



USER'S MANUAL :
WERI MINI APPLICATOR

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WÜRTH ELEKTRONIK MORE THAN YOU EXPECT



 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 1 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	


Table of Content

1	List of part numbers and application.....	2
2	Important warnings	4
3	Identification.....	6
4	Technical data.....	7
5	Installation.....	7
5.1	<i>Installing the mini applicator inside the press.....</i>	<i>7</i>
5.1.1	<i>Rubber Protection</i>	<i>7</i>
5.1.2	<i>Positioning on crimping machine equipped with quick release baseplate.....</i>	<i>8</i>
5.1.3	<i>Positioning on crimping machine equipped with screw baseplate</i>	<i>8</i>
5.1.4	<i>Head Centering.....</i>	<i>9</i>
5.2	<i>Inserting the terminals into the mini applicator.....</i>	<i>9</i>
5.2.1	<i>Ring adjustment and feeding point of the terminal.....</i>	<i>9</i>
5.2.2	<i>Terminal insertion for Side-feed Applicator.....</i>	<i>10</i>
5.2.3	<i>Terminal insertion for End-feed Applicator.....</i>	<i>11</i>
5.3	<i>Oil Pot option</i>	<i>12</i>
5.3.1	<i>Installation of end-feed lubricator</i>	<i>12</i>
5.3.2	<i>Oil charge.....</i>	<i>13</i>
5.3.3	<i>Use</i>	<i>13</i>
5.4	<i>Preliminary test.....</i>	<i>14</i>
6	Adjustments.....	15
6.1	<i>Crimping heights (trained operator).....</i>	<i>15</i>
6.2	<i>Feeding (qualified technician only).....</i>	<i>16</i>
6.3	<i>Crimping axis (qualified technician only).....</i>	<i>17</i>
6.4	<i>Bellmouth and cut-off tab (qualified technician only)</i>	<i>17</i>
7	Stroke setting (qualified technician only)	18
8	Maintenance (trained operator)	19
8.1	<i>Cleaning and lubrication</i>	<i>19</i>
8.2	<i>Storage</i>	<i>19</i>
9	Troubleshooting.....	20

 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 2 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

1 List of part numbers and application

Serie	Pitch	Applicator Part Number	Terminal Part Number	Wire Range
WR-WTB	3.96 mm	600 645 401	645 001 137 22	AWG 22-18
			645 101 137 22	
	2.54 mm	600 619 401	619 001 137 22	AWG 28-22
			619 101 137 22	
	2.54 mm Intercom	600 661 401	661 001 137 22	AWG 28-22
			661 101 137 22	
	2.50 mm	600 646 401	646 001 137 22	AWG 28-22
			646 101 137 22	
	2.00 mm	600 620 401	620 001 137 22	AWG 28-24
			620 101 137 22	
	2.00 mm Dual Row	600 624 401	624 001 137 22	AWG 28-22
			624 101 137 22	
	1.50 mm	600 648 401	648 001 137 22	AWG 30-28
			648 101 137 22	
WR-MPC3	3.00 mm	600 662 403	662 003 137 22	AWG 24-20
			662 103 137 22	
		600 662 406	662 006 137 22	AWG 30-26
			662 106 137 22	
		600 662 401	662 001 137 22	AWG 24-20
			662 101 137 22	
		600 662 404	662 004 137 22	AWG 30-26
			662 104 137 22	
		600 662 401	662 002 137 22	AWG 24-20
			662 102 137 22	
		600 662 404	662 005 137 22	AWG 30-26
			662 105 137 22	

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 3 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

Serie	Pitch	Applicator Part Number	Terminal Part Number	Wire Range
WR-MPC4	4.20 mm	600 649 405	649 005 137 22	AWG 16
			649 105 137 22	
		600 649 406	649 006 137 22	AWG 24-18
			649 106 137 22	
		600 649 407	649 007 137 22	AWG 28-22
			649 107 137 22	
		600 649 405	649 008 137 22	AWG 16
			649 108 137 22	
		600 649 406	649 009 137 22	AWG 24-18
			649 109 137 22	
600 649 407	649 000 137 22	AWG 28-22		
	649 100 137 22			
WR-MPC5	5.70 mm	600 657 401	657 305 137 22	AWG 16-14
		600 657 402	657 306 137 22	AWG 12
WR-NPC2	2.50 mm	600 626 401	626 101 137 22	AWG 26-24
			626 201 137 22	
			626 105 137 22	
			626 205 137 22	
		600 626 402	626 102 137 22	AWG 22-20
			626 202 137 22	
			626 106 137 22	
			626 206 137 22	
WR-RAST5	5.00 mm	600 637 401	637 301 3100 00	AWG 18-14
		600 637 402	637 301 3200 00	AWG 22-20

