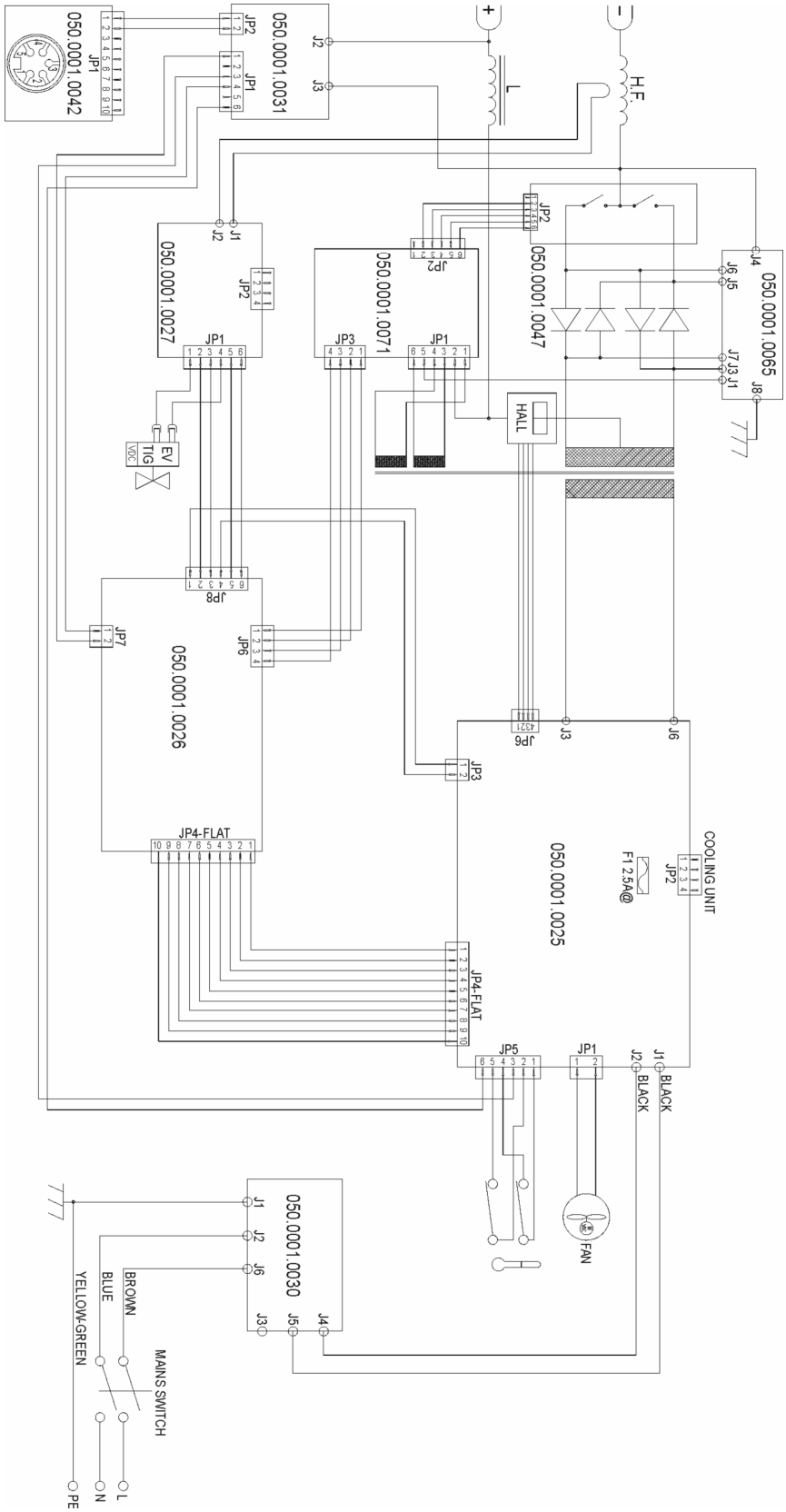
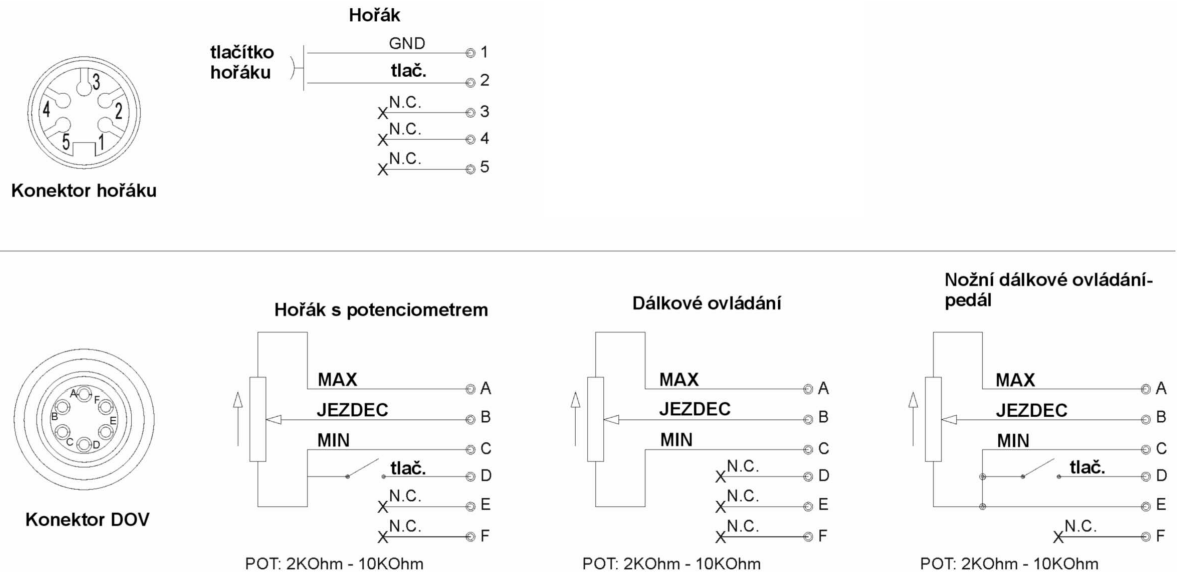
| SERVISNÍ MANUÁL ALFIN 200 AC/DC | SERVICE MANUAL ALFIN 200 AC/DC |
|---|---|

