

Leister UNIMAT V Automatic hot-air welding machine



Please read operating instructions carefully before use and keep it for further reference.

APPLICATION

Overlap and tape welding of coated fabric covers, foils with or without fabric reinforcement, homogenous or coated sealing membranes made of PVC-P, PE, TPO, ECB, CSPE, EPDM, PVDF etc, PE coated fabric tape.

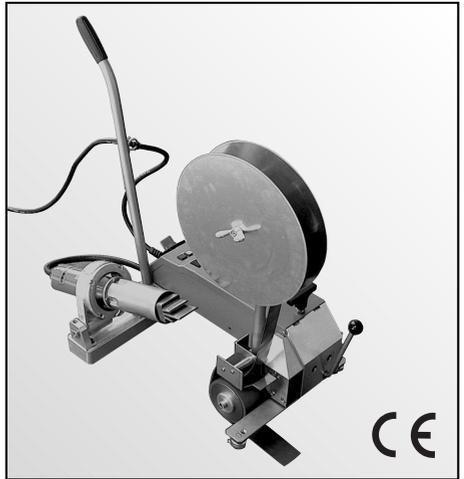
Leister UNIMAT V Automatic Overlap Welding Machine

Welding seam width 20 or 40mm



Leister UNIMAT V Automatic Tape Welding Machine

Welding seam width 40 or 50mm





WARNING



Danger! Unplug the tool before opening it, as live components and connections are exposed.



Incorrect use of hot air tools can present a **fire and explosion hazard**, particularly in the proximity of flammable materials and explosive gases.



Danger of getting burned! Do not touch the heater tube and nozzle when they are hot. Let the tool cool down. Do not point the hot air flow in the direction of people or animals.



Only connect the tool to a **socket outlet with protective earth conductor**. Any disconnection of the protective earth conductor, in or outside the tool is dangerous!

Use only extension cord with a protective earth conductor .



VORSICHT



The **rated voltage** stated on the tool must correspond with the mains voltage.



For personal protection, we strongly recommend the tool to be connected to an **RCCB** (Residual Current Circuit Breaker) before using it on construction sites.



The tool must be operated **under supervision**.

- Heat can ignite flammable materials which are not in view.
- Interference can impair the welding process when taking place in the vicinity of high-frequency installations.



Protect the tool **from damp and wet**.

Approval Marks



TECHNICAL DATA

Protection Class I



CCA certified

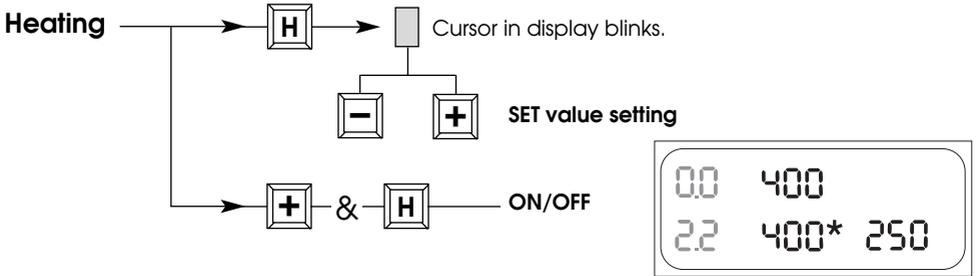
Voltage	V~
Frequency	Hz
Capacity	W
Temperature	°C
Air flow	l/min.
Static pressure	Pa
Noise emission level	L _{pA} (dB)
Drive speed	m/min.
Dimensions L×W×H	mm
Dimensions L×W×H	mm
Weight tape	kg
Weight overlap	kg

230
50 / 60
3680
20 – 620
500 50 – 100 % adjustable
max 5000
70
1.5 up to 12
600 × 415 × 310 tape
600 × 430 × 310 overlap
28 incl. 5 m cable
23 incl. 5 m cable

Mains voltage is not reversible

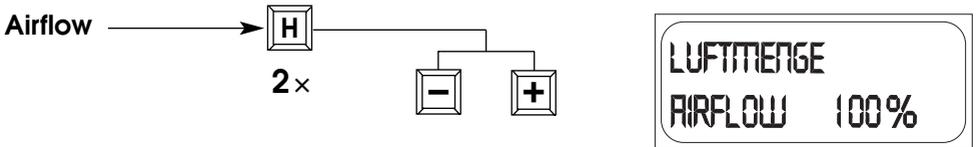
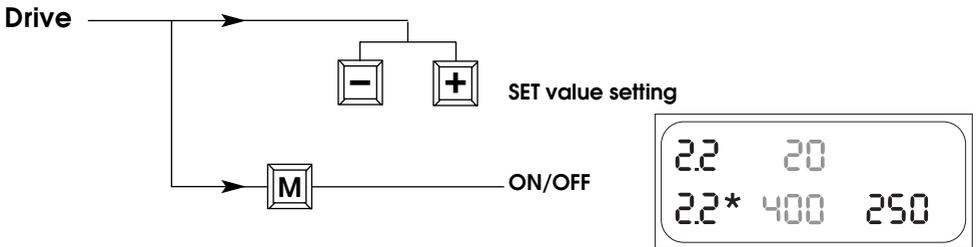
Welding temperature