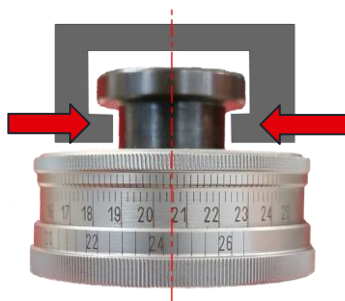
 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
Users_Manual_WERI_Mini_Applicator		Page 4 of 23

2 Important warnings

Verify the press shut height setting by means of a shut height gauge: 135.8 mm at bottom dead center.



Verify that the press and the mini applicator's axis are perfectly in line.



 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 5 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

Set the top ring of the continuous adjusting head in accordance with the data on the identification plate.


AWG	INDEX	CHR



After having installed the mini applicator, cycle manually the press by means of a spanner to check that:

- mini applicator runs smoothly without sticking in any way.
- terminal is correctly placed on the anvil, in line with the same, and the other crimping and cutting parts

NOTE: each mini applicator is dedicated only to the terminal(s) written on its identification plate. Each mini applicator comes in already configured with respect to that (those) terminal(s). After installation only the crimping heights need to be adjusted to the wire to be crimped. Any other operation / adjustment / setting should only be made and recorded by a qualified and experienced technician.

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 6 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

3 Identification

TER.		
MOD.		
AWG	INDEX	CHR

TER.: terminal part number.

MOD.: mini applicator part number.

AWG: cross-sectional area of wire conductor (American Wire Gauge).

INDEX: position of the top adjusting ring to obtain the corresponding conductor crimping height (CHR).

CHR: conductor crimping height.

The mini applicator serial number is found on its core body.



 <div>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</div>	<div>User's Manual:</div> <div>WERI Mini Applicator</div>	Revision 3.1 Valid from 2025-07-02
		Page 7 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

4 Technical data

Shut height: 135.8 mm

Working Stroke: 40 / 30 cm (depending on cam setup)

Feeding: mechanical

Weight: 4.0 kg

Dimensions: 155 × 150 × 110 mm for Side-Feed and 80 × 150 × 200 mm for End-Feed

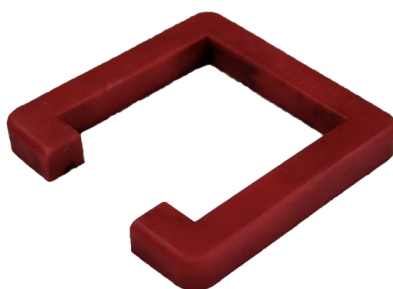
5 Installation


5.1 Installing the mini applicator inside the press

5.1.1 Rubber Protection

Make sure to turn off the press before performing the following steps.

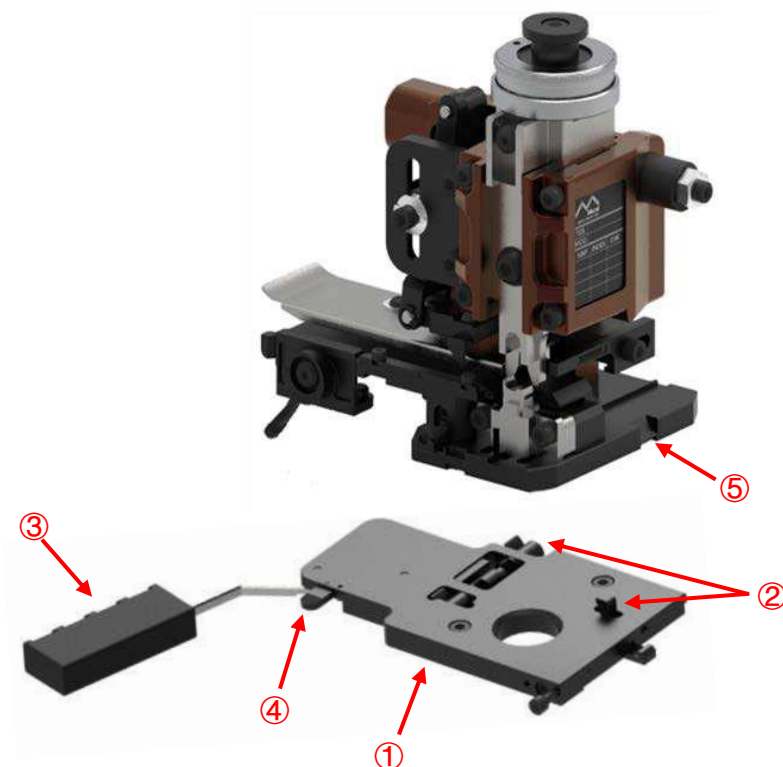
Mini applicators are delivered with a rubber spacer inserted between the continuous adjusting head and the body for protection during transportation. Remove it when installing the applicator.



