



USER'S MANUAL :
WERI MINI APPLICATOR

Date of Issue: 2023-01-09

Actual Revision: 2.0

Issued by: PM eiCan WERI

WÜRTH ELEKTRONIK MORE THAN YOU EXPECT


 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 1 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	

Table of Content

1	List of part numbers and application.....	2
2	Important warnings.....	3
3	Symbols	4
4	Identification	5
5	Technical data.....	5
6	Installation (trained operator)	6
6.1	<i>Installing the mini applicator inside the press.....</i>	6
6.2	<i>Inserting the terminals into the mini applicator.....</i>	7
7	Adjustments	10
7.1	<i>Crimping heights (trained operator).....</i>	10
7.1.1	Conductor crimping height.....	10
7.1.2	Insulation crimping height.....	11
7.2	<i>Feeding (qualified technician only).....</i>	11
7.3	<i>Crimping axis (qualified technician only).....</i>	12
7.4	<i>Bellmouth and cut-off tab (qualified technician only).....</i>	12
8	Stroke setting (qualified technician only)	13
9	Maintenance (trained operator).....	14
9.1	<i>Cleaning and lubrication.....</i>	14
9.2	<i>Storage.....</i>	14
10	Troubleshooting	15



**WÜRTH
ELEKTRONIK**
MORE THAN
YOU EXPECT

User's Manual : WERI Mini Applicator

Revision 2.0
Valid from 2023-01-09


Page 2 of 18

Users_Manual_WERI_Mini_Applicator
_2.0.docx

This document is only valid on the date of printing: 01/02/2023

1 List of part numbers and application

Applicator Part Number	Serie	Pitch	Terminal Part Number	Wire Range
600 645 401	WR-WTB	3.96 mm	645 001 137 22	AWG 22-18
			645 101 137 22	
600 619 401	WR-WTB	2.54 mm	619 001 137 22	AWG 28-22
			619 101 137 22	
600 661 401	WR-WTB	2.54 mm Intercom	661 001 137 22	AWG 28-22
			661 101 137 22	
600 646 401	WR-WTB	2.50 mm	646 001 137 22	AWG 28-22
			646 101 137 22	
600 620 401	WR-WTB	2.00 mm	620 001 137 22	AWG 28-24
			620 101 137 22	
600 624 401	WR-WTB	2.00 mm Dual Row	624 001 137 22	AWG 28-22
			624 101 137 22	
600 648 401	WR-WTB	1.50 mm	648 001 137 22	AWG 30-28
			648 101 137 22	
600 653 401	WR-WTB	1.25 mm	653 001 137 22	AWG 30-28
			653 101 137 22	
600 665 401	WR-WTB	1.00 mm	665 001 137 22	AWG 32-28
			665 101 137 22	
600 649 405	WR-MPC4	4.20 mm	649 005 137 22	AWG 16
600 649 406			649 105 137 22	
			600 649 407	649 006 137 22
649 106 137 22				
600 649 405			649 007 137 22	AWG 28-22
			649 107 137 22	
600 649 406			649 008 137 22	AWG 16
			649 108 137 22	
600 649 407			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			

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09
		Page 3 of 18
Users_Manual_WERI_Mini_Applicator _2.0.docx	This document is only valid on the date of printing: 01/02/2023	

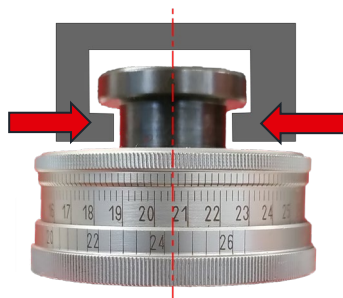
Applicator Part Number	Serie	Pitch	Terminal Part Number	Wire Range
600 662 403	WR-MPC3	3.00 mm	662 003 137 22	AWG 24-20
			662 103 137 22	
600 662 406			662 006 137 22	AWG 30-26
			662 106 137 22	
600 662 401			662 001 137 22	AWG 24-20
			662 101 137 22	
600 662 404			662 004 137 22	AWG 30-26
			662 104 137 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			


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.



 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09
		Page 4 of 18
Users_Manual_WERI_Mini_Applicator _2.0.docx	This document is only valid on the date of printing: 01/02/2023	

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 in order 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


NOTE: each mini applicator is dedicated only to the terminal(s) written on its identification plate. Each mini applicator come 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.

