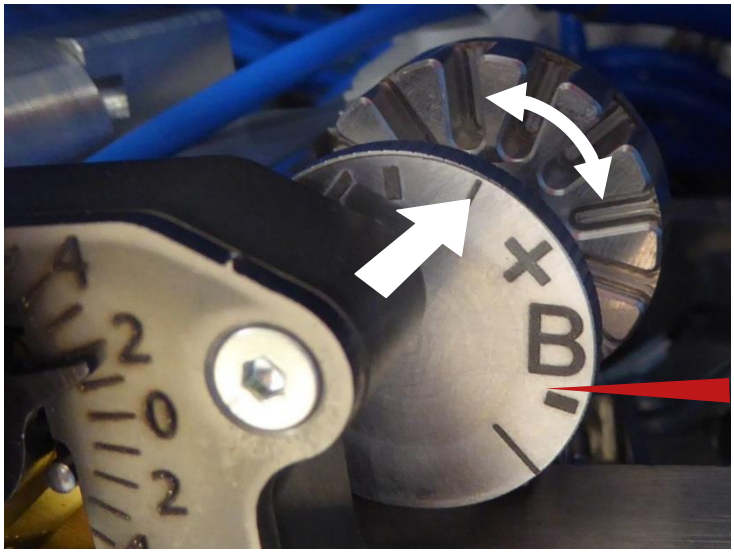

Fig. 12: Tripping mechanism setting (set: B)

This setting varies the stripping length.

- Press the setting wheel backwards and turn it so that the desired value is at the marked position.
- Release the setting wheel so that it latches.

You can make fine adjustments within the selected setting range (A or B):

- To increase the stripping length, turn in the "+" direction; to decrease the stripping length, turn in the "–" direction.

Set the stranded wire fixing unit

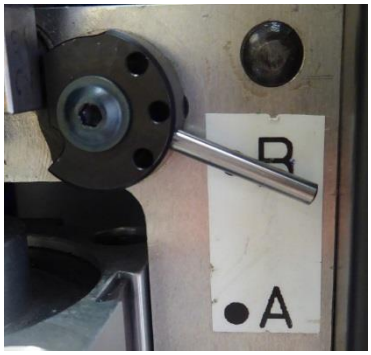

Fig. 13: Stranded wire fixing unit setting (set: B)

- Pull the stranded wires fixing unit (fig. 3, item 9) forwards and set the lever to the desired value.

Set the opening chock

Note:
The opening chock can be adjusted only when the stranded wire fixing unit is at the operating position (see section 7.5 "Maintaining the stranded wire fixing unit").

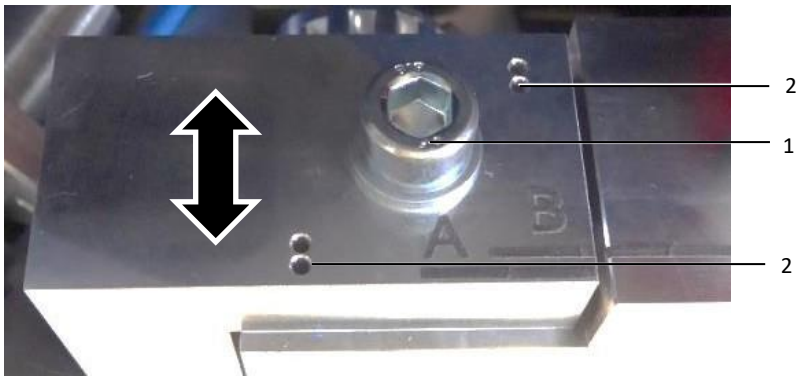

Fig. 14: Opening chock setting (set: B)

- Loosen the locking screw (fig. 14, item 1) so that the setting plate can be raised somewhat above the catch pins.
- Place the setting plate at the desired position. Whereby, a catch pin pair must match the appropriate openings (fig. 14, item 2).
- Retighten the locking screw (fig. 14, item 1).

5.6 Performing the insulation stripping test

You should perform an insulation stripping test every time the material to be processed has been changed.

- Switch on the mains switch.
- Set "Insulation stripping operation" operating mode on the touch display (see section 6.7 "Switching the operating mode").
- Insert a conductor for insulation stripping.
- Check the result:
  - Are all stranded wires undamaged?
  - Has the insulation been stripped straight and uniformly?
- Check with one of the uncrimped wire end ferrules whether the stripping length is correct and whether the selected combination of conductor and sleeve matches optimally.

5.7 Setting the cut depth

Depending on the hardness and thickness of the insulation, it may be necessary to modify the cut depth for the insulation stripping.

This requires that the cutter separation is changed by adjusting the two cams.

- To reach the cams, press the tool unit backwards and swivel it to the right.

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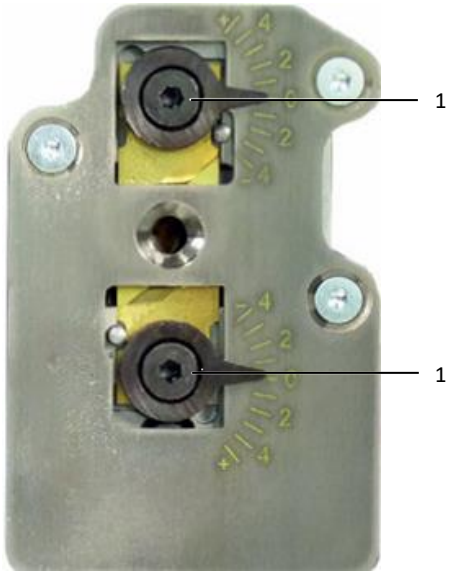

Fig. 15: Insulation stripping unit

- Loosen the two cam screws (fig. 15, item 1) (Allen key 2.5 mm).
- To decrease the cut depth, adjust the two cams in the "+" direction (larger cutter separation).
- To increase the cut depth, adjust the two cams in the "-" direction (smaller cutter separation).
- Retighten the two cam screws.

Note:
The settings for both cams must match.

5.8 Teaching the light barrier

The light barrier is set at the factory. If the light barrier needs to be adjusted, proceed as follows:

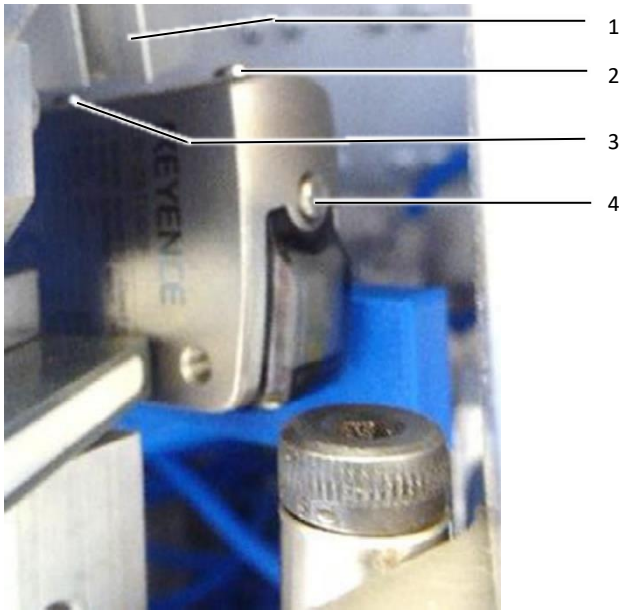

Fig. 16: Light barrier

- Push the sleeve separating blade (fig. 16, item 1) upwards.
- Unlock the light barrier by keeping the setting buttons (fig. 16, item 2 and 3) pressed concurrently for 3 seconds.
  "UNL" appears on the light barrier display.