 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 8 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

5.1.2 Positioning on crimping machine equipped with quick release baseplate

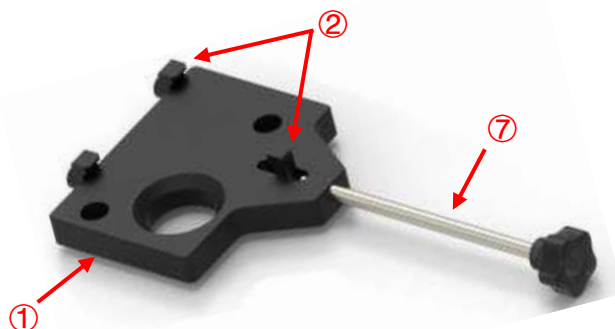
Place the applicator over the baseplate of the crimping machine ①, take care to align the pawls ② to the interlocks at the base of the applicator ⑤. Turn the lever ③ clockwise until the trigger ④ locks. Then make sure that it has locked correctly, check that applicator is coplanar to the fixing base ① and well locked to it.



5.1.3 Positioning on crimping machine equipped with screw baseplate

Place the applicator over the baseplate of the crimping machine ①, take care to align the pawls ② to the interlocks on the base of the applicator ⑤ and tight the knob ⑦ clockwise until the pawl ② locks against the interlock ⑤.

Then make sure that it has locked correctly, check that applicator is coplanar to the fixing base ① and well locked to it.



5.1.4 Head Centering

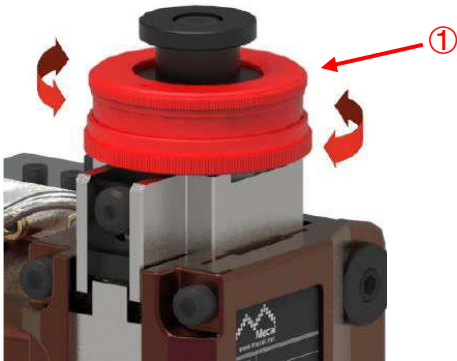
Verify the centering of the head ⑥ with the "T" shank ⑧, or rather the alignment of the applicator axis with the crimping machine axis.





5.2 Inserting the terminals into the mini applicator


5.2.1 Ring adjustment and feeding point of the terminal

With reference to the identification plate, position the top ring ① of the continuous adjusting head according to the settings related to the maximum wire cross-section allowed.



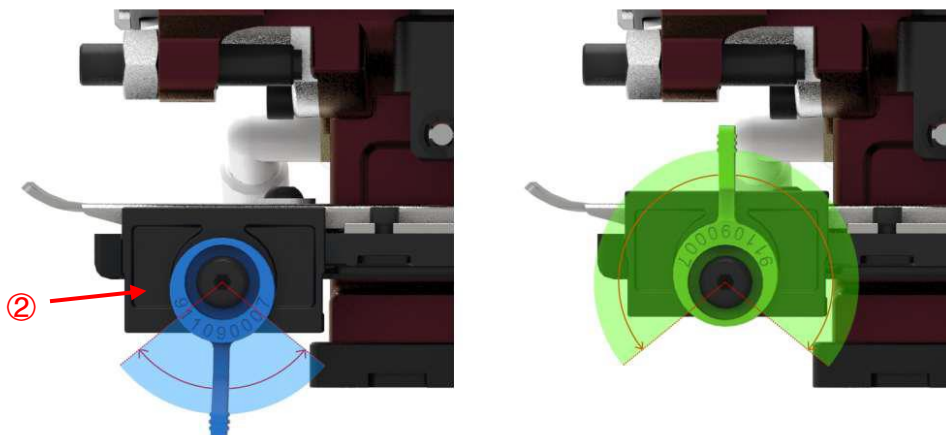
Depending on terminal orientation, terminal will not be carried through the same area.