3 Symbols

WARNING: this symbol identifies any portion of this manual that should be carefully read and understood.

STOP: this symbol identifies all the situations where the operator is supposed to stop and proceed to the suggested checks before resuming the operation. Ignoring it would mean causing damages to the equipment.

INFORMATION: this symbol identifies any portion of this manual where generic information and suggestions could be found

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09
		Page 5 of 18
Users_Manual_WERI_Mini_Applicator _2.0.docx	This document is only valid on the date of printing: 01/02/2023	

4 Identification

TER.		
MOD.		
AWG	INDEX	CHR

TER.: terminal part number.

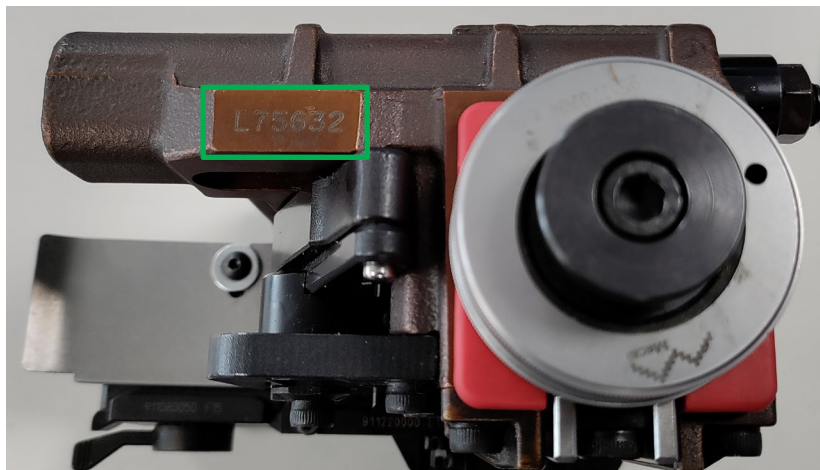
MOD.: mini applicator part number.

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

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

CHR: conductor crimping height.

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



5 Technical data


Shut height: 135.8 mm

Stroke: 40 / 30 cm (depending on cam set up)

Feeding: mechanical

Weight: 3.9 kg

Dimensions: 144 × 145.5 × 105 mm

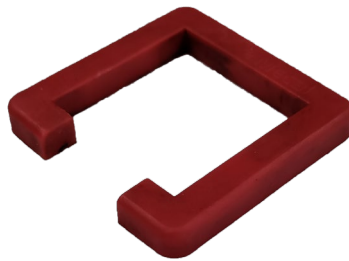
 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 6 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	

6 Installation (trained operator)

6.1 Installing the mini applicator inside the press

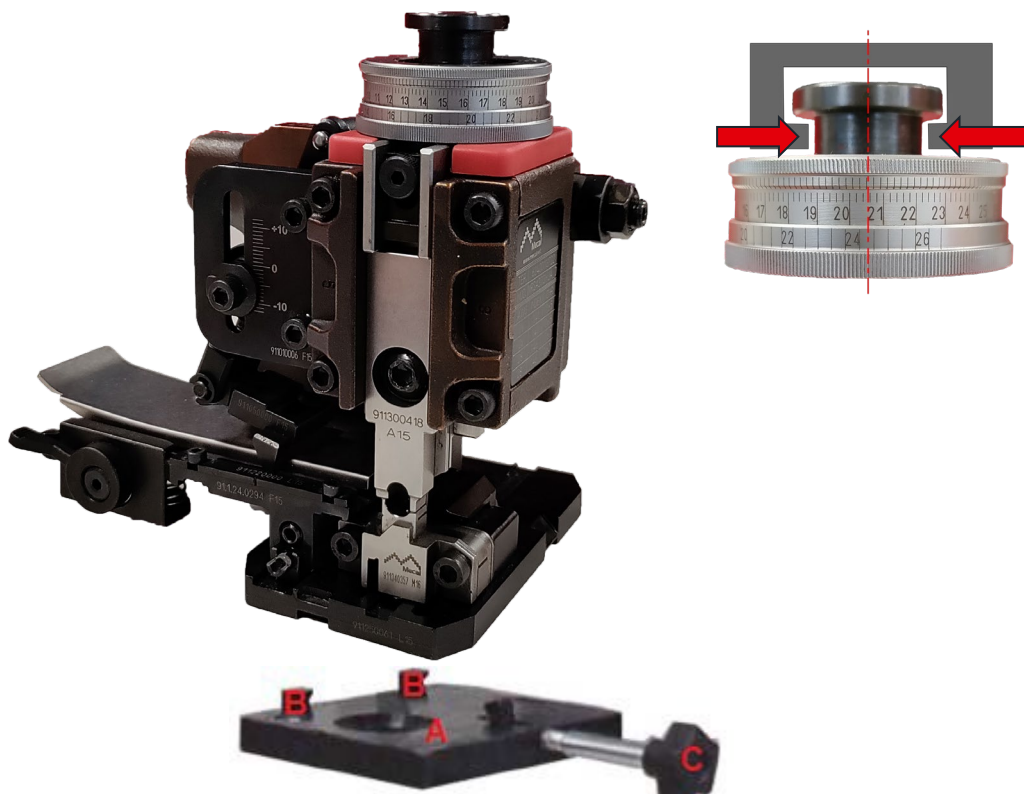
Make sure to turn off the press before performing the following steps.