- Remove the cover of the downpipe by loosening the knurled screw (fig. 17, item 1).

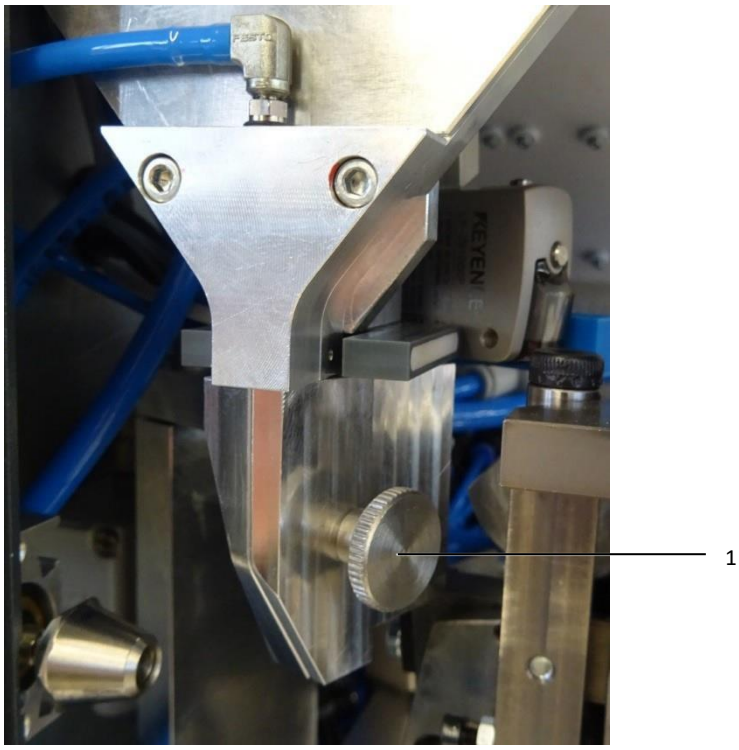

Fig. 17: Downpipe

- Pull the sleeve support table (fig. 18, item 1) forwards.

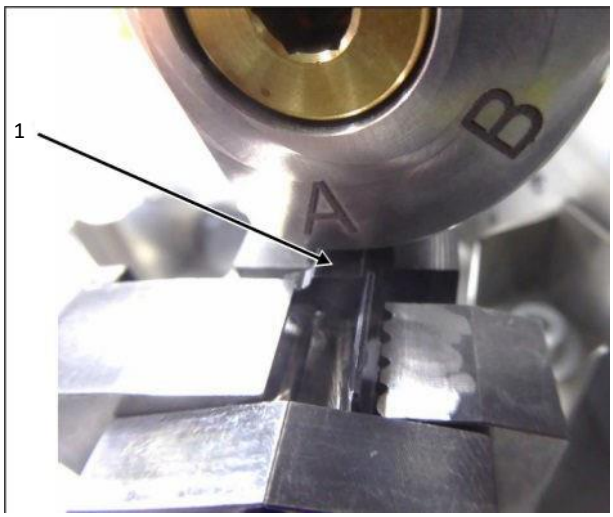

Fig. 18: Sleeve support table

- Push the tool slide backwards.
- Press the swivel unit, incl. the sleeve holding unit, to the left below the light barrier.
- Keep the setting button on the right side (fig. 16, item 4) pressed for 3 seconds until "SET" flashes in the display.
- Wait until "SET" extinguishes in the display. The light barrier is now adjusted.
- Set the value "20" (for fine adjustment, the sensitivity can be set in the range -99 to 999 with the setting buttons (fig. 16, item 2 and 3)).
- Lock the light barrier by keeping the setting buttons (fig. 16, item 2 and 3) pressed concurrently for 3 seconds. "LOC" appears on the display.
- The light barrier switches automatically to the operating state after 3 seconds.

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- Check whether a 0.5 mm² wire end ferrule is detected by pushing the support table backwards,
  - placing a wire end ferrule in the sleeve holding tongs,
  - pushing the tool slide backwards,
  - pressing the swivel unit, incl. sleeve holding unit, to the left below the light barrier.

6 Operating the automatic machine

6.1 Normal operation

- Insert the wire end ferrule reel.

Note:
- Before each switch on, check:
  - Does the automatic machine have no visible defects and damage?
  - Is the mains connection cable undamaged?
  - Is the compressed air hose undamaged?
  - Is the required operating pressure (5.5 bar) present?
  - Is the front panel closed?

The automatic machine must not be operated if any of these faults is present.
- Check whether the fault can be rectified with maintenance. Otherwise, contact your Rittal Service.

- Switch on the mains switch.

The valves actuate audibly and homing is performed. The touch display shows operational readiness.

6.2 Inserting a conductor

Note:
- Process only conductors cut cleanly. All stranded wires must terminate flush with the insulation; no stranded wire may be shortened or protrude.
- Ensure that the conductor end is inserted straight.

Fig. 19: Insert conductor correctly

- Insert a conductor in the feeding funnel.
  The material is fed slightly and machined automatically, whereby valve noises can be heard.
- Withdraw the machined conductor once the machining has completed (no further noises).

6.3 Touch display and operating menus

The touch display shows the current operating state. The lower part of the display is touch-sensitive.

The four control keys can be used to navigate through the program.

Fig. 20: Touch display, selection menu display

Key	Functions
↑	Select menu (move forwards) or increase value
↓	Select menu (move backwards) or decrease value
C	Exit menu (return to Menu 1)
E	Activate selected menu or set value

- To select an operating menu, press the arrow keys.
- To switch to the selected menu, press E.
- Within a menu, press the arrow keys to move to the desired item.
- To activate a selected item, press E.
- To exit the menu, press C.

Only the selection menu and menus 1 – 3 and 10 are relevant for operation.
Menus:
– Menu 1: Select cross-section
– Menu 2: Reset daily counter
– Menu 3: Switch operating mode (standard: crimping and insulation stripping)
– Menu 10: Set language
The other menus are provided only for the Service.