SIDE FEED TERMINAL	END FEED TERMINAL
	
Terminal carried through the hole of the strip	Terminal carried through the terminal wings. It can be Insulator or Wire wings depending on the terminal and applicator

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
Users_Manual_WERI_Mini_Applicator		Page 10 of 23

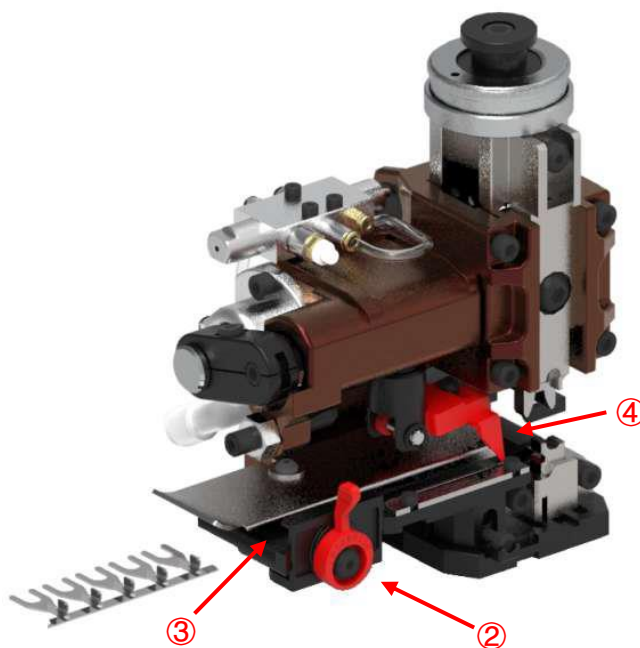
5.2.2 Terminal insertion for Side-feed Applicator


Turn lever ② from the working position (blue angle) to the release position (green angle).



Place the terminals in the guide ③.

Lift the pawl ④ and at the same time push the terminal to the correct position, then release the pawl taking care to position it at the terminal feed point (strip hole). Then turn the lever ② into the working position (blue angle).



 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 11 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

5.2.3 Terminal insertion for End-feed Applicator

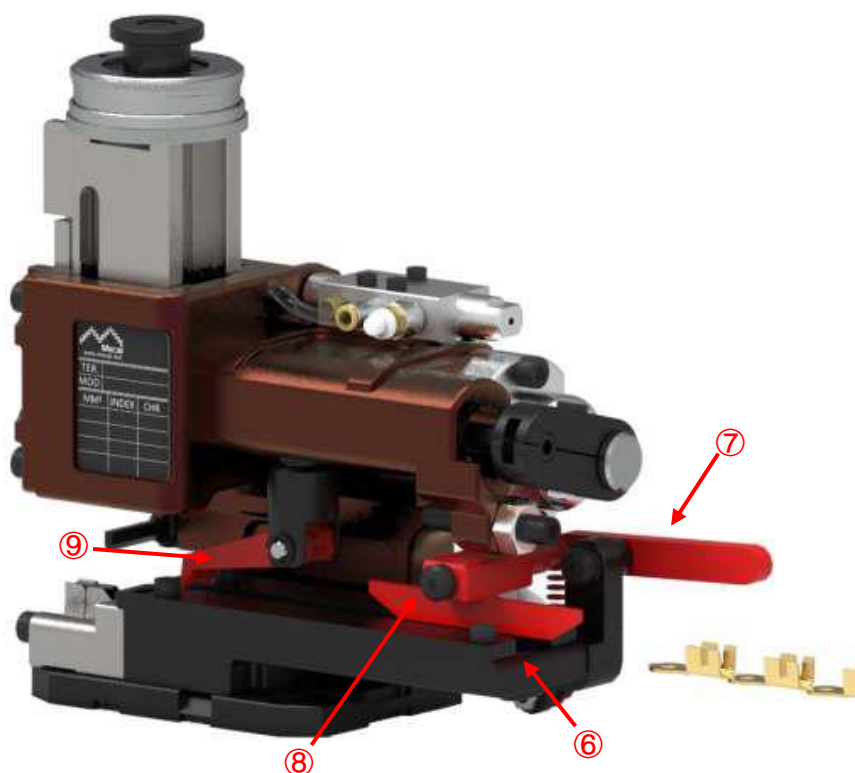
Insert the terminal to be crimped into the guide ⑥, use the lever ⑦ to raise the clutch ⑧ and, at the same time, lift the pawl ⑨.


Push the terminal to the correct position, then release the pawl, taking care to hook it to the terminal feed point (terminal wings).