Set welding temperature by means of buttons **[H]** , **[−]** **[+]** . The temperature is dependent on the material and ambient temperature. The SET value will be shown on the **display (5)**. Switch on heater by pressing buttons **[+]** and **[H]** (simultaneously). Heating up time is approx. 5 minutes.



Welding speed

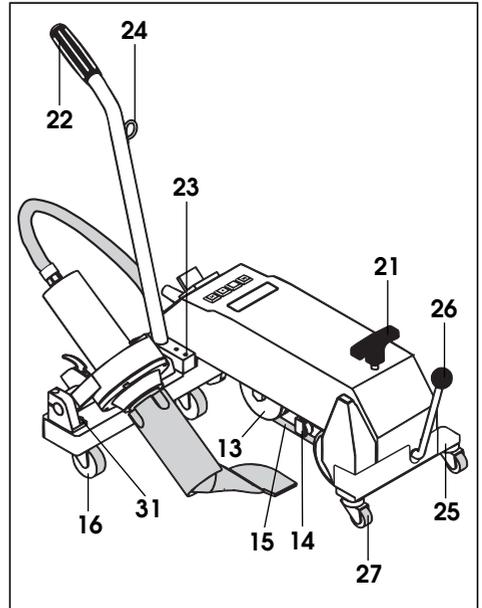
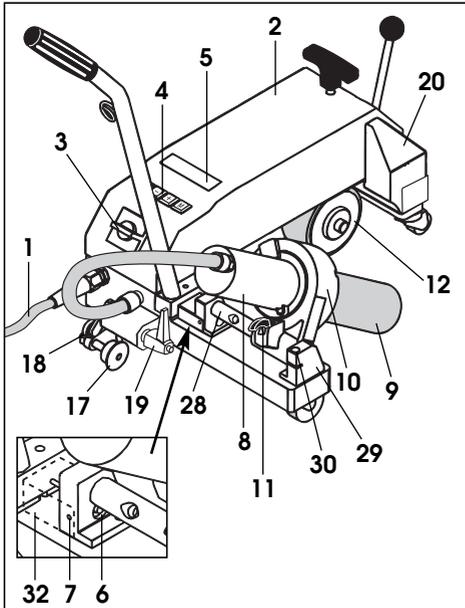
Set the welding speed depending upon the foil or sealing membrane and weather conditions by pressing buttons **[−]** **[+]** . The SET value will be shown on the **display (5)**.



Display appears after approx. 5 seconds.

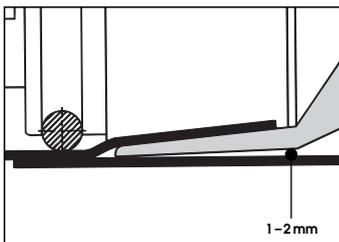
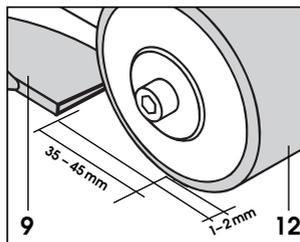
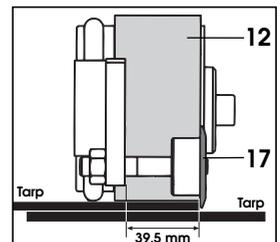


*** Heater/drive active**



1. Mains cable
2. Housing
3. Main switch
4. Keyboard
5. Display
6. Sensor
7. Locking screw for sensor
8. Hot air blower
9. Welding nozzle
10. Tool holder
11. Locking lever
12. Drive/pressure roller
13. Guide roller
14. Pinch roller
15. Drive belt
16. Steering wheel, chassis

17. Guide roller
18. Eccentric guide roller
19. Guide roller lever
20. Weight
21. Carrying handle
22. Guide handle
23. Guide handle fixing screw
24. Holder for mains cable
25. Lifting device
26. Lifting device lever
27. Lifting device steering wheel
28. Guide shaft tool holder
29. External supporting bracket
30. Guide shaft locking screw
31. Supporting bracket for adjustment screw
32. Sensor cover