6.4 Stand-alone mode

If the automatic machine operates fully automatically, "External" is shown on the display. This means that the automatic machine operates only via the interface.
If it should be used as "Stand-alone" variant, proceed as follows:

- Disconnect the automatic machine from the interface.
- Switch the external communication to "0".
- Switch to Menu 7.
  – Press the E key in submenu 7.7 "Ex.Com" so that the cursor flashes. Change with the Down arrow key the value to "0".
  – Press the E key again; the cursor stops flashing.
- Restart the automatic machine. It can now be used autonomously, i.e. in stand-alone mode.

6.5 Select the cross-section (in stand-alone mode)

The selection menu appears when switched on.
The complete display is touch-sensitive in this menu.

0.50 AWG20	0.75	1.00 AWG18	
1.50 AWG16	2.50 AWG14	Ready 8	Status: Ready / insulation stripping / crimping daily counter
⬆	⬇	C	E

- To select the cross-section, press the appropriate field.
  The selected field is colour-highlighted.
- To reset the daily counter, press C for at least 5 seconds.
  The daily counter is set to zero.
- To switch to the production menu, press ⬆.

6.6 Resetting the daily counter

- Select Menu 2, unless it is already displayed.

2. Production menu		
Ready		Unit is operational
Daily count:	5	Daily counter: Number of items machined since the last reset.
Step:	1/0	
⬆	⬇ C	E

- To reset the daily counter, press C for at least 5 seconds.
  The daily counter is set to zero.

6.7 Switching the operating mode

- Select Menu 3.
  The current operating mode is displayed.

3. Insulation stripping menu		
Insulation stripping:	0	0 = Insulation stripping and crimping 1 = Insulation stripping only
⬆ ⬇ C E		

- To switch the operating mode, press E.
  The selected operating mode is active immediately.
- To return to the selection menu, press C or select a different menu with the arrow keys.

6.8 Displaying counters and the machining time

- Select Menu 4.

4. Op. data menu		
Tot. counter:	400002	Total counter: Number of completed work cycles
Mach. time:	1.946 s	Machining time: Duration of a work cycle (insulation stripping and crimping)
Service: –	1	Sign and service counter
⬆ ⬇ C E		

The total counter counts the work cycles during the complete service life of the automatic machine. The service interval of the automatic machine is 400,000 work cycles. The service counter counts down starting at 400,000. The service counter is 0 once 400,000 work cycles have been completed; the service message is displayed when the automatic machine is next started (see section 6.10 "Service display"). The service counter increments again; the negative sign indicates that a counting cycle has been completed. The service technician resets the service counter to 400,000.

6.9 Setting the language

- Select Menu 10.
- To activate the menu, press E.

10. Languages

⬆ ⬇ C E

- Press ⬇ until the desired language is displayed.
  The selected language is accepted immediately

EN

■ To return to the selection menu, press C or select a different menu with the arrow keys.

6.10 Service display

2. Production menu	
Ready	Unit is operational
——— Service ———	The service display appears after every 400,000 work cycles.
Step: 2/0	
⬆ ⬇ C E	

The service display flashes three times when the automatic machine is switched on. The automatic machine is then operational.

Note:
To retain the performance of the automatic machine as long as possible, you should observe the prescribed service intervals:
– Minor service after 400,000 work cycles
– Major service after 800,000 work cycles
■ Contact your responsible Rittal country representative.

6.11 Switching off the automatic machine

■ Switch off the automatic machine.
The valve release can be heard and the display is cleared.

Note:
You should remove waste residues after you have completed your work.

7 Cleaning and maintaining the automatic machine

7.1 Cleaning the automatic machine exterior

The automatic machine should be freed regularly from dust. If necessary, its exterior must be cleaned.

Note:
The cleaning of the interior is included in the maintenance; this may be performed only by instructed personnel.

■ Ensure that the automatic machine is switched off.

Attention!
The display can be damaged!
Unsuitable cleaning agents can scratch or damage the display.
■ Clean the display carefully either with a special cleaning cloth suitable for display surfaces or with a soft cloth and a screen cleaning agent.

■ Clean the surface of the automatic machine with a moist cloth. If required, use a soap-based cleaning agent. Never use aggressive cleaning agents or solvents.

7.2 Maintaining the automatic machine

To ensure problem-free operation, the described maintenance work (see section 7.3 "Maintenance schedule") must be performed in the specified intervals.

Warning!
Risk of fatality due to electric shock!
Uninsulated parts can be touched when working inside the automatic machine.

- Switch off the automatic machine.
- Remove the compressed air hose first from the compressed air source and then from the maintenance unit.
- Disconnect the mains connector.
- Open the front panel and place it down carefully.

Note:
Keep the following at hand for maintenance work:

– Allen key set
– Brush and cleaning cloth
– Lubricant
  – PTFE oil
  – Lubricating grease (suitable for roller bearings)

7.3 Maintenance schedule

Maintenance point	Interval / maintenance task	See section
	Daily	
1	Check machine for waste residues	
	Weekly	
2	Clean the conductor holding tongs	7.4
3	Stranded wire fixing unit: Clean the feeding funnel	7.5
4	Perform maintenance on the insulation stripping unit, check the insulation stripping blades	7.6
6	Clean the interior	7.8
	Monthly	
2	Conductor holding tongs: Oil the pivot point and the contact surfaces	7.4
3	Stranded wire fixing unit: Oil the pivot point and the rollers	7.5
5	Crimping tool: Rollers and sleeve holding tongs	7.7
	Quarterly	
7	Tool slide	7.9

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Maintenance point	Interval / maintenance task	See section
8	Maintain the transport unit	7.10
	When required	
9	Compressed air maintenance unit: Drain the condensate and clean/replace the filter	7.11

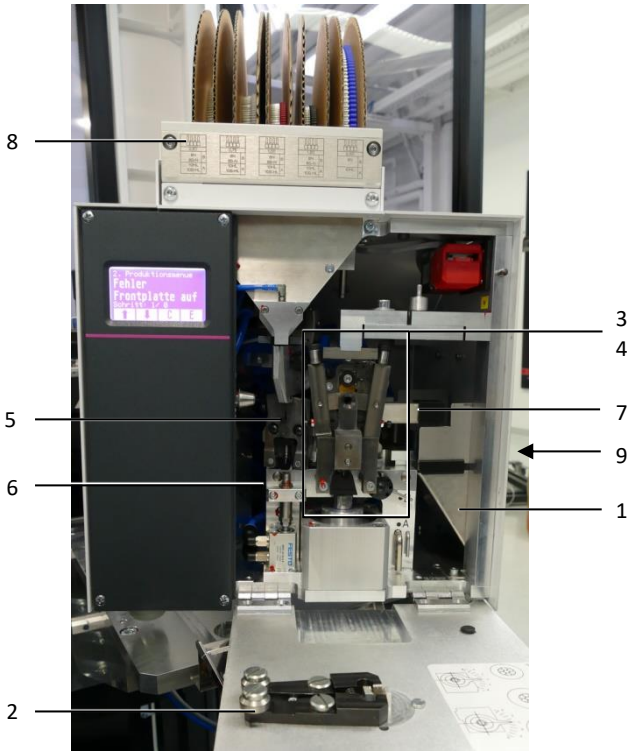

Fig. 21: Overview of the maintenance points

7.4 Maintaining the conductor holding tongs

■ Clean the conductor holding tongs with a brush.