600637401 : Insulation wings feeding point

600637402 : Wire wings feeding point

Release the lever ⑦, moving the clutch over the terminal.



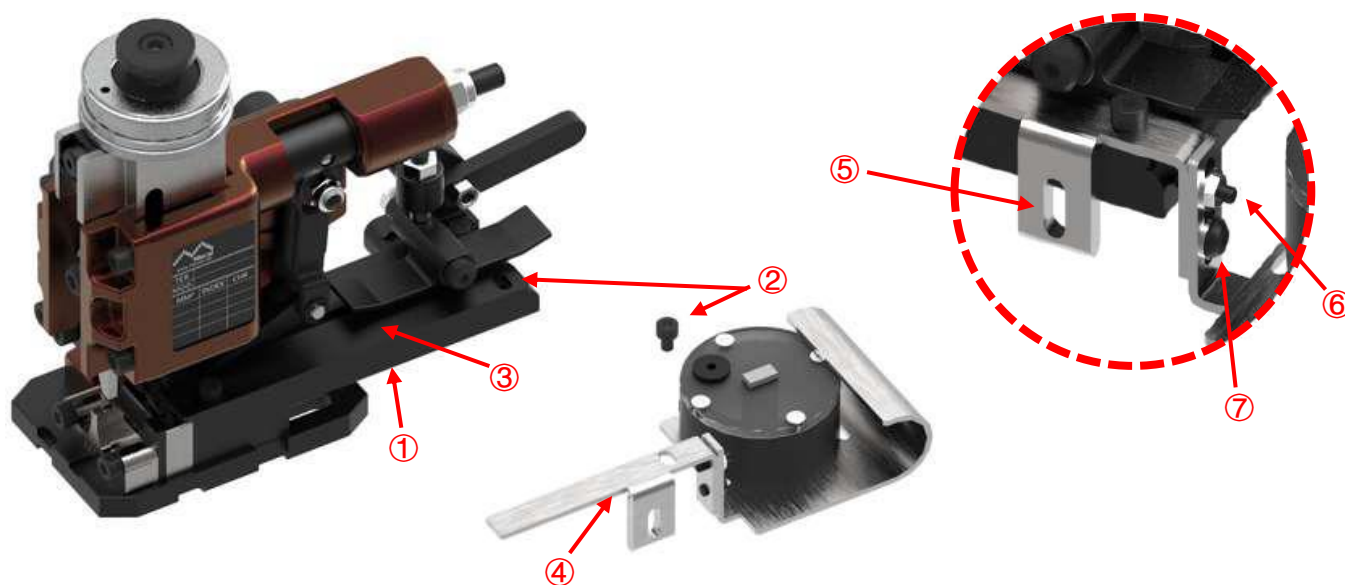
 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
Users_Manual_WERI_Mini_Applicator		Page 12 of 23

5.3 Oil Pot option

The Oil pot lubricator has the function of lubricating the lower part of the terminal, allowing the latter to easily exit the crimping dies of the applicator at the end of the process.

Only one version of lubrication is offered for mounting on the end feed applicator.

5.3.1 Installation of end-feed lubricator



Act on the slide unit ① installed on the applicator (the slide does not need to be removed from the applicator).

Release and remove screw ② that holds the terminal guide ③.

Position the oil pot base ④ over the end guide ③ and reposition the screw ②, keeping the edge of the support ⑤ aligned with the slide.

Bring the dowel ⑥ to abutment on the slide ① and tighten the lock nut ⑦.

In some versions the right terminal guide is fixed to the edge of the slide, instead of above it: in this case it is necessary to fix the oil pot using the edge of the support ⑤ on the side of the slide.

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 13 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

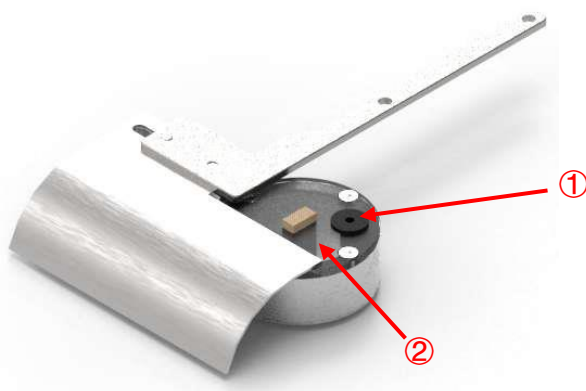
5.3.2 Oil charge

With a syringe or a small funnel, introduce 20ml of oil into the tank through the filler cap ①.