Detail A**Detail B****Detail C**

Operating condition

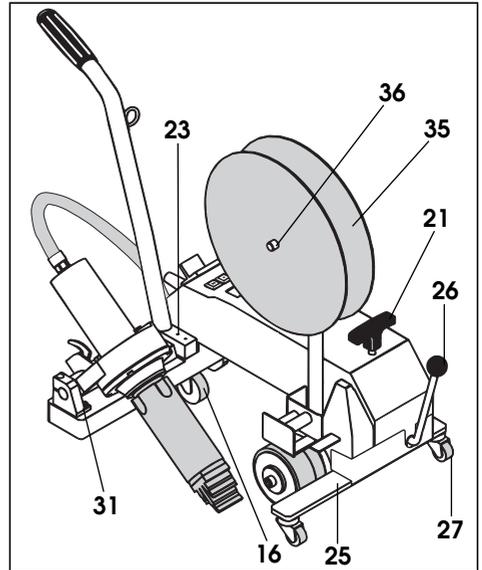
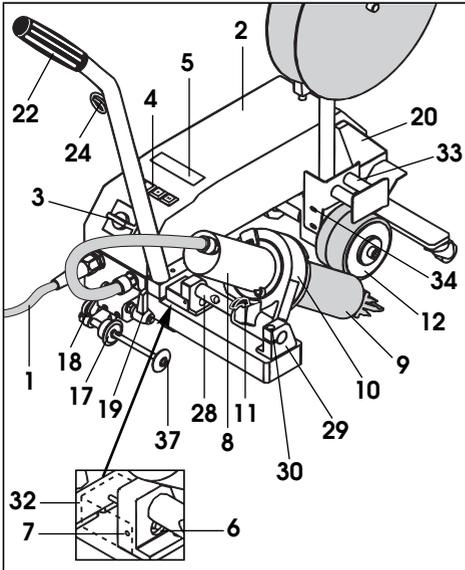
- Attach **guide handle (22)**.
- Hang **mains cable (1)** into **holder for mains cable (24)**.
- Check basic setting of **guide roller (17)** and **welding nozzle (9)** (ex works Detail A,B and C, page 4).
The distance between **welding nozzle (9)** and **drive/pressure roller (12)** has to be 35 - 45 mm depending on thickness and characteristic features of the material. The optimum welding speed has to be determined by welding tests.
- **Transport setting**
 - Swivel **guide roller (17)** upwards by operating **guide roller lever (19)**.
 - Lift up the automatic welding machine by operating **lifting device lever (26)**.
 - Move out **hot air blower (8)** by pulling **locking lever (11)** and swivel it upwards until it locks.
- Connect tool to the mains. The mains voltage must correspond with the rated voltage stated on the tool.

Tool positioning

- Position automatic welding machine correctly on tarp or foil (Detail C, Page 4).
- Place **drive/pressure roller (12)** on the tarp to be welded by operating **lifting device lever (26)** and **drive/pressure roller (12)**.
- Swivel **guide roller (17)** down by operating **guide roller lever (19)**.
- The automatic welding machine is now resting on the **guide roller (17)** as well as on the **drive/pressure roller (12)**.
- **Guide roller (17)** and **drive/pressure roller (12)** have to be positioned parallel to the edge of the foil (Detail C, Page 4).

Welding procedure

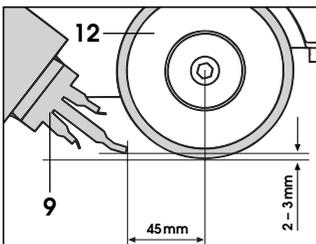
- Set welding parameters, see Page 3.
- Welding temperature has to be achieved.
- Carry out a test weld in accordance with the material manufacturer's welding instructions and national guidelines or regulations.
- Check the test weld.
- Pull **locking lever (11)**, lower **hot air blower (8)** and position it between the overlapped sheets until it stops. **Locking lever (11)** must be engaged. Drive motor starts automatically.
If an automatic start does not take place, adjust sensor (see Automatic Start Fault Cause, Page 13). Machine can also be started manually using button .
- Automatic welding machine is guided by means of **guide roller (17)**. Adjustment for deviations by using **guide handle (22)**. Do not put pressure on **guide handle (22)** as welding faults could occur. Note position of **guide roller (17)**.
- After welding process, pull **locking lever (11)**, move out **hot air blower (8)** up to the stop and swivel up until it locks
- After welding is completed, switch off heater with buttons  and  (press simultaneously). This allows **welding nozzle (9)** to cool down.
- Switch off **main switch (3)**.



