# Weller®

## WAD 101 / WAD 101IG

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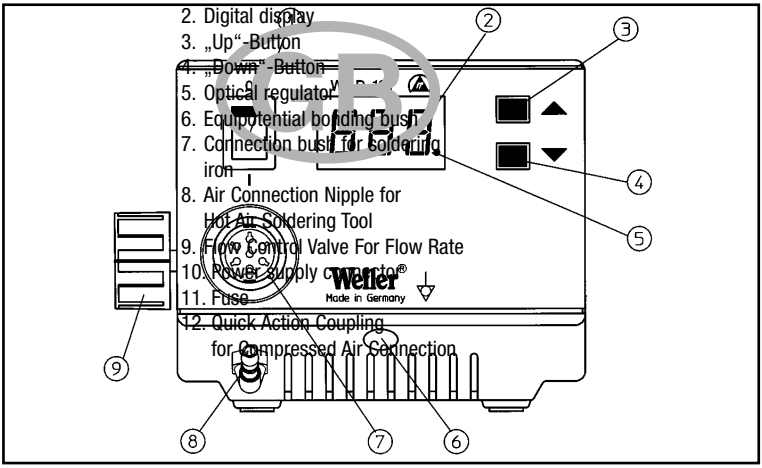


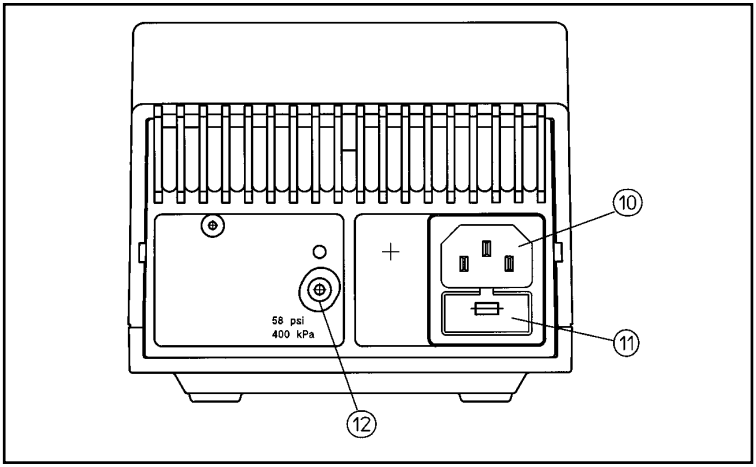


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**WAD 101**


**WAD 101IG**


**WP 80IG**

**WP 120IG**

Thank you for placing your trust in our company by purchasing the Weller hot air station WAD 101 / WAD 101IG. Production was based on stringent quality requirements which guarantee the perfect operation of the device.

## ⚠ 1. Caution!

Please read these Operating Instructions and the attached Safety Information carefully prior to initial operation. Failure to observe the safety regulations results in a risk to life and limb.

The manufacturer shall not be liable for damage resulting from misuse of the machine or unauthorised alterations.

The Weller hot air station WAD 101 /WAD 101IG corresponds to the EC Declaration of Conformity in accordance with the basic safety requirements of Directives 2004/108/EC, 2006/95/EC and 2011/65/EC (RoHS).

## 2. Description

### 2.1 Control Unit

The WAD 101 is a hot air station that features a wide variety of functions.

**Control unit WAD 101IG**

The WAD 101IG is an inert gas soldering station designed for the operation of inert gas soldering irons WP 80IG and WP 120IG.

As a result of the use of a microprocessor, the unit is straightforward and easy to use. The control electronics ensure optimal adaptation of the control characteristics to different soldering tools. The soldering tools themselves are detected automatically and assigned the appropriate control parameters. Excellent dynamic behaviour is made possible by the particularly powerful 24 W heater elements. The soldering tool is thus of universal application.

