LEISTER®

ALLIED POWER TOOLS

VARIMAT V2

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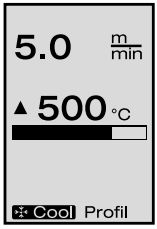
Congratulations on purchasing an automatic hot-air welding machine VARIMAT V2 !
You have chosen a top-class automatic hot-air welding machine made of high-quality materials. This device has been developed and produced according to the latest welding technologies. Every VARIMAT V2 passes stringent quality checks before leaving the factory in Switzerland.

Table of contents

Quick info

How do I start the automatic hot-air welding machine VARIMAT V2 ?

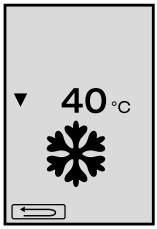
1. Connect power supply cord to the line/mains
2. **Main switch (3)** ON
3. Press Drive button → 5.0 m/min Turn e-Drive
4. Press Heating button → 500 °C Turn e-Drive
5. Press e-Drive Heating up time approx. 3 – 5 minutes →
6. Carry out a test weld according to the welding instruction of the material manufacturer and national standards or guidelines. Approve test weld.
7. Welding



How do I switch off the automatic hot-air welding machine VARIMAT V2 ?

1. Press e-Drive (Fig. 1).
2. Press «**Cool down OK**» e-Drive and allow to cool approx. 4 minutes (Fig. 2). Blower switches off automatically.
3. After **welding nozzle (9)** has cooled down, **main switch (3)** OFF

(Fig. 1)



(Fig. 2)

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

Leister VARIMAT V2
Automatic hot-air welding machine

Application

- Overlap welding of roofing membranes made of PVC, TPO, ECB, EPDM, CSPE for basic weld seams. Can also be used in areas close to edges and on uneven surfaces.
- Overlap welding of sheets and coated fabrics

Warning

Danger to life when opening the device as live components and connections are exposed. Unplug the line/mains plug from the plug socket before opening the device.

Incorrect use of the hot air tool can present a **fire and explosion hazard** especially near combustable materials and explosive gases.

Do not touch hot welding nozzle and welding plate as they can cause **burns**. Allow the tool to cool down. Do not point the hot-air flow in direction of people or animals.

Connect tool to a **receptacle with protective earth terminal**. Any interruption of the protective earth conductor inside or outside the tool is dangerous!
Use only extension cables/cords with protective earth conductor!

Caution

Rated voltage stated on the device must correspond to line/mains voltage.
N 61000-3-11; Z_{max} = 0.115 Ω + j 0.072 Ω. If necessary, consultate supply authority.
Extract hot-air blower in case of **power breakdown**.

For personal protection, we strongly recommend the tool be connected to an **RCCB** (**R**esidual **C**urrent **C**ircuit **B**reaker) before using it on construction sites.

The tool must be operated **under supervision.**
Heat can ignite flammable materials which are not in view.

The device machine may only be used by **qualified specialists** or under their supervision. Children are not authorized to use this device.

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

Device must not be lifted at additional weight / end weight.

Disposal

Electrical equipment, accessories, and packaging should be recycled in an environmentally friendly way. When you are disposing of our products, please observe the national and local regulations. **For EU countries:** Do not dispose of electrical equipment with household refuse.