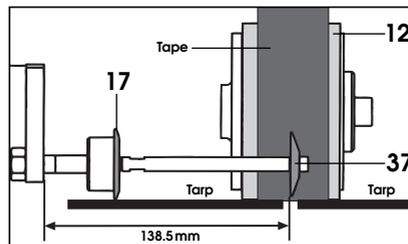
1. Mains cable
2. Housing
3. Main switch
4. Keyboard
5. Display
6. Sensor
7. Locking screw for sensor
8. Hot air blower
9. Welding nozzle
10. Tool holder
11. Locking lever
12. Drive/pressure roller
16. Carrying handle
17. Guide roller
18. Eccentric guide roller
19. Lever guide roller
20. Weight
21. Carrying handle

22. Guide handle
23. Guide handle fixing screw
24. Holder for mains cable
25. Lifting device
26. Lifting device lever
27. Lifting device steering wheel
28. Guide shaft tool holder
29. External supporting bracket
30. Guide shaft locking screw
31. Supporting bracket for adjustment screw
32. Sensor cover
33. Tape guide
34. Tape guide fixing
35. Tape de-reeler
36. Tape de-reeler wing nut
37. Indicator roller

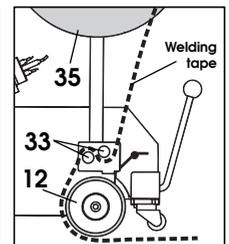
Detail D



Detail E



Detail F



Operating condition

- Attach **guide handle (22)**.
- Hang **mains cable (1)** into **holder for mains cable (24)**.
- Check basic setting of **guide roller (17)** and **welding nozzle (9)** (ex works Detail D, and E, page 6).
- **Transport setting**
 - Swivel **guide roller (17)** upwards by operating **lever guide roller (19)**.
 - Lift up the automatic welding machine by operating **lifting device lever (26)**.
 - Move out **hot air blower (8)** by pulling **locking lever (11)** and swivel it upwards until it locks.
- Connect tool to the mains. The mains voltage must correspond with the rated voltage stated on the tool.

Tool positioning

- Position automatic welding machine correctly on tarp or foil (Detail E, page 6).
- Pass welding tape through **tape guide (33)** and under **drive/pressure roller (12)** (Detail F, page).
- Place **drive/pressure roller (12)** on the cover to be welded by operating **lifting device lever (26)**.
- Swivel **guide roller (17)** downwards, by operating **lever guide roller (19)**.
- The automatic welding machine is now resting on the **guide roller (17)** as well as on the **drive/pressure roller (12)**.

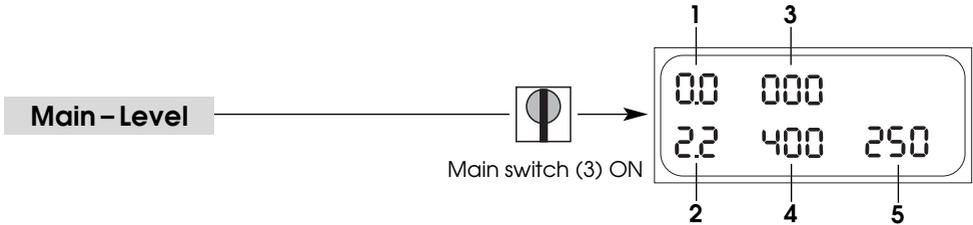
Welding procedure

- Set welding parameters, see Page 3.
- Welding temperature has to be achieved.
- Carry out a test weld in accordance with the material manufacturer's welding instructions and national guidelines or regulations.
- Check the test weld.
- Pull **locking lever (11)**, lower **hot air blower (8)** and position it up to the stop. **Locking lever (11)** must be engaged. Drive motor starts automatically. If an automatic start does not take place, adjust sensor (see Automatic Start Fault Cause, Page 13). Machine can also be started manually by using button .
- Automatic welding machine is guided by means of **indicator roller (37)**. Adjustment for deviations by using **guide handle (22)**. Do not put pressure on **guide handle (22)** as welding faults could occur. Note position of **indicator roller (37)**.
- After welding process, pull **locking lever (11)**, move out **hot air blower (8)** up to the stop and swivel up until it locks.
- After welding is completed switch off heater with buttons  and  (press simultaneously). This allows **welding nozzle (9)** to cool down.
- Switch off **main switch (3)**.