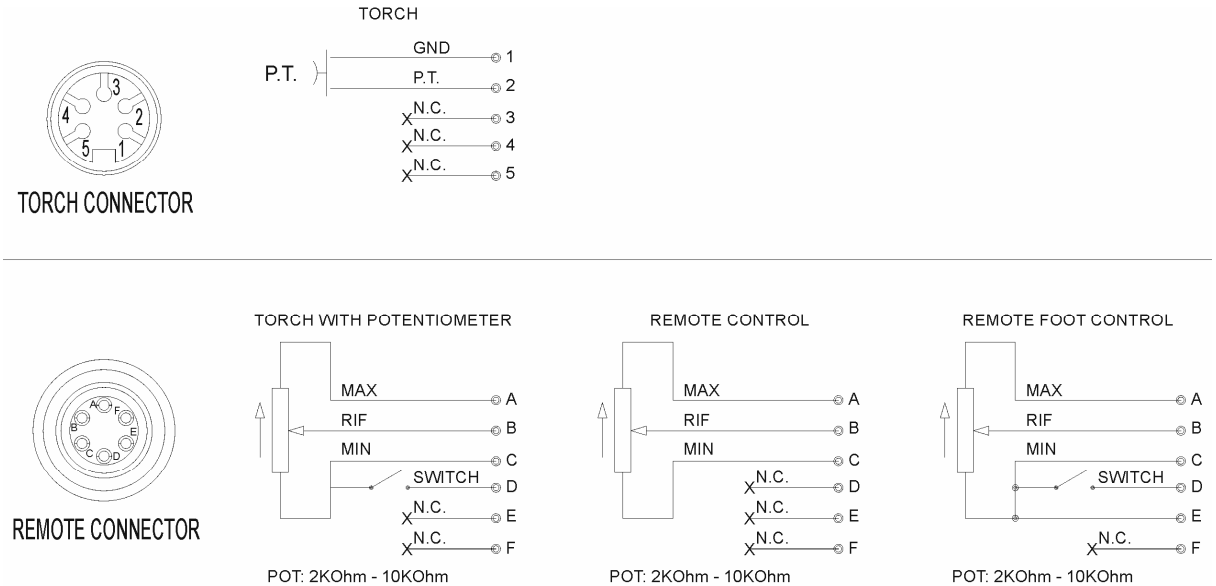

| 1. VAROVÁNÍ | WARNING |
|---|---|
| **UPOZORNĚNÍ – Pouze osoba splňující kvalifikaci danou zákonem je oprávněna opravovat stroj.** | **NOTE Only trained personnel are permitted to work inside the machine.** |
| **PŘED OTEVŘENÍM KRYTU STROJE JEJ ODPOJTE VYTAŽENÍM SÍŤOVÉ VIDLICE ZE SÍTĚ.** | **BEFORE OPENING THE MACHINE, CUT OFF ITS ELECTRICAL POWER BY REMOVING THE PLUG FROM THE MAINS SUPPLY SOCKET.** |
| **Každé 4 měsíce otevřete stroj a jemně ho vyfoukejte stlačeným suchým vzduchem POZOR, NEPOUŽÍVEJTE STLAČENÝ VZDUCH O PŘÍLIŠ VYSOKÉM TLAKU, ABY NEDOŠLO K MECHANICKÉMU POŠKOZENÍ ELEKTROSOUČÁSTEK.** | **Every six months, open the machine and clean it inside, using compressed dehumidified air.<br>CAUTION. DO NOT USE COMPRESSED AIR AT TOO HIGH A PRESSURE. YOU COULD DAMAGE THE ELECTRONIC COMPONENTS.** |