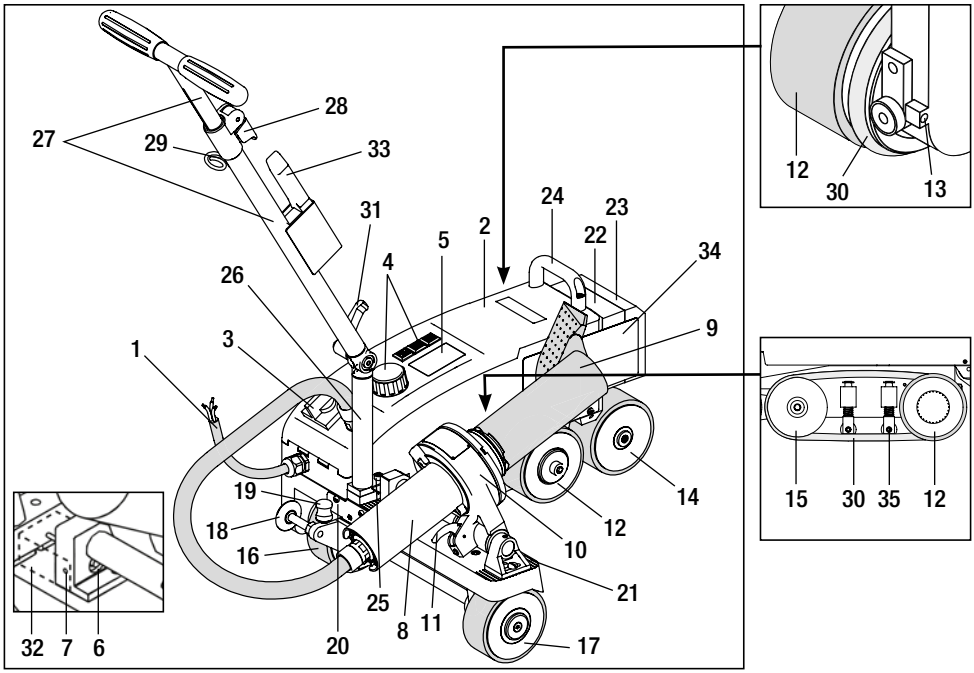
Technical data

Voltage	**V~**	200, 230 EU, 400 ★	**V~**	200, 230 US, 400 ★
Power consumption	**W**	4200, 3680, 5700	**W**	4200, 4600, 5700
Frequency	**Hz**	50 / 60	**Hz**	50 / 60
Temperature	**°C**	100 – 620 stepless	**°F**	212 – 1148 stepless
Speed	**m/min.**	0.7 – 12 stepless	**ft/min**	2.3 – 39.4 stepless
Welding pressure	**N**	approx. 190 (2 weights)	**N**	approx. 190 (2 weights)
Air flow	**%**	50 – 100	**%**	50 – 100
Emission level	**L_{pA} (dB)**	70	**L_{pA} (dB)**	70
Weight without power supply cord	**kg**	35	**lbs**	77
Dimensions L× W× H	**mm**	650 × 430 × 330	**inch**	25 × 17 × 13
Mark of conformity		2		
Protection class I		1		

Technical data and specifications are subject to change without prior notice

★Mains voltage cannot be switched over

Description of device



1 Power supply cord
2 Housing
3 Main switch
4 Controls
5 Display
6 Drive sensor
7 Locking screw
8 Hot air blower
9 Welding nozzle
10 Tool holder
11 Locking lever
12 Pendulum roller
13 Adjustment screw for tracking
14 Track-alignment roller
15 Guide roller
16 Adjustable transport roller
17 Transport roller
18 Guide roller
19 Shift spring for transport roller
20 Gate
21 Scale for tool adjustment
22 Additional weight
23 End weight
24 Carrying handle
25 Cheese head screw
26 Lower guide bar
27 Upper guide bar
28 Clamping lever, upper guide bar
29 Holder for power supply cord
30 Round belt
31 Clamping screw, lower guide bar
32 Drive sensor covering
33 Wire brush
34 Welding plate
35 Hold-down devices for round belts

Main switch (3)

For switching the automatig hot-air welding machine VARIMAT V2 on/off

Controls (4)

e-Drive
The e-Drive serves as a navigator.
It has two functions

Turn left or right, in order to set several menus or values

Press to confirm or to activate

Drive
Setting the drive speed

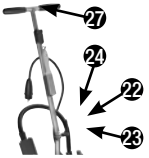
Heating
Setting the welding temperature

Blower
Setting the air volume

Transport

Use the storage case included in the scope of delivery as transport protection for the automatic hot-air welding machine VARIMAT V2. The storage case is provided with a handle and transport rollers.

VARIMAT V2 may not be lifted with **additional weight (22)** and **end weight (23).**



Carrying handles on the storage case as well as **Carrying handle (24)** and **guide bar (27)** on the **hot-air welding machine** may not be used as transport help by crane.