Operating condition

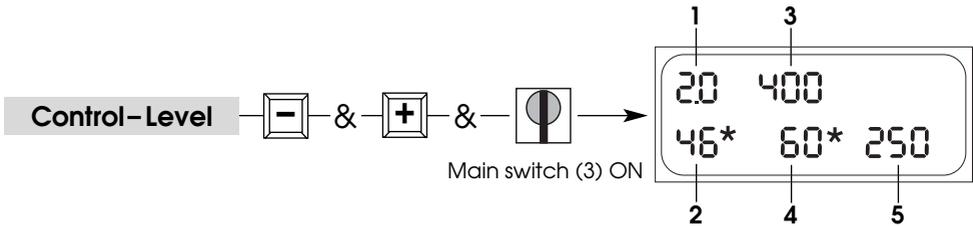
- Connect automatic welding machine to the mains.
- Start tool in Main Mode or Control Mode.

Without accessory voltage measuring module



Display of:

- | | |
|------------------|--------------|
| 1. Welding speed | ACTUAL value |
| 2. Welding speed | SET value |
| 3. Temperature | ACTUAL value |
| 4. Temperature | SET value |
| 5. Welded length | ACTUAL value |

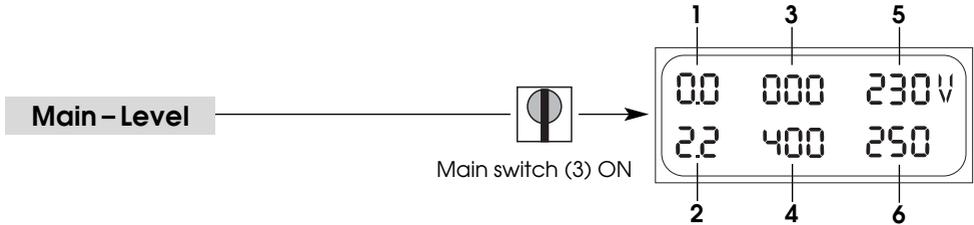


Display of:

- | | |
|------------------|------------------------------------|
| 1. Welding speed | ACTUAL value |
| 2. Welding speed | Power consumption in % after start |
| 3. Temperature | ACTUAL value |
| 4. Temperature | Power consumption in % after start |
| 5. Welded length | ACTUAL value |

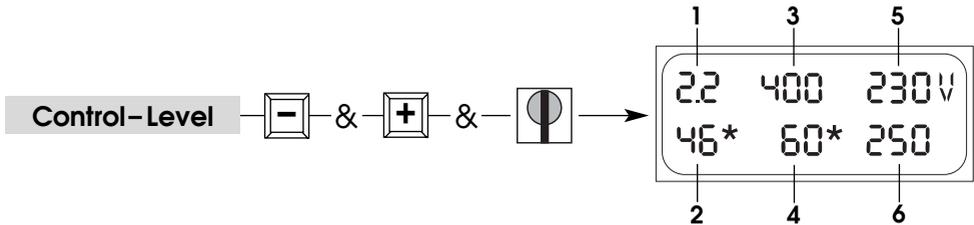
The retro fitting of a voltage measuring module may only be carried out by an authorised Leister Service Centre.

With accessory voltage measuring module



Display of:

- 1. Welding speed ACTUAL value
- 2. Welding speed SET value
- 3. Temperature ACTUAL value
- 4. Temperature SET value
- 5. Voltage ACTUAL value
- 6. Welded length ACTUAL value



Display of:

- 1. Welding speed ACTUAL value
- 2. Welding speed Power consumption in % after start
- 3. Temperature ACTUAL value
- 4. Temperature Power consumption in % after start
- 5. Voltage ACTUAL value
- 6. Welded length ACTUAL value

*** Heater/drive active**

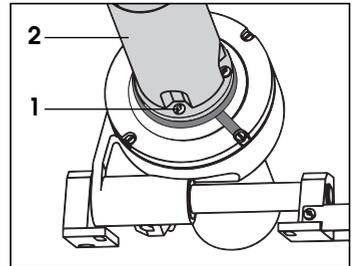
- Do not touch nozzle when hot
- Switch off heat by pressing  and  (simultaneously). This allows **welding nozzle (9)** to cool down.
- Switch off **main switch (3)**.
- Remove mains plug from the mains socket.

Change the welding nozzle

- *Overlap welding 20 mm to 40 mm*
- *Tape welding 40 mm to 50 mm*
- *Overlap welding to tape welding*

1. Countersunk screw M4 x 10
2. Welding nozzle

Dismantle welding nozzle, sequence no. 1-2
 Assemble welding nozzle, sequence no. 2-1