Additional monthly maintenance:

■ Oil the conductor holding tongs at the pivot points (fig. 22, item 1) and at the contact surfaces (fig. 22, item 2) of the rollers.

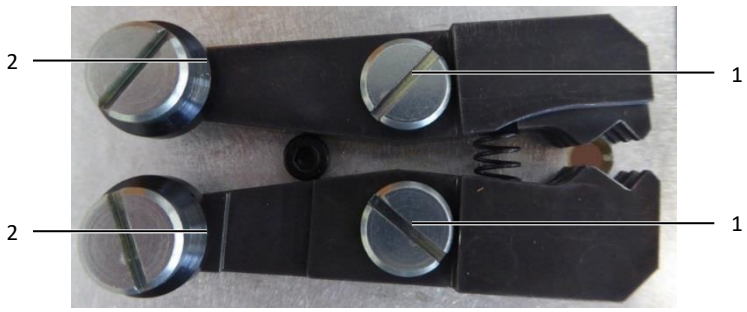

Fig. 22: Conductor holding tongs

7.5 Maintaining the stranded wire fixing unit

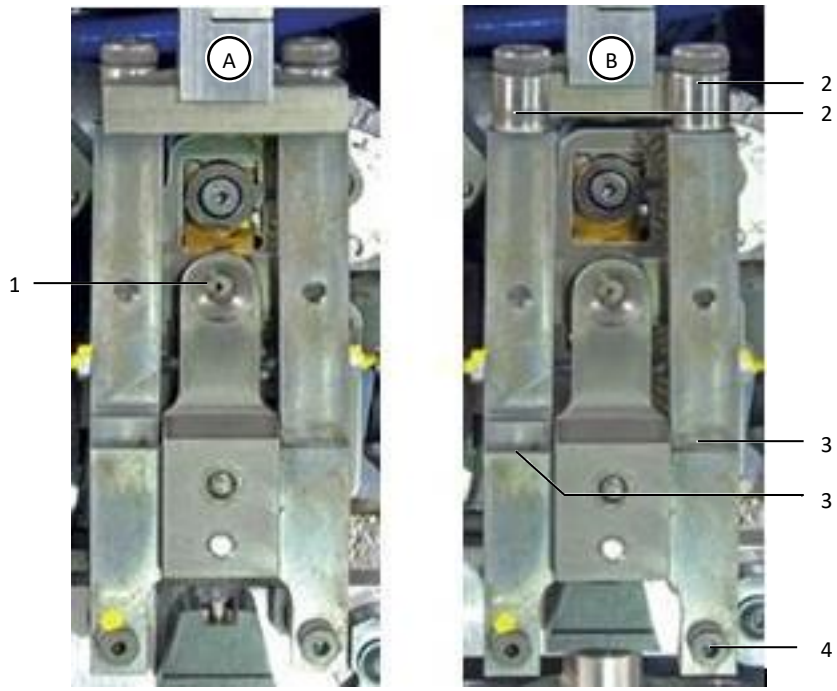

Fig. 23: The stranded wire fixing unit at the operational position (A) and pulled forwards (B)

- Clean the feeding funnel (fig. 23, item 1) with a brush.
- If required, use a soft cloth and methylated spirits.

Additional monthly maintenance:

- Pull the stranded wire fixing unit forwards (fig. 23, item B).
- Check whether the rollers (fig. 23, item 2) are smooth-running.
  If required, oil the pivot points of the rollers.
- Oil the pivot points (fig. 23, item 3) of the stranded wire fixing unit.

7.6 Maintaining the insulation stripping unit

- Ensure that the stranded wire fixing unit is at the front position.
- Push the tool unit backwards and swivel it to the right.

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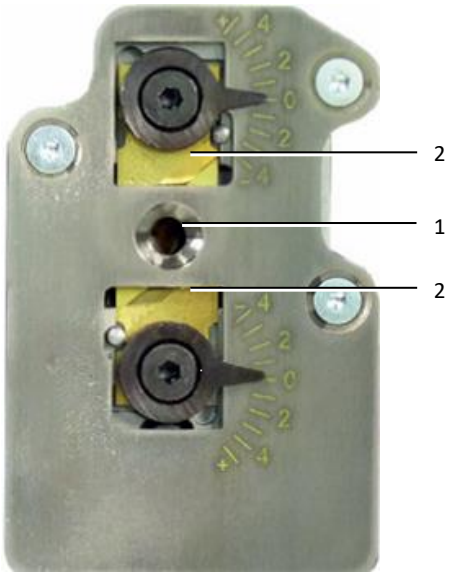

Fig. 24: Insulation stripping unit

- Clean the area around the hole (fig. 24, item 1) with a brush.
- If required, use a soft cloth and methylated spirits.
- Check the cutters (fig. 24, item 2). If required, replace the blades (see section 8.3 "Replacing the insulation stripping blade").

7.7 Maintaining the crimping tool

To reach the crimping tool, you must dismantle the stranded wire fixing unit.

- Ensure that the stranded wire fixing unit is at the front position (fig. 23, item B).
- Remove the right lower screw of the stranded wire fixing unit (fig. 23, item 4).
- Remove the stranded wire fixing unit forwards carefully.
- Tilt the stranded wire fixing unit to the side and place it down carefully.

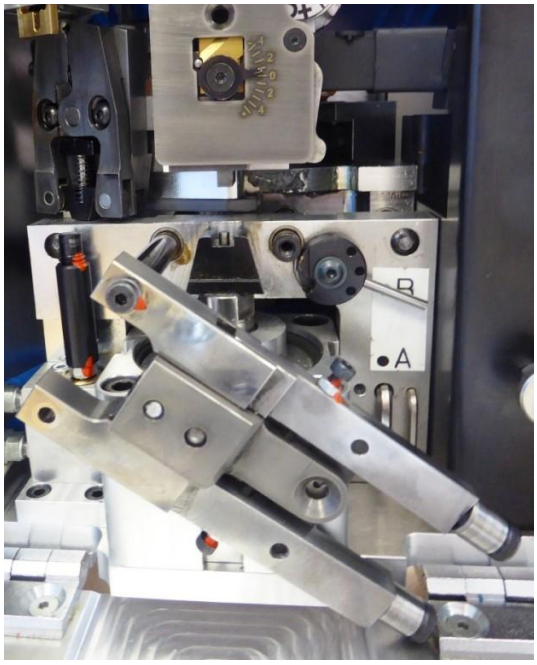

Fig. 25: Stranded wire fixing unit dismantled

Additional monthly maintenance:

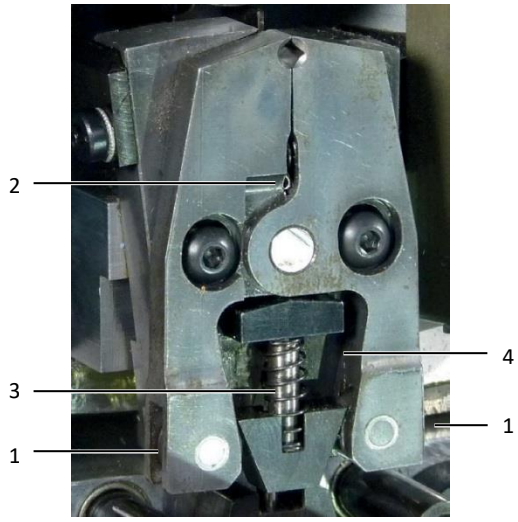

Fig. 26: Crimping tool

- Check whether the rollers (fig. 26, item 1) on the crimping tool are smooth-running.
- Check whether the rollers (fig. 26, item 2) on the sleeve holding tongs are smooth-running.
- If required, oil both locations.
- Oil the guide pin (fig. 26, item 3) of the sleeve holding unit.
- Oil the side running surfaces (fig. 26, item 4) of the sleeve holding unit.
- Reinsert the stranded wire fixing unit and tighten it.

7.8 Cleaning the interior

- Remove any waste residues.
- Clean the interior of the automatic machine with a brush and, when required, with a vacuum cleaner.

Note:
- Never use compressed air for cleaning the interior, because small parts (e.g. stripped insulation scrap) may become unreachable inside in the automatic machine. Malfunctions and operational failure can result.

7.9 Maintaining the tool unit

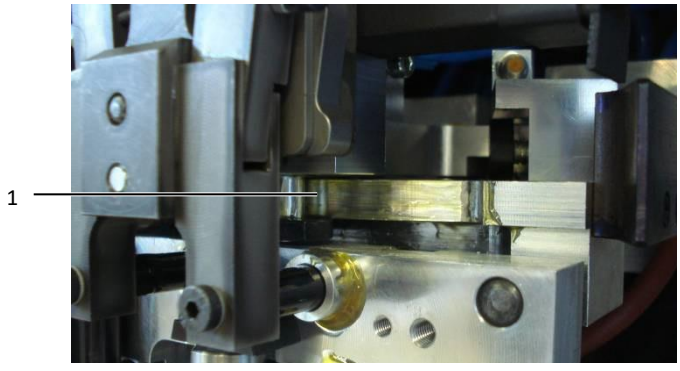

Fig. 27: Tool slide

Quarterly:

- Pull the stranded wire fixing unit forwards.
- Lubricate the contact surface (fig. 27, item 1).
- Return the stranded wire fixing unit to its original position.

7.10 Maintaining the transport unit

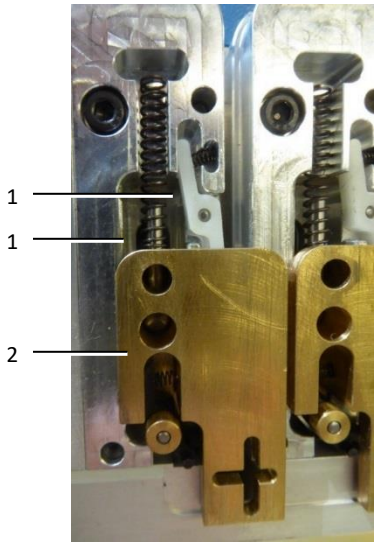

Fig. 28: Transport unit

- Remove the wire end ferrule reel (see section 5.1 "Setting the reel holder").
- Loosen the screws and remove the cover (fig. 21, item 8)
- Apply oil very sparingly to the aluminium on both sides (fig. 28, item 1) of the guide groove.
- Move the brass slide forwards and backwards (fig. 28, item 2) to distribute the oil.
- Refasten the cover.

7.11 Maintaining the compressed air maintenance unit

Caution!
Risk of injury by electric shock!

- Ensure that the automatic machine is switched off and the mains connector is disconnected.

Caution!
Risk of injury from a slewing compressed air hose!

- Ensure that the compressed air hose is disconnected from the compressed air source.

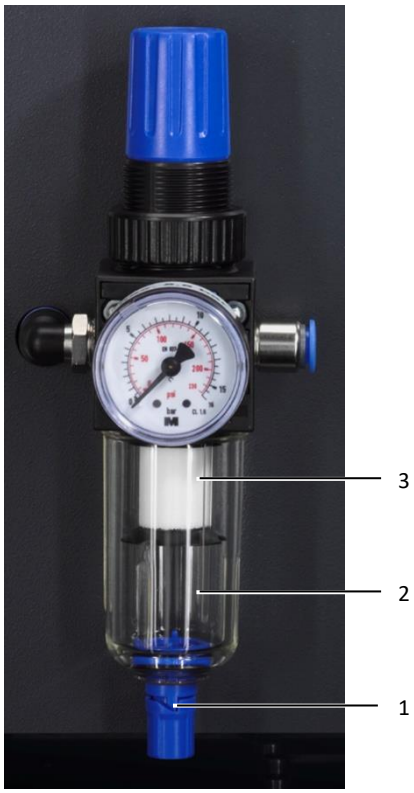

Fig. 29: Compressed air maintenance unit

When required:

- To drain the condensate, press the drain plug (fig. 29, item 1) upwards.
- To replace the filter, unscrew the condensate container (fig. 29, item 2) and screw out the filter (fig. 29, item 3).
- Insert a new filter and retighten the condensate container.

8 Troubleshooting

Note:
If a malfunction cannot be rectified with the measures described here, contact Rittal Service.

8.1 Malfunction table

Malfunction	Possible cause	Recommended measure
The automatic machine cannot be switched on.	The power supply is interrupted	■ Check the mains cable and the mains connection. ■ Check the fuses.
No start for inserted conductor.	The start sensor (S1) is blocked by stripped insulation scrap	■ Open the front panel. ■ Swivel the tool unit to the right. ■ Pull the stranded wire fixing unit forwards. ■ Remove the scrap from the insulation stripping unit. ■ Return all components to their initial position.
	Conductor inserted incorrectly	■ Insert the conductor straight.
The wire is stripped only of its insulation but not crimped.	Operating mode "Only insulation stripping" is set	■ Change the operating mode to Standard (setting "0" in Menu 3).

8 Troubleshooting

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Malfunction	Possible cause	Recommended measure
	The settings on the automatic machine do not match the associated sleeve	■ Check whether the settings for sleeve cross-section and crimping length match the associated sleeve.
	No wire end ferrule reel inserted	■ Insert a wire end ferrule reel.
Increased rejects	Check machine for waste residues	■ Remove any waste residues
	Insulation stripping blades damaged or installed incorrectly	■ Check the seating of the insulation stripping blades (see section 7.6 "Maintaining the insulation stripping unit"). ■ Correct the seating of the insulation stripping blades or replace them (see section 8.3 "Replacing the insulation stripping blade").
	Stripped insulation scrap between the tool unit and the right limit stop	■ Remove the stripped insulation scrap.
	The second sleeve is located in the sleeve holding unit	■ Remove the sleeve.
	Sleeve holding unit not in the correct position	■ Correct the position of the sleeve holding unit (see section 8.5 "Changing the position of the sleeve holding unit").