For lifting up the hot-air welding machine by hand use **carrying handle (24)** and **guide bar (27).**

For transport preparation let **welding nozzle (9)** of the VARIMAT V2 cool down

Moving VARIMAT V2 out of carrying case:

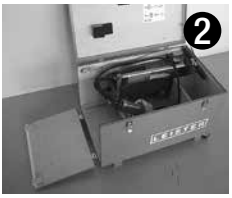
❶ Open carrying case at top
❷ Open carrying case at sides
❸ Open **clamping screw, lower guide bar (31)** and move **lower guide bar (26)** into required position; tighten **clamping screw, lower guide bar (31)**
❹ Open **clamping lever, upper guide bar (28)**
Adjust **upper guide bar (27)** to required height; tighten **clamping lever, upper guide bar (28)**
❺ Carefully move the automatic hot-air welding machine VARIMATV2 out of the carrying case

Moving VARIMAT V2 in carrying case:

❺ Carefully move the automatic hot-air welding machine VARIMAT V2 from the side in the carrying case
❹ Open **clamping lever, upper guide bar (28)** and move in **upper guide bar (27)**; tighten **clamping lever, upper guide bar (28)**
❸ Open **clamping screw, lower guide bar (31)** and move **guide bar (27)** into transport position; tighten **clamping screw, lower guide bar (31)**
❷ Close carrying case at sides
❶ Close carrying case at top

Transport:

❻ For transporting the storage case by hand use carrying handles.



Joining force

- The welding pressure is transmitted to the **pendulum roller (12)**.
- As necessary, the **additional weights (22)** and the **end weight (23)** can be put on (see illustration A).

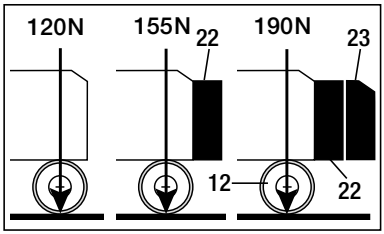


Illustration A

Operating preparation

- Before putting into operation, check **power supply cord (1)** and connector as well as extension cable for electrical and mechanical damages.
- Move **lower guide bar (26)** into the required position using **clamping screw, lower guide bar (31)** and **upper guide bar (27)** using **clamping lever, upper guide bar (28)**
- Clip strain relief of **power supply cord (1)** in **holder (29)**
- Check the basic setting of the **welding nozzle (9)** (ex works illustration B and C)
- **Transport setting**
  - Swivel the **guide roller (18)** upwards
  - Release the **transport roller (16)** by raising the **guide bar (27)**
  - Push the **transport roller (16)** by applying a little pressure to the **shift spring (19)** to the left until it stops (illustration D)
  - Position the **hot-air blower (8)** by pulling the **locking lever (11)** and swivel it up until it locks

Illustration B

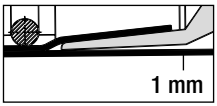


Illustration B

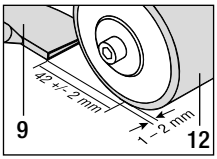
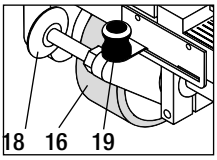


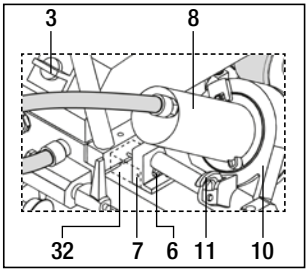
Illustration D



Connect tool to rated voltage.
Rated voltage stated on the device must correspond to line/mains voltage.
Extract hot-air blower in case of **power breakdown**.

Drive sensor adjustment

If the drive motor does not start automatically after moving in the **welding nozzle (9)**, the **drive sensor (6)** adjustment is possibly incorrect



Action

- Set **drive sensor (6)** as follows:

– Turn off **main switch (3)** OFF
– Remove **drive sensor covering (32)**
– Lower **hot-air blower (8)** and move as far as the left limit stop
– **Locking lever (11)** must latch in
– Loosen **locking screw (7)** for drive sensor
– Slide **drive sensor (6)** on **tool holder (10)**; IMPORTANT: Sensing distance 0.2 – 0.5 mm
– Tighten **locking screw (7)** for drive sensor
– Mount **drive sensor covering (32)**
– Move out **hot-air blower (8)** as far as limit stop and swivel up
– Check function

If the drive motor still does not start automatically, the service centre must be contacted.