The required temperature can be set via 2 buttons (UP/DOWN). Temperatures from 50°C - 550°C (122°F - 999°F) are realisable with hot air soldering tools. When a soldering iron is connected, the adjustment range is automatically limited to max. 450°C (842°F). Required and actual values are displayed digitally. A flashing red LED indicates when the selected temperature is reached, this LED serves as an optical regulator monitor. The continuous illumination of the LED indicates that the system is warming up.

In the case of the control unit WAD 101, air flow is controlled by a finger switch integrated in the handle. The air flow is controlled via a finger operated switch integrated in the handle. The flow rate can be adjusted continuously over the range from approx. 0-10 l/min via a control valve.

The hot air output is free of static charge.

In the case of **control unit WAD 101IG,** gas flow is controlled by tool stand WDH 10T. The flow rate can be adjusted within the 0-5 l/min range.

Various methods of equipotentially bonding the soldering iron bit, a zero voltage switch, and the anti-static design of the control unit and soldering tools supple ment the high standard of the unit. The possibility of connecting an external input unit extends the functional diversity. Additional functions including timing and interlocking can be realised using the WCB 1 and WCB 2

Input Units, available as optional extras. The extended features of the WCB 2 Input Unit include an integrated temperature measurement unit.

### 2.3 Soldering irons

**HAP 1:**

100 W hot air soldering tool with integrated finger switch. Suitable for soldering and desoldering surface mounted components. A wide range of nozzles makes the tool of universal application.

The hot air tool can cannot be operated with WAD 101IG

**WMP:**

The Weller Micro Soldering Iron WMP is suitable for processing SMD electronics due to its manageable design. The short distance between grip and soldering tip makes ergonomic handling of the 65 W soldering iron possible when carrying out very fine soldering tasks.

**MPR 80:**

The Weller Peritronic MPR 80 soldering iron has an adjustable workingangle of 40° to enable an individually ergonomic soldering process. The 80-watt power and slim design makes this soldering iron suitable for fine soldering work.

**WTA 50:**

The unsoldering tweezers WTA 50 were specially designed for unsoldering SMD components. Two heating elements (2 x 25 watts), each with its own temperature sensor, ensure constant temperatures at both ends.

**LR 82:**

High-performance 80 watt soldering iron for soldering work with high heat requirements. The soldering tip is attached by a bayonet catch to ensure correct position when using different tips.

**Technical Data**

| | | |
|---|---|---|
| Dimensions in mm: | 166 x 134 x 101 (L x B x H) | |
| Mains Voltage: | 230 V / 50 Hz (120 V / 60 Hz) | |
| Power Consumption WAD 101: | 105 W | |
| Power Consumption WAD 101IG: | 150 W | |
| Protection Class: | 1 (Control Unit) and 3 (Soldering Tool) | |
| Fuse: | 230 V: T 630 mA (120 V: T 1,0 A) | |
| Temperature Regulation: | °C Version | Hot Air 50°C - 550°C |
| | | Soldering Iron & inert gas soldering irons 50°C - 450°C |
| | °F Version | Hot Air 122°F - 999°F |
| | | Soldering Iron & inert gas soldering irons 122°F - 842°F |
| Precision: | Hot Air ± 30°C (± 54°F) | |
| | Soldering Iron & inert gas soldering irons ± 9°C (± 17°F) | |
| Flow Rate: | Approx. 0 - 10 l/min | |
| Control range of WAD 101IG: | approx. 0 - 5 l/min. | |
| Compressed Air: | Inlet pressure 400 kPa (58 psi), oil-free, dry compressed air or nitrogen (N2) | |
| Compressed Air Connection: | Compressed air hose of 6 mm (0.24") diameter | |
| Inert gas pressure: | The inlet pressure is set permanently to 200 kPa by a pressure regulator. The pressure regulator must not be adjusted. | |

**WP 80 / WSP 80:**
The soldering iron WP 80 / WSP 80 is characterized by its capacity for reachingthe soldering temperature quickly and precisely. Its slim design and heating power of 80 watts makes universal usage possible - from extremely fine to high-temperature soldering work. Work can be continued immediately after switching soldering tips, since the temperature is reached again quickly.