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.



Place the mini applicator on the fixing plate A, line up the magnum's D base with the B hooks and tighten up the knob C.

Verify that the mini applicator is flat on the fixing plate A and make sure that the mini applicator's E pin is perfectly centered with reference to the press "T" shank.



 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 7 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	


6.2 Inserting the terminals into the mini applicator

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



Free the brake by means of the lever B, place the terminals in the guide A, push it until it will be hooked by the pawl C and then tighten the brake by means of the lever B.



 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 8 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	

After having installed the mini applicator, manually cycle the press by means of a spanner, in order 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 slit height
- The adjusting rings are not set too low (too small crimping height)

If the terminal is not correctly positionned, verify that :

- The feeding finger connects correctly with the terminal (strip holes)
- The brake 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.

 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	Revision 2.0 Valid from 2023-01-09
Users_Manual_WERI_Mini_Applicator _2.0.docx		Page 9 of 18
This document is only valid on the date of printing: 01/02/2023		

CAUTION :

Terminal feeding system is a bit different as contacts are smaller and needs a precise guiding so it used an air pressured feeding system. For this feeding system, air pressure as to be set at 6 bar (87psi) and connected as shown as below :



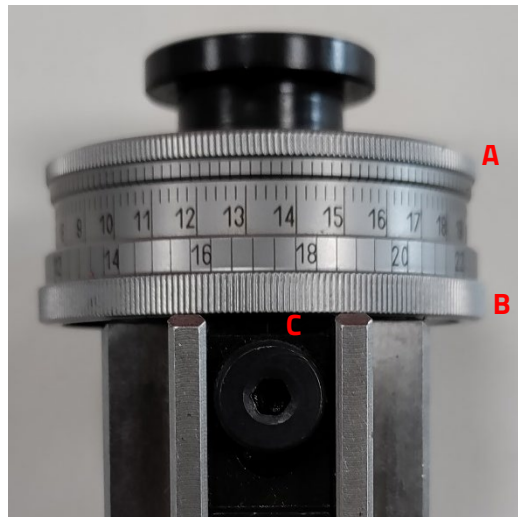
 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09
		Page 10 of 18
Users_Manual_WERI_Mini_Applicator _2.0.docx	This document is only valid on the date of printing: 01/02/2023	

7 Adjustments

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

7.1 Crimping heights (trained operator)

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




7.1.1 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 has to be turned either clockwise (lower crimping height) or counter-clockwise (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.

 WÜRTH ELEKTRONIK MORE THAN YOU EXPECT	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09 <hr/> Page 11 of 18
Users_Manual_WERI_Mini_Applicator _2.0.docx	This document is only valid on the date of printing: 01/02/2023	

7.1.2 *Insulation crimping height*


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

7.2 Feeding (qualified technician only)



For adapting the pawl B to the pitch of the terminals, in order 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.