The tank cover ②, made of transparent plastic, allows you to view the contents and monitor the level.

The filler cap also acts as a vent, to allow the oil to be absorbed normally by the felt and must not be capped.

Suggested lubricating oil: HellermannTyton Hellerine 625-05000




5.3.3 Use

The device works autonomously when the terminal passes over the felt.

Make sure there is always oil in the tank: depending on the viscosity of the oil used, this will run out quickly.



 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 14 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

5.4 Preliminary test

After having installed the mini applicator, manually cycle the press by means of a spanner, to check that:

- The mini applicator runs smoothly without sticking in any way
- The terminal is correctly placed on the anvil, in line with the same and the other crimping and cutting parts. If further adjustments are needed, please refer to the following paragraphs:


If, while manually cycling the press, something obstructs the movement, stop immediately and make sure that:

- The mini applicator is correctly mated to the press
- The press is correctly set at the standard 135.8 mm slot height
- The adjusting rings are not set too low (too small crimping height)

If the terminal is not correctly positioned, verify that:

- The feeding connects correctly with the terminal feeding area (hole or wings)
- The lever is in the operating position

Set the top adjusting ring according to the values on the identification plate and, using a wire of the correct section, make some crimping tests. Should the obtained crimping height vary from the data on the identification plate, please check the press set up.

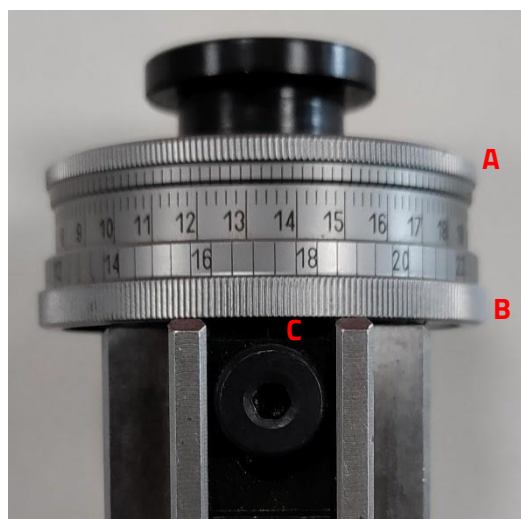
 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 15 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

6 Adjustments

Any adjustment must be performed after having made sure that the press is turned off.

6.1 Crimping heights (trained operator)

Both A (top) and B (bottom) adjusting rings must be set with reference to the C mark.



6.1.1 Conductor crimping height

The A adjusting ring has a setting range of 2.7 mm with a resolution of 0.01mm, and an INDEX of 1.40 corresponds to 14 on the ring.

If the INDEX is 1.45, the ring must be set to 14 and then 5 more steps are necessary. Indeed, $1.40 + 5 \times 0.01 = 1.45$.

A crimping test can now be done and carefully measured: depending on the result, the adjusting ring must be turned either clockwise (lower crimping height) or counterclockwise (higher crimping height).

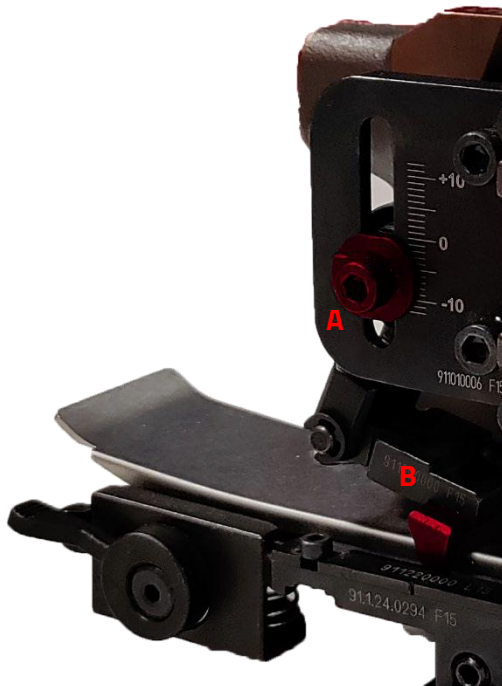
NOTE: this final fine adjustment is needed because the user's press is different from the one that was used to develop the mini applicator.

6.1.2 Insulation crimping height

Set the B adjusting ring to its minimum and turn it clockwise until the crimping is deemed correct.