Device positioning

- Lift automatic hot-air welding machine applying pressure onto **guide bar (27)** and move to weld position
- Take **welding plate (34)** from holder and position according to Illustration E

WARNING: The **welding plate (34)** may only be removed from the holder and positioned if the **welding nozzle (9)** has cooled down.

- Release the **transport roller (16)** by lifting it with the **guide bar (27)**
- Push the **transport roller (16)** to the left until it stops by applying light pressure to the **shift spring (19)**
- Swivel **the guide roller (18)** down
- The **guide roller (18)** should be set parallel to the edge of the **pendulum roller (12)** (see illustration F)
- Do a test run
- To correct the tracking, adjust the **adjustment screw for tracking (13)** (see illustration G and H, and the function notes on the automatic hot-air welding machine)

Illustration E

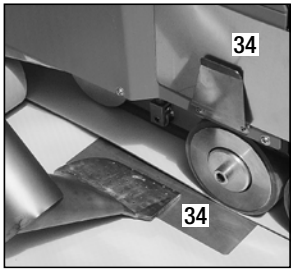


Illustration F

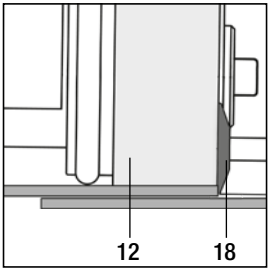


Illustration G

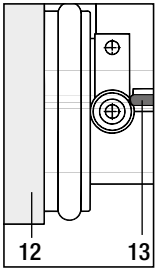
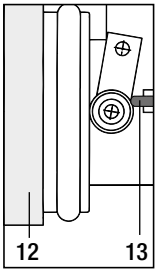


Illustration H



Welding procedure

Perform a test welding according to the welding instructions of the material manufacturer and the national standards or guidelines. Approve the test welding.

- Set welding parameters drive, heating and blower (chapter 1, Work mode)
- Welding temperature must be reached (heating up time approx. 3 - 5 min)
- Pull **locking lever (11)**, lower **hot-air blower (8)** and move in **welding nozzle (9)** between the overlapping sheets as far as the limit stop; drive motor starts automatically

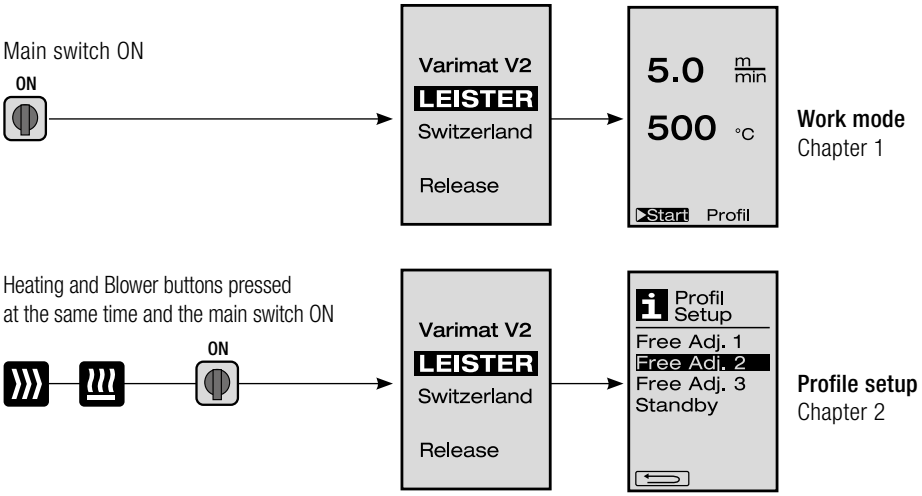
No automatic start, see **Drive sensor adjustment** section

- Machine can be started manually with the **controls (4)** Drive and e-Drive
- The automatic hot-air welding machine is guided along the overlap at the **guide bar (27)**. Guide the automatic hot-air welding machines without pressure onto the **guide bar (27)** during welding. Pressure on the **guide bar (27)** can lead to welding errors. Observe position of the **guide roller (18)**
- After the welding pull **locking lever (11)**, move out **hot-air blower (8)** as far as the limit stop and swivel up to the latching point
- After finishing the welding work, use e-Drive (press 2 x) to switch off heating
  In this way, the **welding nozzle (9)** is cooled down and the blower automatically switches off after approx. 4 minutes (section 1.8, Cooling down)
- Turn off **main switch (3)** OFF

120 230 Disconnect **power supply cord (1)** form the line/mains.