**See "Accessories" for additional tools.**

## 3. Commissioning

Place the soldering tool in the holder. Insert compressed air hose with 6 mm outer diameter in the quick action coupling (12). Provide supply of compressed air with 400 kPa (58 psi) dry, oil-free compressed air or nitrogen (N2).

**Warning:**
**When using nitrogen, attention must be paid to satisfactory room ventilation.**

Plug the electrical lead from the soldering tool in the 7 pole socket (7) on the front panel and lock. Connect the compressed air hose to the compressed air connection nipple (8). Check that the mains voltage matches that on the rating plate and that the mains switch (1) is in the off position. If the mains voltage is correct, plug the control unit into the mains.

**Warning:**
**Do not direct hot air soldering tools at people or inflammable objects.**

Switch on the unit at the mains switch (1). When the unit is switched on, a self-test is performed during which all the indicators (2) are illuminated. The temperature set (required value) and the temperature scale (°C/°F) are then briefly displayed. The electronics then switch automatically to the display of the actual value. The red dot (5) on the display (2) illuminates. This dot serves as an optical regulation monitor. Continuous illumination means that the system is heating up. Flashing indicates that the operating temperature has been reached.

**Setting the temperature**
The digital display (2) shows the actual value temperature. By pressing the UP or DOWN key (3, 4) the digital display (2) switches to the setpoint. The setpoint can be changed by tapping or by firmly pressing the UP or DOWN button (3, 4) in the desired direction. Pressing the button will change the setpoint quickly. The digital display (2) returns automatically to the actual value approximately 2 seconds after releasing the button.

**Adjusting the Air Flow Rate**
The air flow rate required can be adjusted at the flow control valve (9). Turning the control valve (9) to the left increases the flow rate. Air is fed to the hot air soldering tool as long as the finger operated switch is held down.

**Standard setback for control unit WAD 101:**
Setting back the set temperature to 150°C. The setback time, which follows the switching of the soldering station to standby mode, is 20 minutes. After three setback times (60 minutes) the "AUTO-OFF" function is activated. The soldering tool is switched off (blinking line on the display).

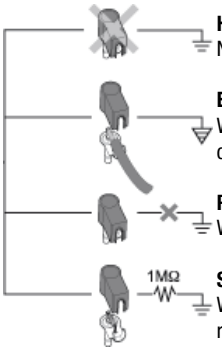
**Setting:** When switching on, hold the ”UP” key (3) until ON or OFF appears in the display.

The setting is saved when the "UP" button is released. Repeat this step to change.

**Standard setback for control unit WAD 101IG**
After placing the soldering iron on its stand, the nominal temperature is reduced to 180°C and inert gas feed is shut off after 2 min. The "AUTO-OFF" function is deactivated.

## 4. Equipotential bonding

The various circuit elements of the 3.5 mm jack bush make 4 variations possible:




**Hard-grounded:**
No plug (delivery form)

**Equipotential bonding:**
With plug, equalizer at center contact (impedance 0 Ohms)

**Potential free:**
With plug

**Soft-grounded:**
With plug and soldered resistance. Grounding via set resistance value.

## 5. Instructions for use

**External input unit WCB 1 and WCB 2 (optional)**
The following functions are possible when using an external input unit.

● **Offset:**
The real temperature of the soldering iron can be changed by ± 40°C by input of a temperature offset.

● **Setback:**
Reduction of the required temperature set to 150°C / 300°F (standby). The set-back time, the time after which the soldering station switches into standby mode, can be adjusted from 0-99 minutes. The set-back condition is indicated by a flashing actual value display. After a period equal to three times the set-back time, „AUTO-OFF“ is activated. The soldering iron is switched off (flashing dash on the display). The set-back or auto-off condition is ended by pressing a button or finger switch pressure. During this process the required value set is briefly displayed.