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 16 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

6.2 Feeding (qualified technician only)



For adapting the pawl B to the pitch of the terminals, to have a new terminal correctly placed on the anvil for each cycle of the press: loosen the nut A and move the screw up for a greater pitch or down for a shorter one. Then tighten the nut again.

The -10 to +10 scale is indicative and only serves to store the screw position once properly adjusted.

 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 17 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

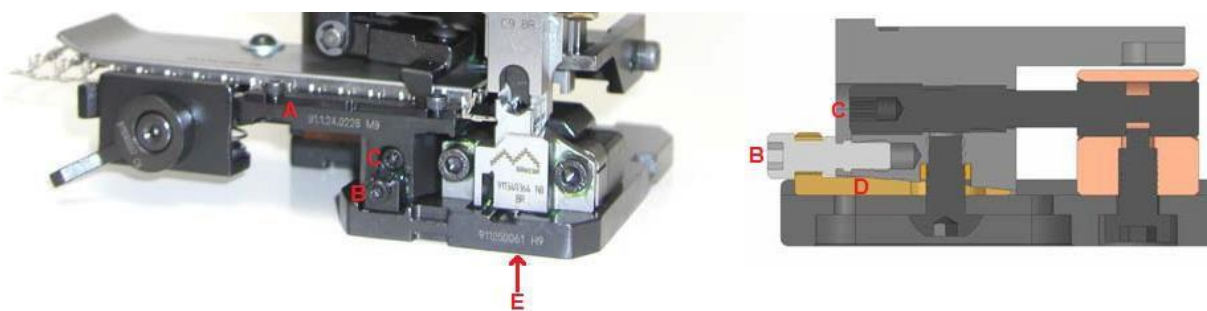
6.3 Crimping axis (qualified technician only)



This adjustment serves to perfectly align the terminal on the anvils and punches axis.

Manually cycle the press by means of a spanner until the terminal is positioned on the anvil. Loosen the nut A and turn the screw clockwise or counterclockwise to determine the correct position. Then tighten the nut again and make a complete cycle of the press. If the result is not satisfying enough, repeat the operation.

6.4 Bellmouth and cut-off tab (qualified technician only)



For adjusting the bellmouth, loosen the screw B to release the wedge D and the terminal slide A. Rotate screw C clockwise or counterclockwise to obtain the desired adjustment. Tighten B again until D blocks A.

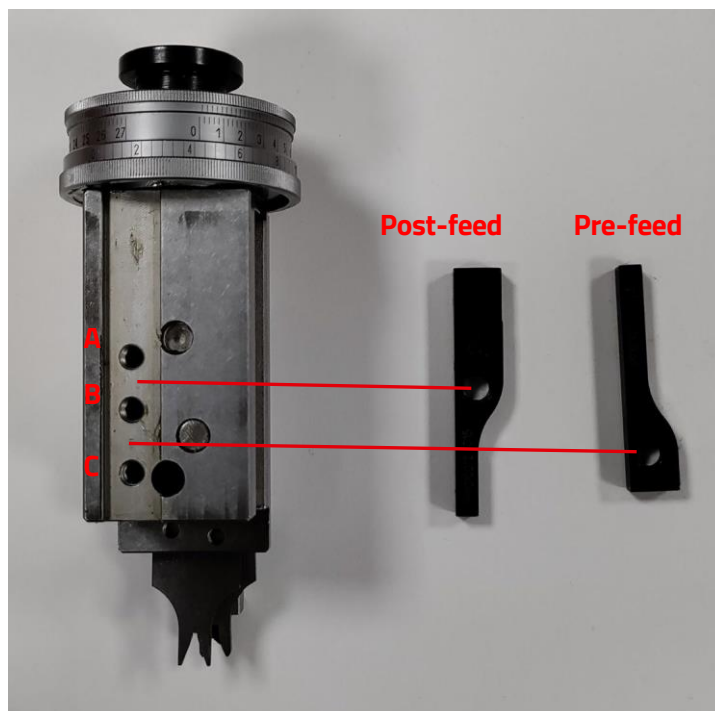
Performing this operation may change the cut-off tab length. In case it needs to be readjusted, remove the mini applicator from the press, loosen the screw E and move the lower group of crimping elements backwards or frontwards. Then tighten E again.

 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
Users_Manual_WERI_Mini_Applicator		Page 18 of 23

7 Stroke setting (qualified technician only)

The mini applicator is mounted by default with a 40 mm stroke, but it can be lowered to 30 mm by changing the cam position.

The cam for feeding the terminal in "pre-feed" or "manual" configuration is attached to the rear edge of the mini applicator. By default, the mounted cam is the "post-feed" or "automatic" one.