- Clean **welding nozzle (8)** with **wire brush (33)**

Button combinations

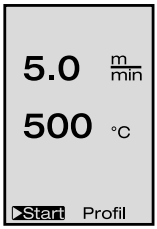


1. Work mode

1.1 Setpoint display (after switching on the device)

Main switch (3) ON 

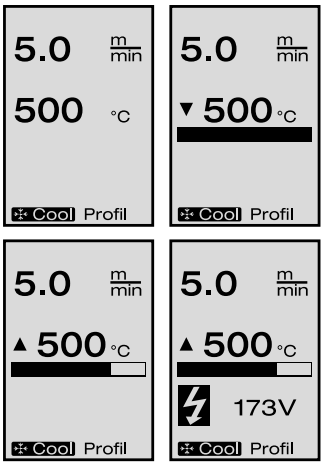
- After switching on the device, the values last set appear on the **display (5)** (Fig. 3).
- Heating, plower and drive are switched off in this menu.
- The user can use the **controls (4**) here to perform all settings which are described in the following chapters.
- If, however, the heating element temperature is higher than 80°C when switching on, the display will immediately change to the Cool down mode (section 1.8, Cooling down) in which the blower is always operated at full power, thus cooling down the **welding nozzle (9)**. It is possible to change back to Work mode from this mode at any time.
- If the heating element temperature reaches 60°C during cooling down, the blower will continue to operate for 2 minutes and then switches off automatically. The **display (5)** changes back to the Setpoint display (Fig. 3).
- Turning the e-Drive  to Profile allows various welding profiles to be selected (Fig. 4; section 1.7, Selecting profiles).



(Fig. 3)

(Fig. 4)

1.2 Work display



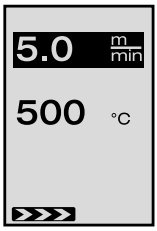
- Pressing the e-Drive starts the heating and blower, and the Setpoint display changes to the Work display.
- When the **welding nozzle (9)** is heating up, this is indicated on the **display (5)** with progress bar and arrow ▲ (up) together with the actual value of the welding temperature (flashing).
- If the mains voltage is outside (+/- 15%) the specified nominal voltage (200 V, 230 V, 400 V), this is displayed flashing with the symbol and the measured undervoltage/overvoltage.

  If the air volume is less than 100 %, the percentage indication changes with the symbol.

The welding result can be affected, depending on the undervoltage/ overvoltage.

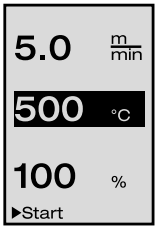
- If no button is pressed after a definite time **(welding nozzle (9) NOT in welding position)**, the Standby menu is displayed (section 1.9, Standby).
- If the welding nozzle is not swivelled in, the menus Cool Down (section 1.8, Cooling down) or Profiles (section 1.7, Selecting profiles) can be selected by turning the e-Drive .
- If the **welding nozzle (9)** is swivelled in, the two menu items disappear Start Profil on the **display (5)** and can no longer be selected.
- If the **welding nozzle (9)** is cooling down, this is indicated with filled out progress bar and arrow ▼ (down) as well as flashing actual value of the welding temperature on the **display (5)**.

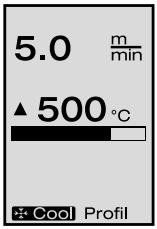
1.3 Setting the drive speed



- The drive speed can be adapted with the Drive button . This can be set by turning the e-Drive in 0.1 m/min. increments from 0.7 m/min. to 12.0 m/min. This setting can be carried out with the drive switched on or off.
- If the **welding nozzle (9)** is not in the welding position, the symbol will appear at the lower left edge of the **displays (5)**.
- The drive can be switched on by pressing the e-Drive , the following symbol Stop appearing. The drive speed can be adjusted directly by turning the e-Drive .
- Pressing the e-Drive again executes the Stop command, which switches off the drive. The Setpoint display or Cool down appears on the display.
- If no entry is made by the **controls (4**) within 3 seconds, the new drive speed will be accepted. The Setpoint display or Cool down appears on the **display (5)**.
- If the Drive button is pressed for 3 seconds, the display will change to another menu (section 1.6, Length measurement, blower and drive counter).
- You can change to the relevant menu by pressing the Heating or Blower button.