| **Každé 4 měsíce zkontrolujte řádný stav svařovacích kabelů a síťových kabelů.** | **With the same frequency, check the welding cables and the supply cables.** |
| **Není povolena žádná modifikace svařovacího stroje.** | **No modification, of any type, may be made to the welding machine.** |
| **Pro Vaši bezpečnost je nutné posečkat se sundáním krytu ze stroje po odpojení ze sítě po dobu minimálně 5 minut, kdy klesne napětí na kondenzátorech na hodnotu pod** | **For safety while maintaining the machine, please shut off the supply power and wait for 5 minutes, until** |

| | |
|---|---|
| **36 V.** | **capacity voltage already drops to safe voltage 36V.** |
| **2. BLOKOVÉ SCHÉMA** | **ELECTRICAL PRINCIPLE DRAWING** |

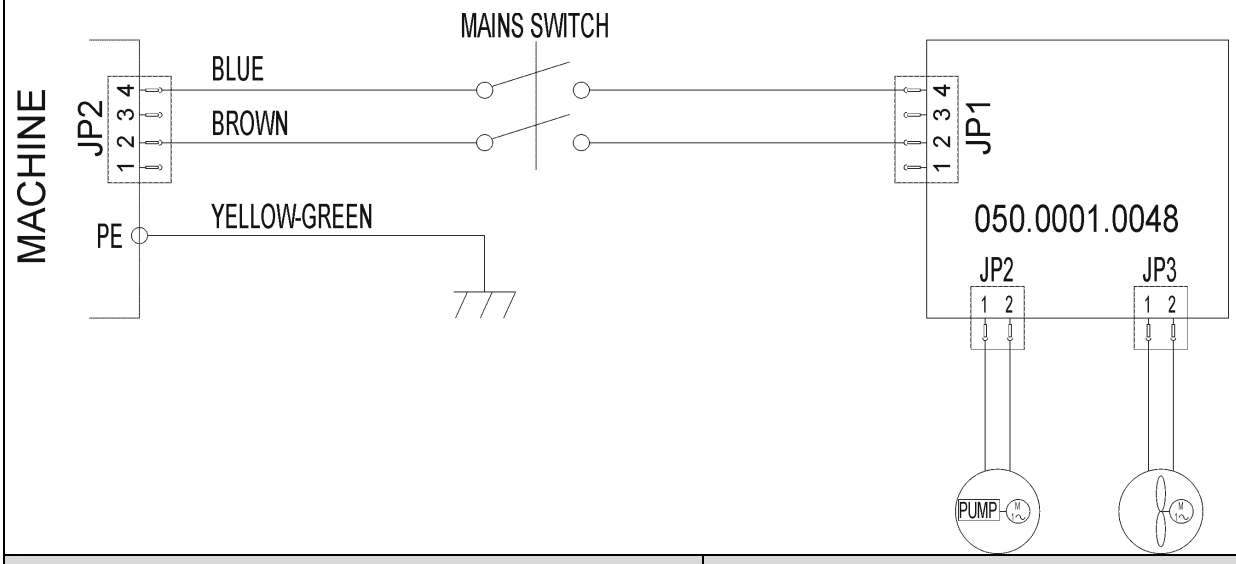


| Schéma zapojení DOV ALFIN 200 AC/DC | ELECTRICAL PRINCIPLE DOV ALFIN 200 AC/DC |
|---|---|