 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 12 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	

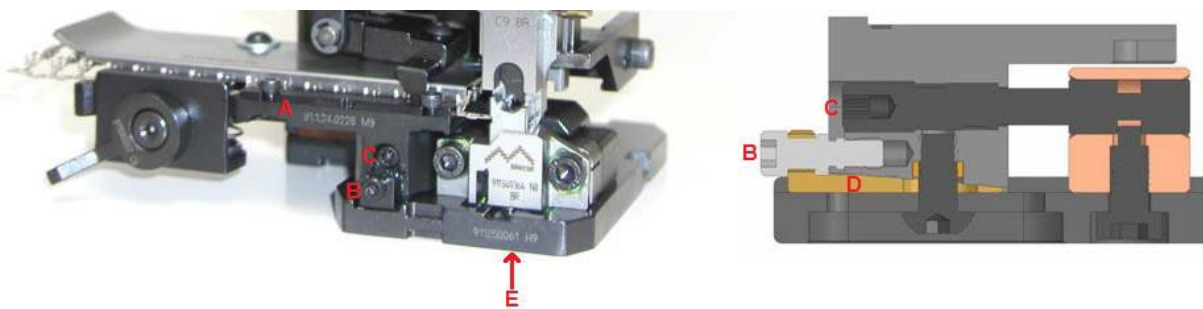
7.3 Crimping axis (qualified technician only)

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 counter-clockwise 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.

7.4 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 counter-clockwise to obtain the desired adjustment. Tighten B again until D blocks A.

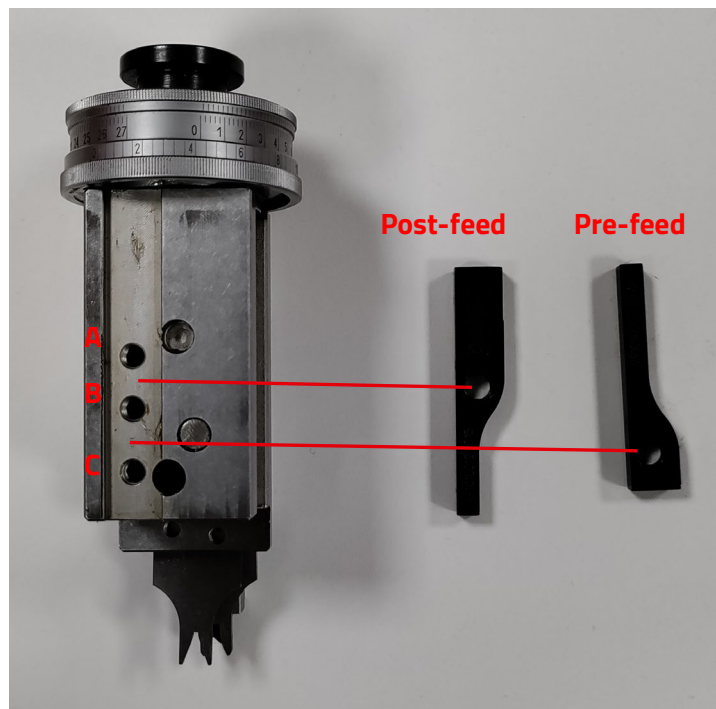
Performing this operation may change the cut-off tab length. In case it needs to be readjusted, remove the mini applicator from the press, loosen the screw E and move the lower group of crimping elements backwards or frontwards. Then tighten E again.

	User's Manual : WERI Mini Applicator	Revision 2.0 Valid from 2023-01-09
		Page 13 of 18
Users_Manual_WERI_Mini_Applicator_2.0.docx	This document is only valid on the date of printing: 01/02/2023	


8 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.

 <p>WÜRTH ELEKTRONIK MORE THAN YOU EXPECT</p>	<p>User's Manual : WERI Mini Applicator</p>	<p>Revision 2.0 Valid from 2023-01-09</p> <hr/> <p>Page 14 of 18</p>
<p>Users_Manual_WERI_Mini_Applicator _2.0.docx</p>	<p>This document is only valid on the date of printing: 01/02/2023</p>	

9 Maintenance (trained operator)

9.1 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, in order 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

9.2 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.



10 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



**WÜRTH
ELEKTRONIK**
MORE THAN
YOU EXPECT

User's Manual : WERI Mini Applicator

Revision 2.0
Valid from 2023-01-09

Page 16 of 18

Users_Manual_WERI_Min_Applicator
_2.0.docx

This document is only valid on the date of printing: 01/02/2023

	The brake on the feeding guide is not operating	Make sure the feeding guide brake is on
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
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



**WÜRTH
ELEKTRONIK**
MORE THAN
YOU EXPECT

User's Manual : WERI Mini Applicator

Revision 2.0
Valid from 2023-01-09

Page 17 of 18

Users_Manual_WERI_Min
_2.0.docx

This document is only valid on the date of printing: 01/02/2023

	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