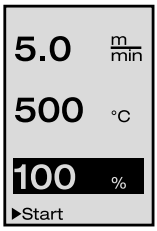
1.4 Setting the welding temperature





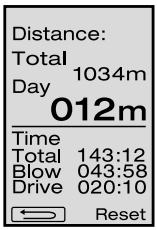
- The welding temperature can be changed with the Heating button . The welding temperature can be set in 10°C increments from 100°C to 620°C by turning the e-Drive . The setting is accepted after 3 seconds, as long as no button is pressed within these 3 seconds.
- If this menu is called up from the Setpoint display, heating and blower can be started by pressing the e-Drive . Once the heating is switched on, the cool down can be selected (section 1.8, Cooling down).
- If the Heating button is pressed within 3 seconds, the **display (5**) will change and the mains voltage will appear below the drive. This call-up is only possible from the Work display (section 1.2).
- The air volume is automatically reduced at a set welding temperature of 500°C and higher. However, the user can manually adjust the air volume using the Blower button (see section 1.5).
  If a star appears after the air volume display 100* , achievement of the welding temperature is no longer ensured.
- You can change to the relevant menu by pressing the Drive or Blower button.

1.5 Setting the air volume



- The air volume can be changed with the Blower button . The air volume can be set in 5% increments from 50% to 100% by turning the e-Drive . The setting is accepted after 3 seconds, as long as no button is pressed within these 3 seconds. If the air volume is set to 100%, no information will appear on the display (5).
- The air volume is automatically reduced at a set welding temperature of 500°C and higher. The air volume can be increased manually by turning the e-Drive . If a star appears after the air volume display **100*** , achievement of the welding temperature is no longer ensured.
- If this menu is called up from the Setpoint display, heating and blower can be started by pressing the e-Drive .
- The cool down menu can be selected by pressing the e-Drive (section 1.8, Cooling down).
- You can change to the relevant menu using the Drive button or Heating button .

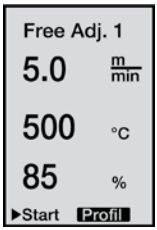
1.6 Length measurement, blower and drive counter



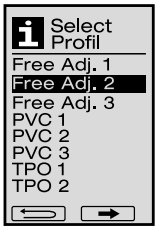
(Fig. 6)

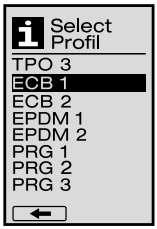
- This menu (Fig. 4) appears if the Drive button is pressed for at least 3 seconds.
- The menu displays all operating times and the distance which the device has travelled since being switched on. The total distance (here: 1034 m) cannot be changed and shows the entire path taken since starting up.
- The daily distance (here: 012 m) is not reset automatically, but instead must be annulled by the user via «Reset» by pressing the e-Drive .
- The Time values concern the operating time for the individual components of the device. The time is assigned to the blower «Blow» (here: 043:58) and the drive «Drive» (here: 020:10). The «Total» time refers to the operating time. It counts the hours and minutes (here: 143:12) during which the **main switch (3)** is switched on.
- If the Back arrow is selected by pressing the e-Drive , you will be taken back to the menu from which the Drive button has been pressed.

1.7 Selecting profiles



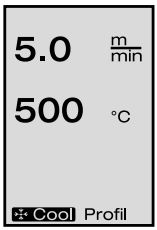
- If the display Profil at the bottom right of the **display (5)** is activated, profiles can be loaded by pressing the e-Drive . The display «Select Profile» then appears.
  A profile can be selected by turning the e-Drive . The profiles Free Adj. 1, 2 and 3 can be defined by the user him/herself (chapter 2, Profile setup). All other profiles have permanently assigned values and cannot be defined by the user.
- Turning the e-Drive activates left or right arrows on the **displays (5)** at the bottom. Right arrow by pressing the e-Drive to the next page. Left arrow by pressing the e-Drive to the previous page.
- If the Back arrow is activated by turning the e-Drive , you will be taken back to the menu by pressing the e-Drive , from which the Profile menu has been selected.