● **Lock:**
Locking the setpoint temperature. Settings cannot be changed after the soldering station has been locked.

● **°C/°F:**
Switching the temperature display from °C to °F, and vice versa.

● **Window:**
Limitation of the temperature range to max. ± 99°C based on a locked temperature resulting from the "LOCK” function. The locked temperature represents the median point of the adjustable temperature range.

● **Cal:**
Re-adjustment of the soldering station (WCB 2 only).

● **PC interface:**
RS232 (WCB 2 only).

● **Temp. gauge:**
Integrated temperature gauge for thermal element Type K (WCB 2 only).

**Hot Air Soldering Tool**
The hot air nozzles are screwed into the heater element. To change the nozzle use the 8 SW socket spanner and lock the heater element with an open ended spanner.

**Important:**
**The maximum thread depth is 5 mm (0.2").**
**A longer thread will irreparably damage the heater element.**

Nitrogen N2 reduces oxidation and flux remains active for longer. We recommend the nitrogen N2 that is available in steel bottles. The bottle must be equipped with a 0-10 bar pressure reducer.

**Soldering Iron**
The transition between the heater element/sensor and the soldering iron bit must not be degraded by dirt, foreign bodies or damage because these will have an effect on the precision of temperature regulation.

When heating up for the first time, wet the selectively tinnable soldering iron bit with solder. This removes oxide layers and soiling that have formed during storage. Always ensure that the soldering iron bit is well tinned during breaks in soldering and when placing in the holder. Do not use aggressive fluxes.

**Important:**
**Always ensure that the soldering iron bit is correctly seated.**

The soldering equipment has been set up for a medium size bit or nozzle. Variations may occur if the bit is changed or if other bit shapes are used.

**Figure: HAP 1 Nozzle Range, see page 93**
**Figure: Circuit Diagram, see page 94**
**Figure: Exploded Diagram, see page 95**

## 6. Accessories

| | |
|---|---|
| T005 33 114 99 | Hot air set HAP 1 |
| T005 29 161 99 | Soldering iron set WSP 80 |
| T005 33 131 99 | Soldering iron set MPR 80 |
| T005 33 113 99 | Soldering iron set LR 82 |
| T005 33 133 99 | Soldering iron set WTA 50 |
| T005 27 131 99 | Soldering bath WSB 80 |
| T005 33 155 99 | Soldering iron set WMP |
| T005 27 028 99 | Preheating plate WHP 80 |
| T005 25 030 99 | Thermal insulating unit WST 20 |
| T005 31 180 99 | External input unit WCB 2 |
| T005 33 158 99 | Inert gas soldering set with tool stand WSP 80IG (PU WAD 101IG) |
| T005 29 198 99 | Inert gas soldering iron WP 120IG (PU WAD 101IG) |
| T005 15 161 99 | WDH 10T stand with Stop+Go function |

## 7. Scope of supply

**WAD 101**
Control Unit
Hot Air Soldering Tool HAP 1
Holder KH 27
Service Set
Nozzle changing tool
3.5 mm Jack Plug
Hot Gas Nozzle
Mains Cable
Operating Instructions
Safety Information

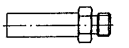
**PU WAD 101IG**
Control Unit
3.5 mm Jack Plug
Mains Cable
Operating Instructions
Safety Information