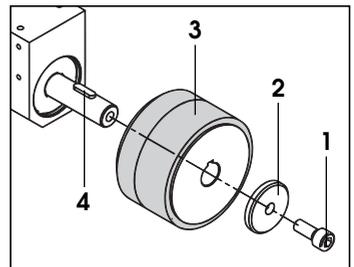
Converting tape 40 mm to 50 mm

- *Change welding nozzle*

- *Change drive/pressure roller*

1. Cylindrical head screw M10 x 25
2. Tension washer
3. Drive/pressure roller
4. Adjusting spring

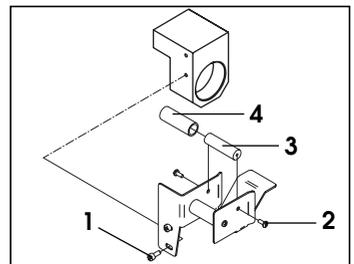
Dismantle drive/pressure roller, sequence no. 1-3
 Assemble drive/pressure roller, sequence no. 3-1



- *Converting tape guide*

1. Cylindrical head screw M5 x 12
2. Countersunk screw M4 x 10
3. Distance roller
4. Tape guide roller

Dismantle the tape guide, sequence no. 1-5
 Assemble the tape guide, sequence no. 5-1



Converting tape to overlap

– Change welding nozzle (see page 9)

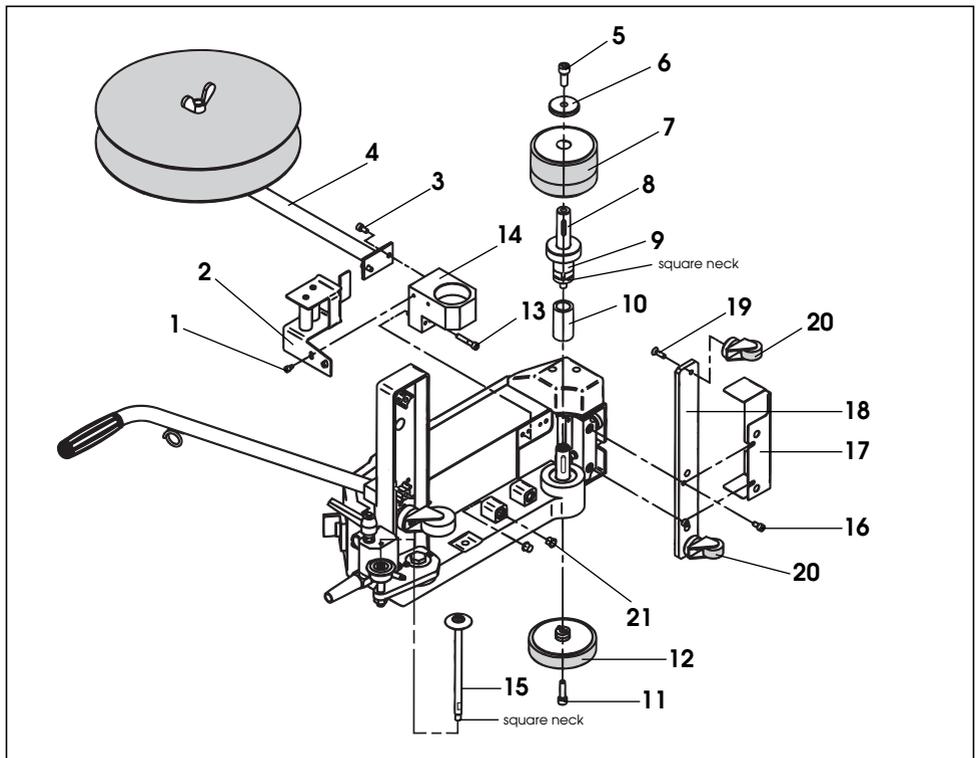
– Tape 40/50 mm

1. Cylindrical head screw M5 × 12
2. Tape guide
3. Cylindrical head screw M6 × 12
4. Tape de-reeler
5. Cylindrical head screw M10 × 25
6. Tension washer
7. Drive/pressure roller
8. Adjusting spring
9. Axle (loosen on square neck)

10. Spacer sleeve
11. Cylindrical head screw M8 × 30
12. Track wheel
13. Cylindrical head screw M6 × 35
14. Supporting bracket
15. Indicator roller
(loosen on square neck)
16. Cylindrical head screw M6 × 12
17. Cover
18. Plate lifting device
19. Countersunk screw M6 × 20
20. Guide roller lifting device
21. Disc plug