8.2 Wearing parts

Product	Model No.
Insulation stripping blade, titanium	4050.466

8.3 Replacing the insulation stripping blade

Warning!
Risk of fatality due to electric shock!
Uninsulated parts can be touched when working inside the automatic machine.
- Switch off the automatic machine.
- Remove the compressed air hose from the compressed air source.
- Disconnect the mains connector.
- Open the front panel and place it down carefully.

Caution!
Risk of injury from sharp blades!
- Use tweezers to replace the blades.
- Dispose of the removed blades in a special container.

Note:
All fitted blades must be replaced for each cutter change.

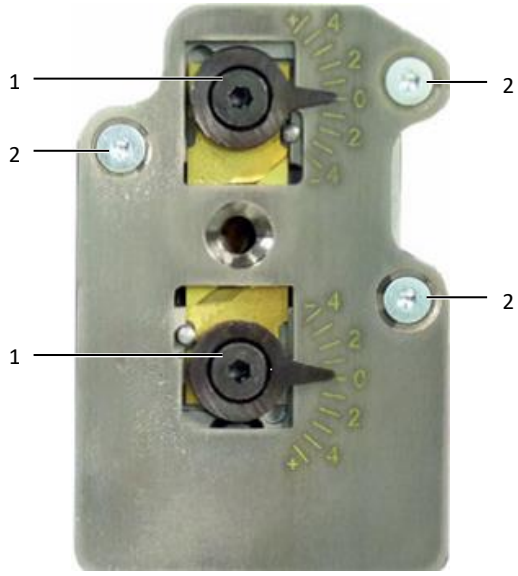

Fig. 30: Insulation stripping unit

- Remove both cams (fig. 30, item 1) (Allen key 2.5 mm).
- Loosen the fastening screws (fig. 30, item 2) (Allen key 2.0 mm) and remove the cover.
- Replace all existing blades with new ones.

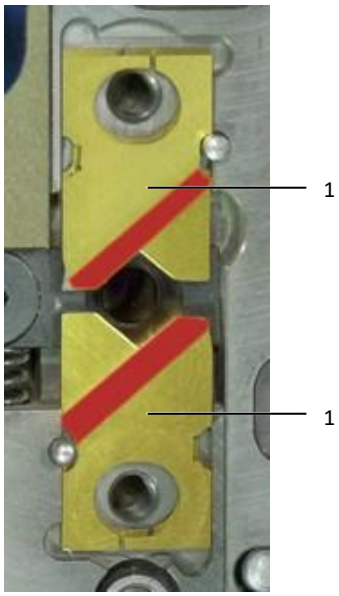

Fig. 31: Inserting blades

- Place each blade-pair together so that the angled edges (marked red in fig. 31) point outwards.
- Place both blade-pairs in the retainer.
- Refasten the cover.
- Fasten both cams so that they are located in position "0".
- Perform an insulation stripping test (see section 5.5 "Setting the stripping length").

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8.4 Replacing sleeve separating blades

- Remove the wire end ferrule reel (see section 5.3 "Inserting wire end ferrules").
- Loosen the screws and remove the front part of the cover (fig. 21, item 8).
- Push the sleeve separating blade cylinder upwards.

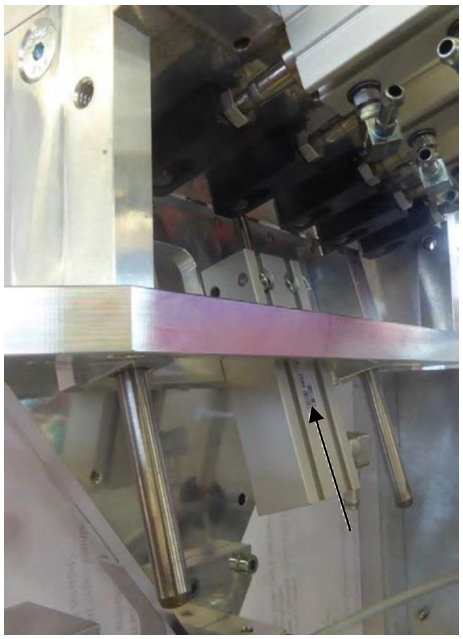

Fig. 32: Sleeve separating blade cylinder

- Replace the cutters.
- Pay attention to the flush alignment of the cutters to the lower edge (fig. 33)

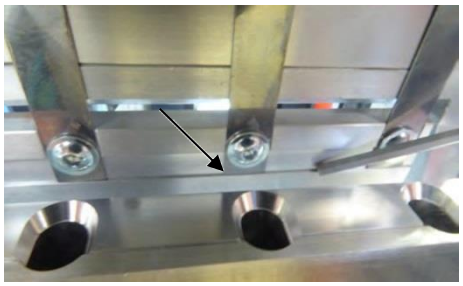

Fig. 33: Lower edge alignment

8.5 Changing the position of the sleeve holding unit

- Disconnect the automatic machine from the air supply.
- Ensure that the automatic machine is switched off and remove the mains connector
- Remove the right side panel.
- Place a 0.5 mm² sleeve in the sleeve holding unit (see section 3).
- Press the tool slide backwards.
- Swivel the swivel plate to the right buffer.
- Pull the tool slide forwards.
- Check the position of the sleeve for the stranded wire fixing unit.
- Loosen the nut (fig. 34, item 1)

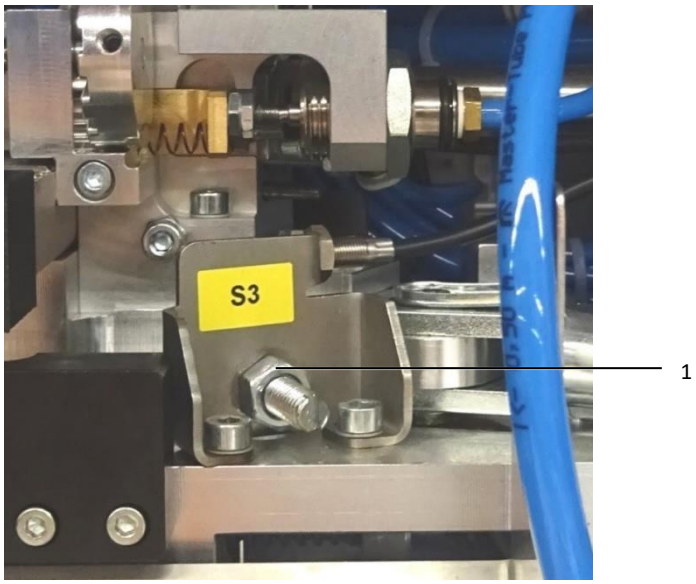

Fig. 34: Sleeve holding unit attachment

- Correct the position of the sleeve holding unit until the sleeve in the holding tongs is aligned with the stranded wire fixing unit (fig. 35, item 1).