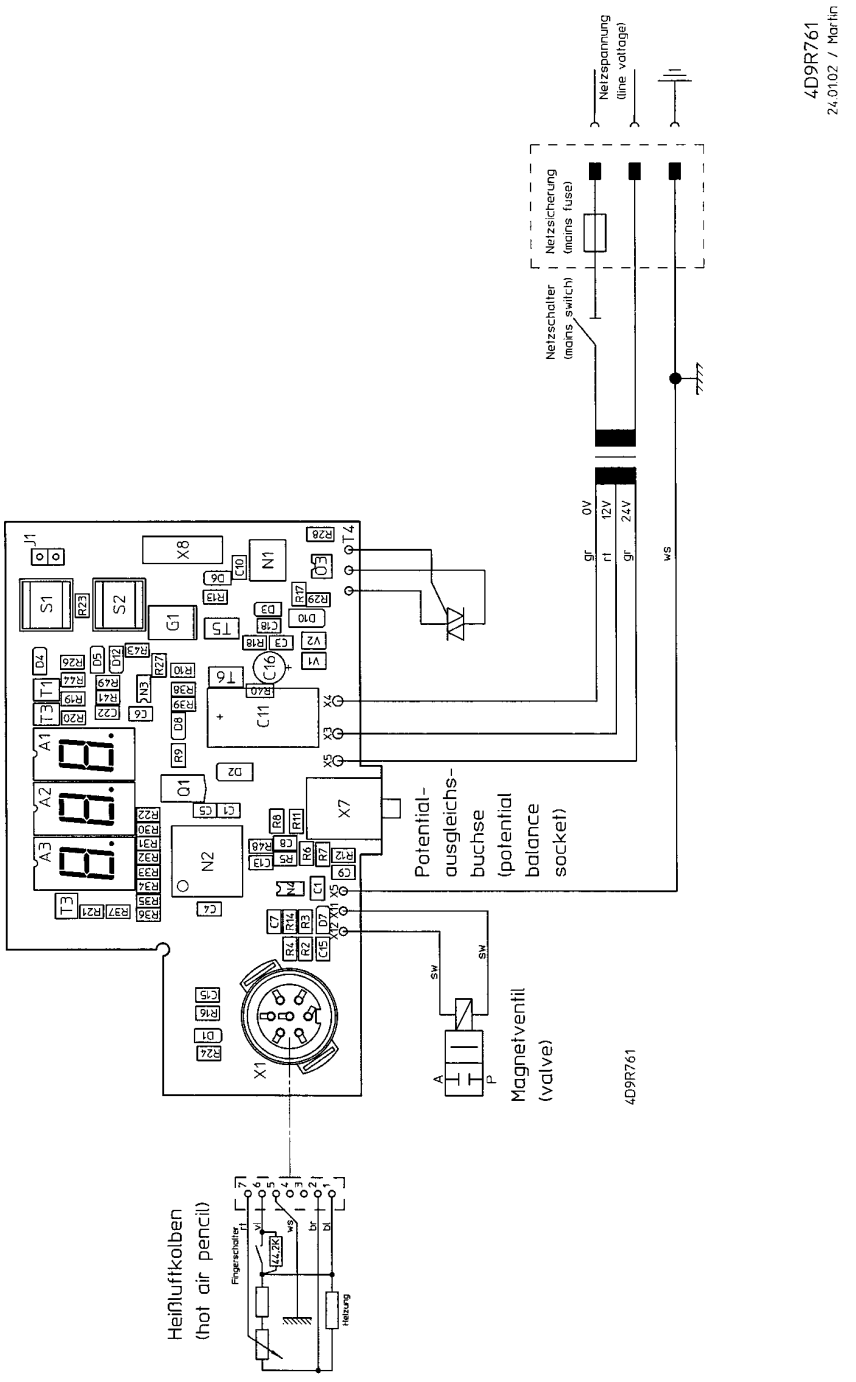
**PU WAD 101**
Control Unit
Mains Cable
3.5 mm Jack Plug
Operating Instructions
Safety Information