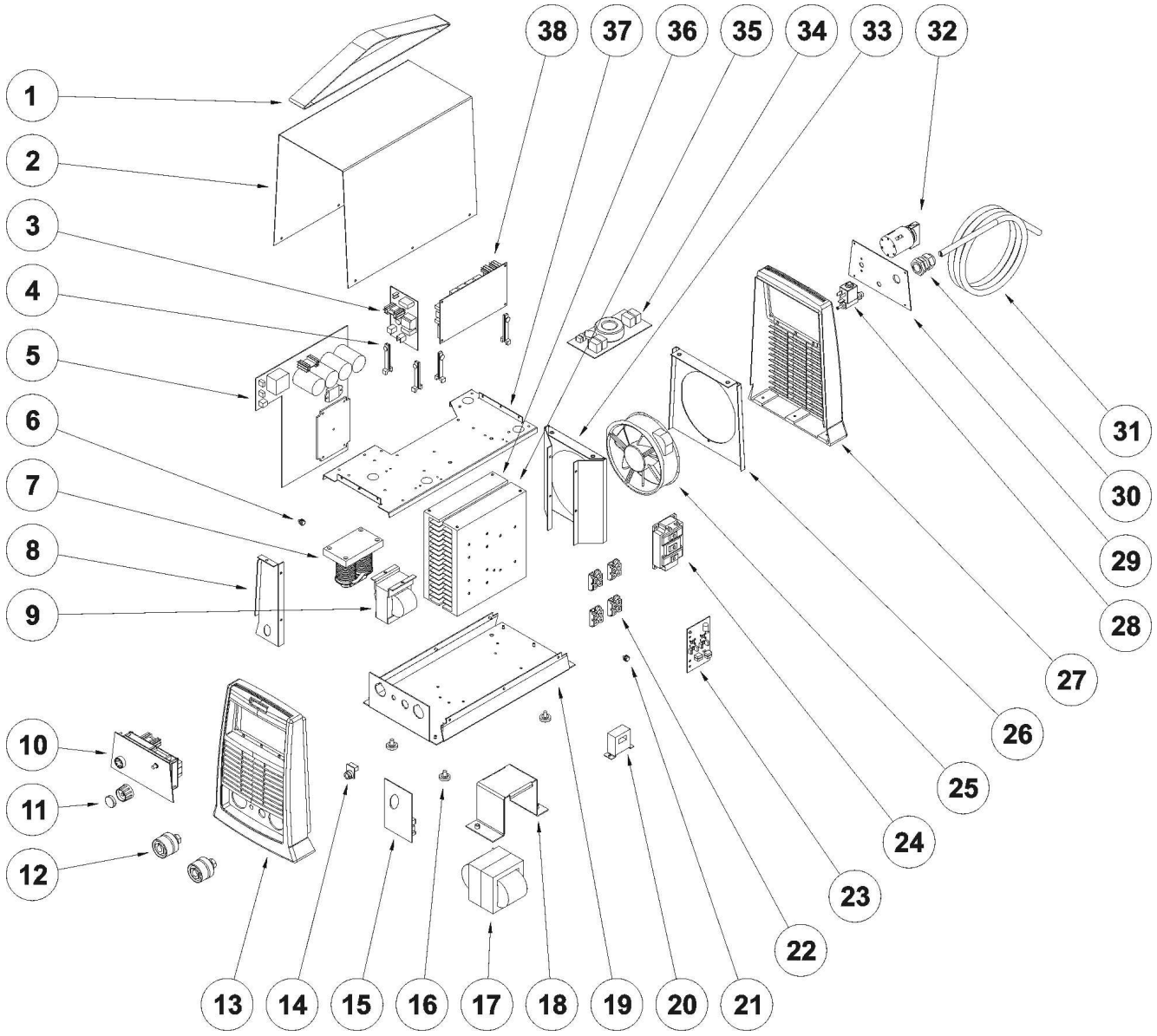


## CS CU-01B

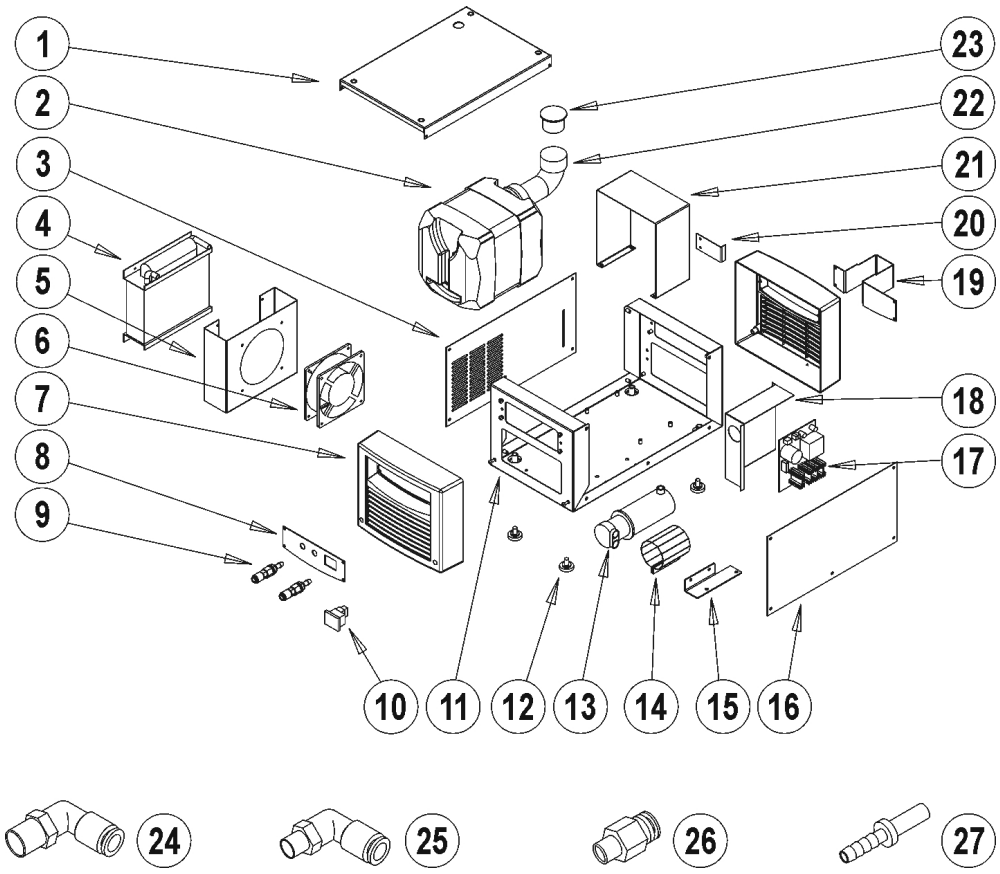



| | |
|---|---|
| **3. NÁHRADNÍ DÍLY** | **SPARE PARTS** |




| Poz. | Název | DESCRIPTION | CODE | Ks |
|---|---|---|---|---|
| 1 | Popruh | BELT | 005.0001.0008 | 1 |
| 2 | Kryt | CASE | 011.0001.0151 | 1 |
| 3 | PCB HF | HF BOARD | 050.0001.0027 | 1 |
| 4 | Držák PCB | VERTICAL MOUNT BOARD GUIDE | 016.0010.0001 | 1 |
| 5 | PCB silová | POWER BOARD | 050.0001.0025 | 1 |
| 6 | Termostat | THERMAL CUT-OUT | 040.0003.1270 | 1 |
| 7 | HF trafo | HF TRANSFORMER | 010.0002.0004 | 1 |
| 8 | Krytka vnitřní | LATERAL SUPPORT | 011.0008.0030 | 1 |
| 9 | Tlumivka | INDUCTOR | 044.0004.0004 | 1 |
| 10 | PCB ovládací | FRONT PANEL | 050.0154.0000 | 1 |
| 11 | Knoflík | COVER & HANDLE WITHOUT POINTER | 014.0002.0002 | 1 |
| 12 | Rychlospojka silová | FIXED SOCKET 400A | 021.0001.0259 | 2 |

| | | | | |