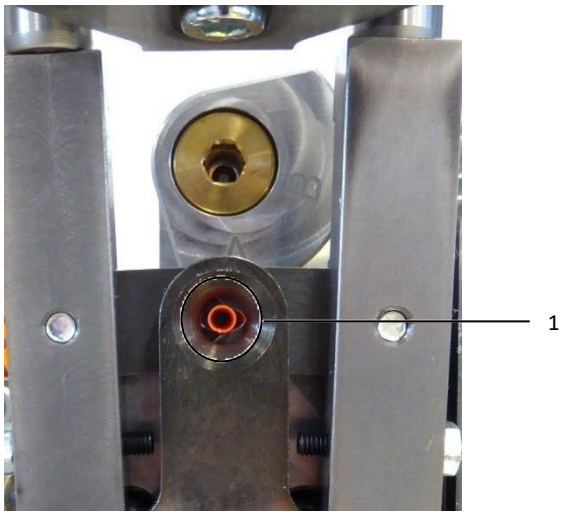

Fig. 35: Sleeve and stranded wire fixing unit are aligned

- Retighten the nut.
- Mount the side panel again.
- Perform a test crimping.

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8.6 Replacing fuses

- Ensure that the automatic machine is switched off.
- Remove the mains connector.

Fig. 36: Opening the fuse box

- Lever the fuse box (fig. 36, item 1) with a flat screwdriver from the mains filter unit.
- Replace both fuses with new ones (2 x T2AH250V).
- Insert the fuse box back into the mains filter unit.

9 Decommissioning and disposal of the automatic machine

9.1 Decommissioning the automatic machine

- Switch off the automatic machine.
- Disconnect the mains connector.
- Remove the compressed air hose from the compressed air source.
- Remove the compressed air hose from the maintenance unit.
- Open the front panel.
- Remove the wire end ferrule belt from the transport unit.
- Turn the wire end ferrule reel counter-clockwise until the wire end ferrule belt has been removed completely from the machine.
- Remove the wire end ferrule reel.
- Remove any waste residues.
- Close the front panel.
- Pack the automatic machine in the original packaging.

The automatic machine is now prepared for transport and disposal, if necessary.

9.2 Disposing of the automatic machine

- Decommission the automatic machine as described in section 9.1 "Decommissioning the automatic machine".
- Ensure that the automatic machine is disposed of in accordance with the national and local regulations.

The disposal of the automatic machine as household refuse is not permitted.
The automatic machine must be disposed of environmental-conform and correctly.

Note:
You can send the product to Rittal for disposal. Contact your responsible country representative.

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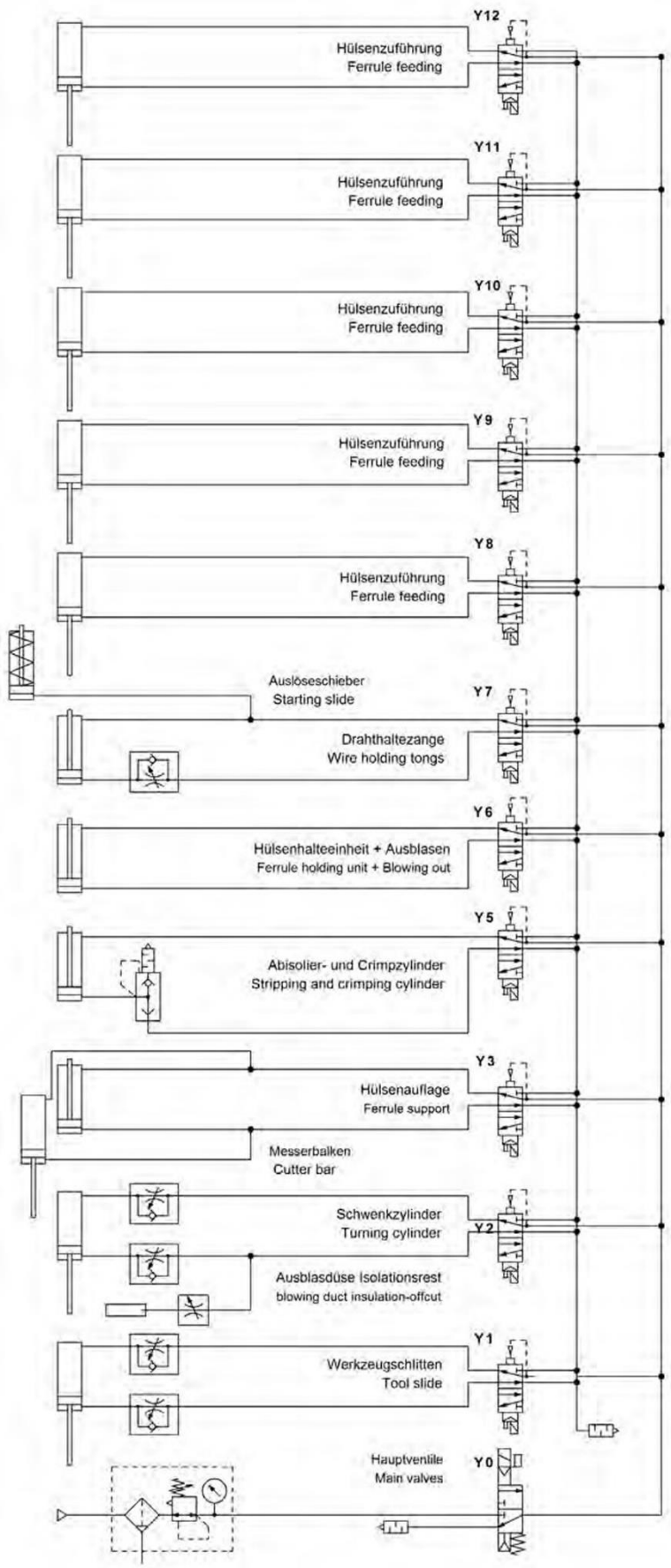
10 Pneumatic diagram