**Subject to technical alterations and amendments!**

**See the updated operating instructions at www.weller-tools.com**

## Hot Air Nozzles for HAP 1

| Model | | Description | Lenght X | Widht Y | Order-No. |
|---|---|---|---|---|---|
| | | Adapter M6 for HAP 200 | | | T005 87 617 28 |
| F02 |  | Flat nozzle | 8,0 mm | 1,5 mm | T005 87 277 74 |
| F04 |  | Flat nozzle | 10,5 mm | 1,5 mm | T005 87 277 73 |
| F06 |  | Flat nozzle | 12,0 mm | 1,5 mm | T005 87 277 72 |
| FD2 |  | Dual nozzle | ø 1,5 mm | 8,0 mm | T005 87 277 76 |
| FD4 |  | Dual noozle | ø 1,5 mm | 10,0 mm | T005 87 277 75 |
| R02 |  | Round nozzle | ø 0,8 mm | | T005 87 278 23 |
| R04 |  | Round nozzle | ø 1,2 mm | | T005 87 278 21 |
| R06 |  | Round nozzle | ø 3,0 mm | | T005 87 278 22 |
| R08 |  | Round nozzle, long bent | ø 2,0 mm | | T005 87 277 86 |
| R10 |  | Round nozzle | ø 2,0 mm | | T005 87 277 87 |
| **2-side heated (Type D)** | | | | | |
| D04 |  | Hot air nozzle, two sides heated, with hot plate | 10,5 mm | 10,5 mm | T005 87 277 79 |
| D06 |  | Hot air nozzle, two sides heated, with hot plate | 13,0 mm | 10,0 mm | T005 87 277 82 |
| D08 |  | Hot air nozzle, two sides heated, with hot plate | 15,0 mm | 10,0 mm | T005 87 277 81 |
| D10 |  | Hot air nozzle, two sides heated, with hot plate | 18,0 mm | 10,0 mm | T005 87 277 84 |
| **4 Side heated (Type Q)** | | | | | |
| Q02 |  | Hot air nozzle, four sides heated, with hot plate | 6,0 mm | 6,5 mm | T005 87 277 77 |
| Q04 |  | Hot air nozzle four sides heated, with hot plate | 6,0 mm | 9,0 mm | T005 87 277 78 |
| Q06 |  | Hot air nozzle four sides heated, with hot plate | 15,0 mm | 10,0 mm | T005 87 277 80 |
| Q08 |  | Hot air nozzle four sides heated, with hot plate | 12,0 mm | 15,0 mm | T005 87 277 83 |
| Q10 |  | Hot air nozzle four sides heated, with hot plate | 18,0 mm | 18,0 mm | T005 87 277 85 |
| SK709 | | Hot air nozzle, four sides heated, with hot plate | 12,0 mm | 12,0 mm | T005 87 278 12 |
| R01 |  | Measuring nozzle for thermo element | ø 0,5 mm | | T005 87 278 08 |