Dismantle automatic tape welding machine sequence no. 1-21

Assemble automatic overlap welding machine sequence no. 15-1, Page 12



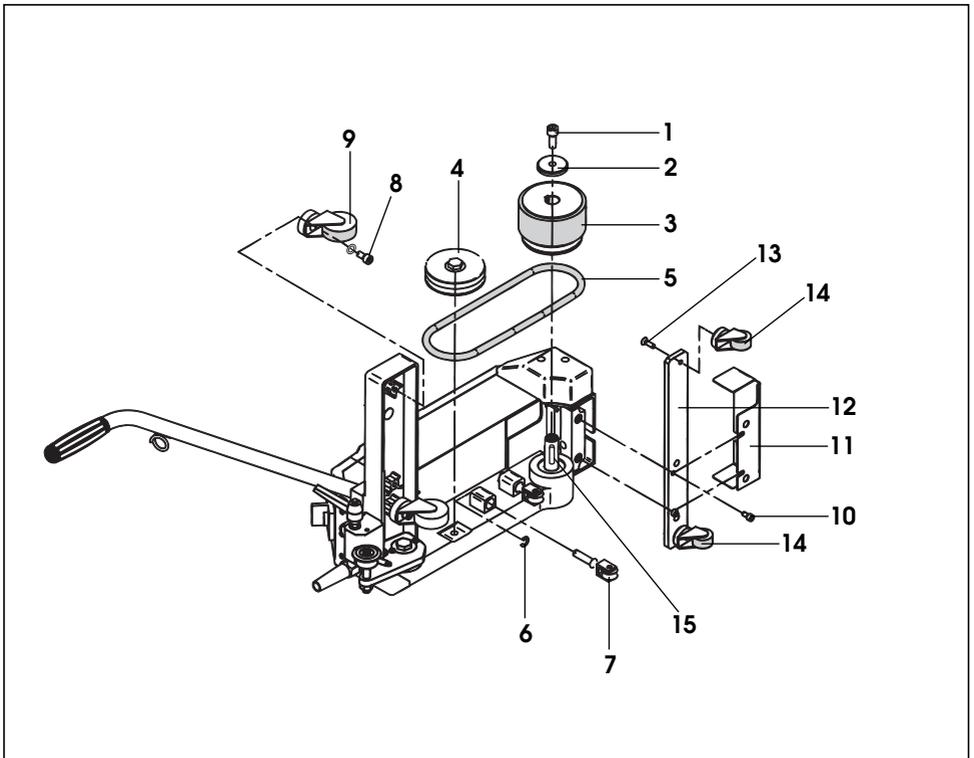
Converting overlap to tape

– Change the welding nozzle (see page 9)

– Overlap 20/40 mm

- | | |
|------------------------------------|------------------------------------|
| 1. Cylindrical head screw M10 × 25 | 10. Cylindrical head screw M5 × 40 |
| 2. Tension washer | 11. Cover |
| 3. Drive/pressure roller | 12. Plate lifting device |
| 4. Guide roller | 13. Countersunk screw M6 × 12 |
| 5. Drive belt | 14. Steering wheel lifting device |
| 6. Locking washer D8 | 15. Adjusting spring |
| 7. Pressure roller | |
| 8. Cylindrical head screw M18 × 16 | |
| 9. Steering wheel, chassis | |

Dismantle automatic overlap welding machine sequence no. 1-15
 Assemble automatic tape welding machine sequence no. 21-1, Page 11



Error 100/101/102	Massnahme
check the blower	<ul style="list-style-type: none"> • Check blower (air must flow out of nozzle) • Error re-occurs, contact Service Centre

Without accessory voltage measuring module (Control Level)

Display 4	Cause of heater defect	Action
100 % & SET value not reached 100 %	<ul style="list-style-type: none"> • Low mains voltage • Heating element failure 	Reduce airflow Repair/Service Centre

Display 2 1	Cause of drive defect	Action
100 %	<ul style="list-style-type: none"> • Low mains voltage • High welding speed with large load torque 	Reduce welding speed Check automatic welding machine process

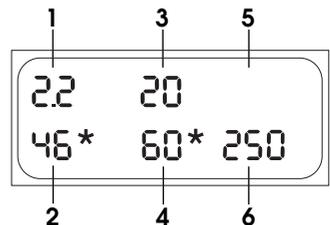
With accessory voltage measuring module

Display 3	Cause of heater defect	Action
SET value not reached	<ul style="list-style-type: none"> • Low mains voltage • Heating element failure 	Reduce airflow Repair/Service Centre

Display 1	Cause of drive defect	Action
SET value not reached	<ul style="list-style-type: none"> • Low mains voltage • High welding speed with large load torque 	Reduce welding speed Check automatic welding machine process

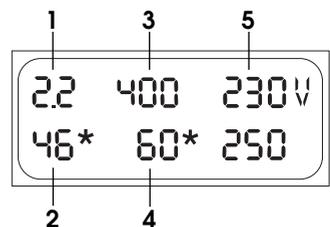
Display of:

- 1. Welding speed ACTUAL value
- 2. Welding speed SET value
- 3. Temperature ACTUAL value
- 4. Temperature SET value
- 6. Welded length ACTUAL value



Display of:

- 1. Welding speed ACTUAL value
- 2. Welding speed Power consumption in % after start
- 3. Temperature ACTUAL value
- 4. Temperature Power consumption in % after start
- 5. Voltage ACTUAL value
- 6. Welded length ACTUAL value



Cause of automatic starting defect

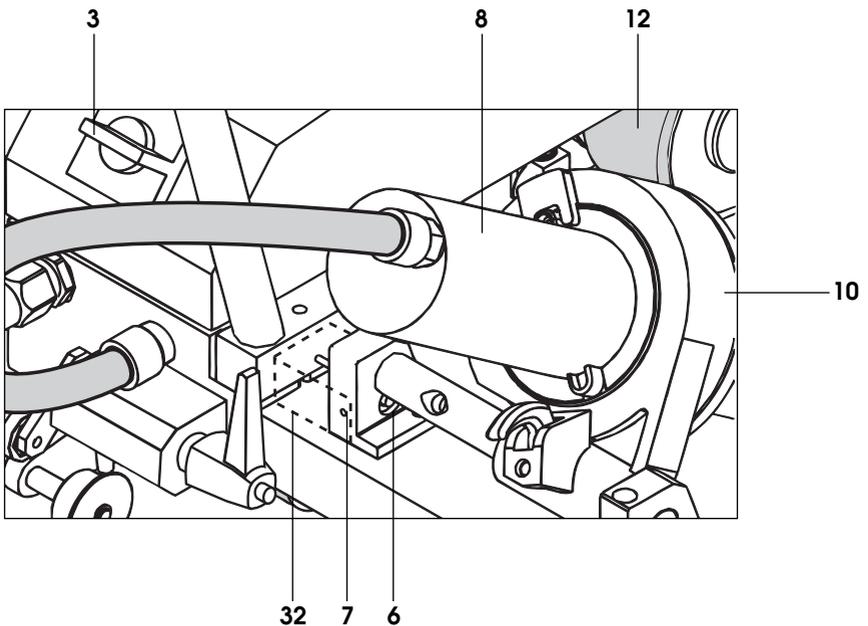
Drive motor **fails to start automatically** after nozzle has been pushed into position

- **Sensor (6)** incorrectly adjusted

Action adjust sensor

- Switch off **main switch (3)**
- Remove **sensor cover (32)**
- Lower **hot air blower (8)** and move to left hand stop
- **Locking lever (11)** must be engaged
- Loosen **locking screw for sensor (7)**
- Push **sensor (6)** onto **tool holder (10)** (switch displacement, 0.5 mm)
- Tighten **locking screw for sensor (7)**
- Assemble **sensor cover (32)**
- Move **hot air blower (8)** up to the stop and swivel upwards

If FAULT still exists, contact the Service Centre



ACCESSORIES

- Only Leister accessories should be used.
- Voltage measuring module
 - The retro fitting of a voltage measuring module may only be carried out by an authorised Leister Service Centre.

TRAINING

Leister Process Technologies and their authorised Service Centres offer welding courses world-wide free of charge. The customer will also receive training on site if necessary.

MAINTENANCE

- Clean **welding nozzle (9)** with wire brush.
- Clean air inlet on **hot air blower (8)**.
- Check **mains cable (1)** and plug for electrical and mechanical damage.

SERVICE AND REPAIR

- When **display (5)** indicates "**maintenance, servicing**", the tool must be checked by an authorised Service Centre.
- Repairs have to be carried out by authorised **Leister Service Centres** only. They guarantee, **within 24 hours**, a correct and reliable **repair service** using original spare parts in accordance with the circuit diagrams and spare parts lists.

GUARANTEE AND LIABILITY

- Guarantee and liability are in accordance with the guarantee certificate as well as with the currently valid general business and sales conditions.
- Leister Process Technologies rejects any guarantee claims for tools which are not in their original condition. The tools must never be altered or changed.

Technical data and specifications are subject to change without prior notice.

Your authorized Service Centre is:



Service Record Leister UNIMAT V

This document should be handed to the authorised Leister Service Center for updating when repaired or serviced. This document is to be retained and kept by the owner of the tool.

Technical Data

Automatic hot air welding machine Type

Order Number

Serial Number

Rated Voltage **V**

Rated Power **W**

Sold **Date**

Service

1. Date Service Centre..... Signature.....

2. Date Service Centre..... Signature.....

3. Date Service Centre..... Signature.....

4. Date Service Centre..... Signature.....

5. Date Service Centre..... Signature.....

6. Date Service Centre..... Signature.....

Repair

1. Date Service Centre..... Signature.....

2. Date Service Centre..... Signature.....

3. Date Service Centre..... Signature.....