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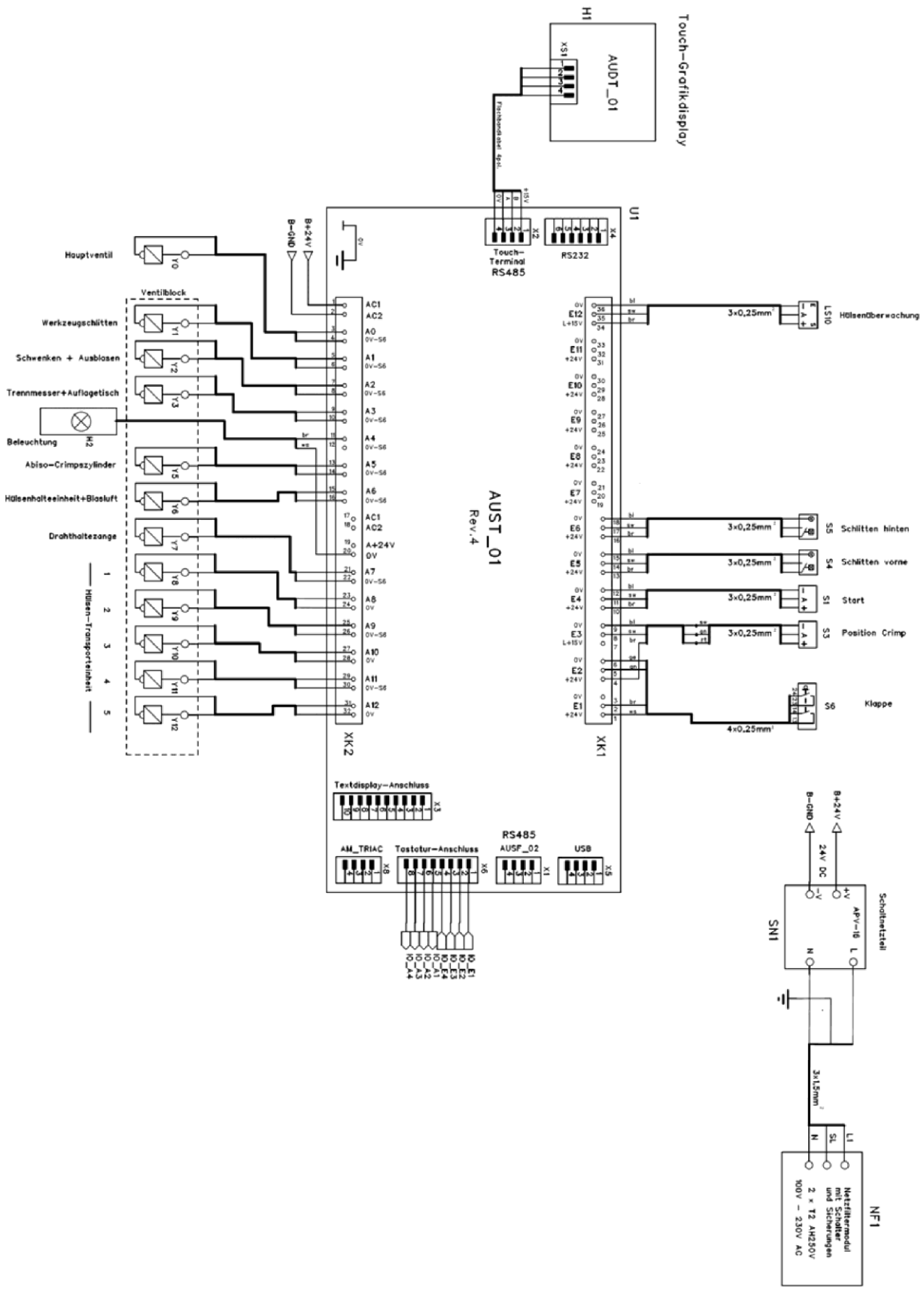
11 Electric diagram



11 Electric diagram

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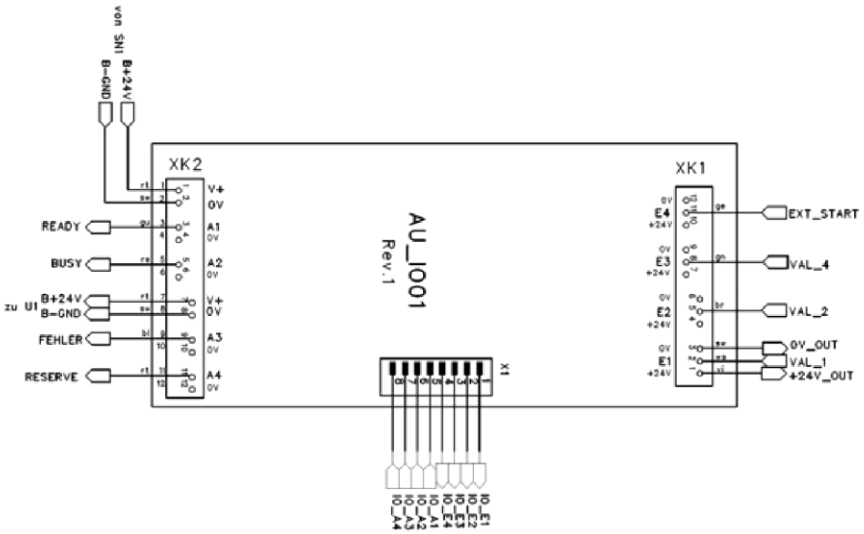

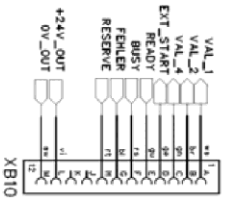

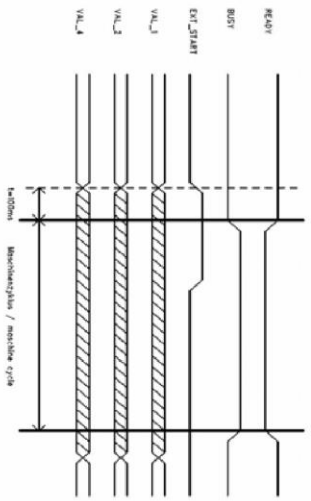

Timing diagram

VAL_1	VAL_2	VAL_4	
1	0	0	0.50 mm² / AWG20
0	1	0	0.75 mm²
1	1	0	1.00 mm² / AWG18
0	0	1	1.50 mm² / AWG16
1	0	1	2.50 mm² / AWG14
1	1	1	Abisolieren / stripping

12 Conformity

Vereinfachte EU-Konformitätserklärung / Simplified EU Declaration of Conformity

Wir
We

Rittal GmbH & Co. KG, Auf dem Stützelberg, 35745 Herborn

erklären hiermit, dass die Produkte
hereby declare that the products

Crimpautomat RC-I – Crimp machine RC-I AS 4051.020

(Artikel gemäß dieser Anleitung /
Types referenced in this manual)

folgenden Richtlinien entsprechen:
conform to the following directives:

2006/42/EG Maschinenrichtlinie – 2006/42/EC Machinery Directive
2014/30/EU EMV-Richtlinie – 2014/30/EU EMC Directive
2011/65/EU RoHS-Richtlinie – 2011/65/EU RoHS Directive

Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese EU-Konformitätserklärung ihre Gültigkeit.
This EU declaration of conformity shall become null and void when the assembly is subjected to any modification that has not met with our approval.

Die vollständige und unterschriebene EU-Konformitätserklärung erhalten Sie auf der Produktseite der Rittal Homepage www.rittal.com.
The complete and signed EU declaration of conformity is available at the product site of Rittal homepage www.rittal.com.

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