Perform a test welding according to the welding instructions of the material manufacturer and the national standards or guidelines. Approve the test welding.

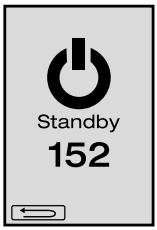
1.8 Cooling down



- If the symbol Cool is selected by pressing the e-Drive , the menu «**Cool down OK?**» will appear. Pressing the e-Drive actives the symbol OK at the bottom right of the **display (5)**, thereby initiating the cooling down process.
- During the cooling down process, the air volume is increased to 100% and the instantaneous welding temperature displayed.
  If the welding temperature of 60 °C is fallen below, the blower will continue to operate for 2 minutes and will automatically switch off after this time expires. The display changes to the Setpoint display.
- After pressing the e-Drive the **display (5)** shows the last set values for blower and heating.
- If the Cool down is active, the drive can be switched on/off manually via the Drive button .
  The Heating button and Blower button do not have any function.

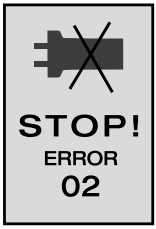
1. Work mode

1.9 Standby



- If the **welding nozzle (9)** is not in the welding position and no button is pressed during a definite time, the Cool down mode will automatically start after the standby time has passed.
  The cooling down process is initiated.
- If the e-Drive is pressed before the countdown (180 seconds) has finished in Standby mode, the display will change back to the initial state.
- For setting the standby time, (section 2.2, Standby setup)

1.10 Error message

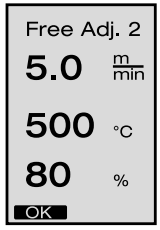


- If a malfunction occurs in the automatic hot-air welding machine VARIMAT V2, a message will appear on the **display (5)**, which is also provided with an error code. This code stands for a more exact definition of the error which can be seen in the lower list.
- In case of error 02 and error 40, separate symbols are displayed
- An acoustic warning signal will sound in the event of serious error messages
- If the setpoint/actual welding temperature divergence is > 20 °C, an acoustic warning signal will sound
- In case of all other errors, the spanner is displayed for the service prompt

Error	Type of error
Err01	Interruption or short-circuit of the temperature probe
Err02	Heating element defective (interruption in one/both winding(s)
Err04	Triac defective (one or both triacs are defective)
Err08	Blower motor defective
Err40	Undervoltage 25% (mains voltage 75%)

2. Profile setup (see button combination)

2.1 Creating Profiles



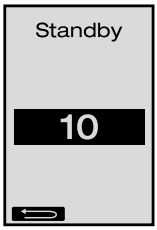
- In the Profile Setup, 3 individual profiles can be created, in which all three parameters can be freely set and then saved by pressing the e-Drive .
- The various menu items can be selected using the **controls (4)**. Pressing the e-Drive will take you back to the Profile Setup selection.

Perform a test welding according to the welding instructions of the material manufacturer and the national standards or guidelines. Approve the test welding.