Moving the post-feed cam from B to A changes the stroke from 40 to 30 mm.

Moving the pre-feed cam from C to B changes the stroke from 40 to 30 mm.

 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 19 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

8 Maintenance (trained operator)

8.1 Cleaning and lubrication

The mini applicator must be cleaned and lubricated every time it is removed from the press or every 8 working hours.

Suggested lubricating grease: DIN 51502 KP 2 K-30.

Remove the mini applicator from the press.

Remove the ram from the mini applicator.

Using a clean cloth, remove any grease or contamination from the ram.

Check the anvils, punches and cutters, and replace worn or damaged parts.

Clean the mini applicator body carefully.

Lubricate the ram and mini applicator body, together with all moving part.

Put the ram back into the body, spray the mini applicator with a protective oil and, if the mini applicator is not immediately used, reinstall the protective rubber spacer.

Every month fully clean the mini applicator using degreasing products which do not damage plastic parts or surface finishes. Remove the counter if you wash the mini applicator by immersion or by means of liquid under pressure.


Always lubricate the ram and all the sliding parts before putting the mini applicator back to use.

To correctly maintain the mini applicator, its cycles should be recorded, to plan the replacement of the key components.

When replacing worn parts, the operation should be recorded: this will assist in scheduling preventive maintenance and the ordering of spare parts


8.2 Storage

When the mini applicator isn't used for a long period, remove it from the press and clean it. Before storing it, spray the applicator with a thin layer of protective oil.


 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 20 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

9 Troubleshooting

Problem	Cause	Solution
The mini applicator is not correctly mated to the press baseplate	The mating surfaces are not clean and smooth	Clean the mating surfaces
	The mini applicator is not correctly centered under the press	Verify the positioning of the press "T" shank and baseplate
While cycling manually the press with the spanner, something is blocking and does not allow the cycle to be completed	The press has not been set to the correct shut height of 135.8 mm at bottom dead center	Verify the press shut height with a shut height gauge
	The punches are too close to the anvils	Set correctly the adjusting rings of the continuous adjusting head, as per the mini applicator plate
	The rubber spacer has not been removed	Remove the rubber spacer
The terminal does not fit in the terminal feeding guide	The brake on the feeding guide has not been released	Release the brake to allow the guide to receive the terminals
	The terminal is not the good one	Verify that the terminal part number on the reel does correspond to the terminal part number on the mini applicator plate
The terminals are not correctly moving towards the anvil	Incorrect hooking of the terminals by the feeding finger	Manually cycle repeatedly the press, making sure the feeding finger correctly engages the terminals
	The brake on the feeding guide is not operating	Make sure the feeding guide brake is on

 WURTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 21 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

The terminal is not correctly aligned along the anvil axis	Incorrect hooking of the terminals by the feeding finger	Manually cycle repeatedly the press, making sure that the feeding finger correctly engages the terminals
	The feeding system components are worn out	Adjust the feeding system
	The reel unwinding is not smooth	Make sure the reel can unwind without obstacles whatsoever and not requiring an abnormal effort to the feeding system
The crimping is not acceptable	The crimping height is wrong	Make sure the adjusting head is correctly set with reference to the applicator plate and check the crimping height obtained
	The terminal is not correctly positioned with reference to the anvils and punches axis	Verify the correct positioning of the terminal over the anvil and, if needed, adjust
	Anvils and / or punches are damaged and / or worn out	Check the punches, anvils and cutters and, in case of damaged or excessive wearing, replace accordingly
	The wire section is wrong	Make sure the wire section corresponds to the crimping height settings

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual: WERI Mini Applicator	Revision 3.1 Valid from 2025-07-02
		Page 22 of 23
Users_Manual_WERI_Mini_Applicator	This document is only valid on the date of printing: 2025-07-02	

The pull-test outcome is lower than the expected value	The press is not set at a shut height of 135.8 mm while at bottom dead center	By means of a shut height gauge, make sure the press is set at the correct shut height
	The continuous adjusting head is not correctly set	Make sure the setting of the continuous adjusting heads corresponds to the values on the mini applicator plate
	The wire section is wrong	Make sure that the setting of the continuous adjusting head corresponds to the wire section being used
Oil pot option: The terminal is not lubricated	Oil out or not inserted	Fill the tank with 20ml of oil
	Felt not in place	Adjusting the lubricator
	Terminal not in place	Check the correct adjustment of the terminal and/or the paper winder and dereeler