Leiterplatte Regelung °C 0058748915
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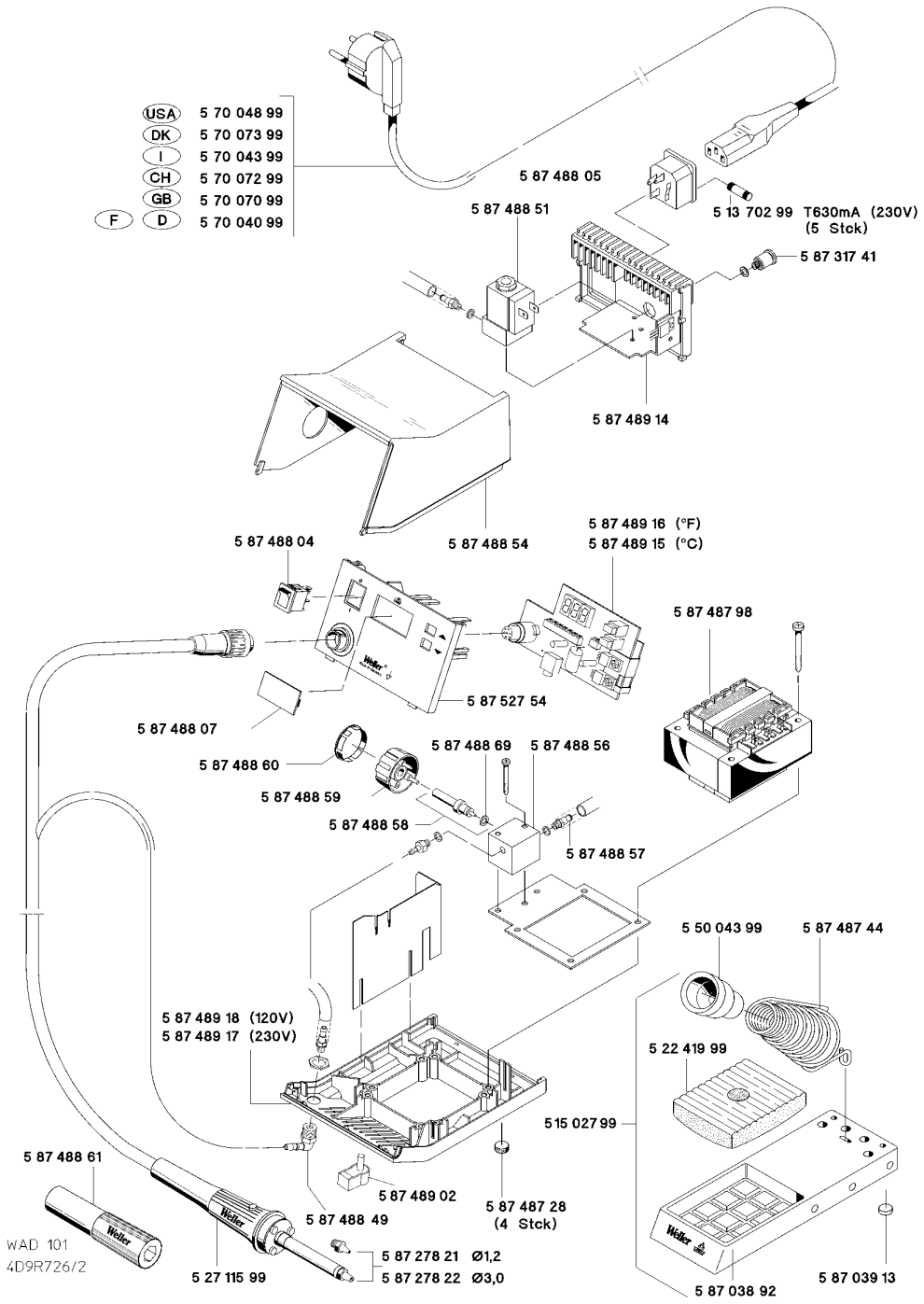
4D9R761
24.01.02 / Martin
Netzspannung
(line voltage)
Netzsicherung
(mains fuse)
Netzschalter
(mains switch)
0V
12V
24V
gr
rt
gr
ws
Potential-
ausgleichs-
buchse
(potential
balance
socket)
Magnetventil
(valve)
Heißluftkolben
(hot air pencil)
Fingerschalter
Heizung
4D9R761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DK 5 70 073 99
I 5 70 043 99
CH 5 70 072 99
GB 5 70 070 99
F D 5 70 040 99
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5 87 488 51
5 13 702 99 T630mA (230V)
(5 Stck)
5 87 317 41
5 87 489 14
5 87 488 54
5 87 489 16 (°F)
5 87 489 15 (°C)
5 87 488 04
5 87 487 98
5 87 527 54
5 87 488 07
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5 87 488 69
5 87 488 56
5 87 488 59
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5 87 488 57
5 50 043 99
5 87 487 44
5 87 489 18 (120V)
5 87 489 17 (230V)
5 22 419 99
5 15 027 99
5 87 488 61
5 87 489 02
5 87 487 28
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4D9R726/2
5 87 488 49
5 27 115 99
5 87 278 21 Ø1,2
5 87 278 22 Ø3,0
5 87 038 92
5 87 039 13

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