2. Profile setup (see button combination)

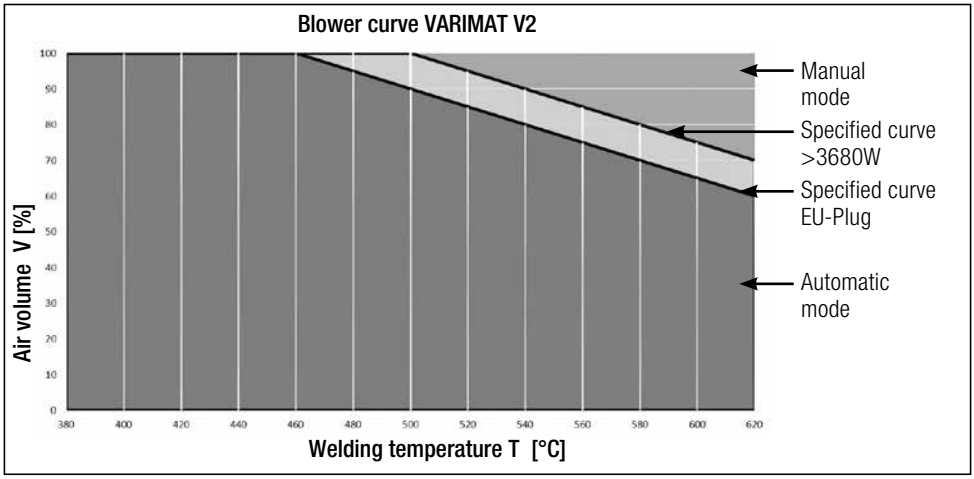
2.2 Standby setup

- The standby time can be set in this setup.
  - Turning the e-Drive allows the time to be set from 5 to 120 minutes. 40 minutes are set at the factory.
- Pressing the e-Drive will take you back to the Profile setup selection.



FAQ Error – Cause – Remedy

- Machine switches off automatically
  – The machine is automatically switched off after a set time with Standby mode (factory setting 40 minutes).
- Quality of the welding process is insufficient.
  – Check drive speed, welding temperature and air volume
  – Clean **welding nozzle (9)** with **wire brush (33)**
  – **Welding nozzle (9)** is incorrectly set (see Operating preparation, page 23)
- The set welding temperature is not reached
  – The air volume is set too high
  – Insufficient voltage
- Startup mechanism not working
  – Adjust drive sensor (see page 23)
- Device does not move straight
  – Device positioning (see page 24)
- A star appears in the air volume display 100*
  – Blower is no longer on the specified curve, but instead in manual mode (see blower curve)
- Why is the air volume automatically adjusted when setting the welding temperature above 500°C ? (see blower curve)
  – Achievement of the welding temperature is not ensured at too high air volume



Types of Leister VARIMAT V2

Article no. 137.821	VARIMAT V2, CEE plug	400 V~ / 5700 W
Article no. 138.982	VARIMAT V2, without plug	230 V~ / 4600 W
Article no. 138.108	VARIMAT V2, Schuko plug	230 V~ / 4600 W
Article no. 139.734	VARIMAT V2, Japan plug	200 V~ / 4200 W

Accessories

Only Leister accessories should be used

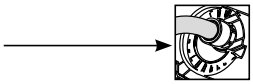
Article no. 139.048	Carrying case (included in scope of delivery)
Article no. 138.817	Wire brush (included in scope of delivery)
Article no. 132.429	Welding plate (included in scope of delivery)
Article no. 107.067	Additional weight
Article no. 113.995	Grip nozzle 30 mm
Article no. 113.600	Grip nozzle 40 mm
Article no. 110.714	Maintenance set

Training

- Leister Technologies AG and its authorised Service Centres offer free welding courses and training. Informationen below www.leister.com.

Maintenance

- The air inlet on the **hot-air blower (8)** must be cleaned with a brush if soiled
- Clean **welding nozzle (9)** with **wire brush (33)**
- Check **power supply cord (1)** and plug for electrical and mechanical damages



Service and repair

- If the drive counter reaches 400 h or the blower counter reaches 2000 h, the message «Maintenance servicing» will appear on the display the next time the **main switch (3)** is switched on. This message is displayed for 10 seconds and cannot be skipped by the **controls (4)**.
- Repairs should only be carried out by authorised **Leister Service Centres.** They guarantee a correct and reliable **repair service within 24 hours,** using original spare parts in accordance with the circuit diagrams and spare parts lists.

Warranty

- For this tool, the guarantee or warranty rights granted by the relevant distributor/seller shall apply. In case of guarantee or warranty claims any manufacturing or workmanship defects will either be repaired or replaced by the distributor at its discretion. Warranty or guarantee rights have to be verified by an invoice or a delivery document. Heating elements shall be excluded from warranty or guarantee.
- Additional guarantee or warranty claims shall be excluded, subject to mandatory provisions of law.
- Warranty or guarantee shall not apply to defects caused by normal wear and tear, overload or improper handling.
- Warranty or guarantee claims will be rejected for tools that have been altered or changed by the purchaser.

Your authorised Service Centre is:

Allied Power Tools
12/ 76 Rushdale St, Knoxfield VIC 3180 Australia
T: + 61 3 9764 2911
E: sales@alliedpowertools.com.au
W: www.alliedpowertools.com.au

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Art. 137.889 (part 1)