|---|---|---|---|---|
| 13 | Panel přední | FRONT | 012.0004.0010 | 1 |
| 14 | Konektor ovládací | AMPHENOL CONN. BOARD | 050.0001.0042 | 1 |
| 15 | PCB filtr výstupní | OUTPUT FILTER BOARD | 050.0001.0031 | 1 |
| 16 | Nožky | ADJUSTABLE FOOT | 016.0009.0001 | 4 |
| 17 | Trafo | TRANSFORMER | 042.0003.0029 | 1 |
| 18 | Držák trafa | TRANSFORMER SUPPORT | 011.0002.0012 | 1 |
| 19 | Dno | BASE | 011.0008.0001 | 1 |
| 20 | Hallova sonda | HALL SENSOR | 041.0004.0300 | 1 |
| 21 | Termostat | THERMAL CUT-OUT | 040.0003.1170 | 1 |
| 22 | Usměrňovač izotop | ISOTOP DIODE | 032.0002.2006 | 4 |
| 23 | PCB tlumící člen | SNUBBER BOARD | 050.0001.0065 | 1 |
| 24 | PCB inverzní člen | INVERSION MODULE | 050.0001.0047 | 1 |
| 25 | Ventilátor | FAN | 003.0002.0004 | 1 |
| 26 | Kryt ventilátoru | EXTERNAL FAN SUPPORT | 011.0008.0010 | 1 |
| 27 | Panel zadní | BACK | 012.0004.0100 | 1 |
| 28 | Ventil | SOLENOID VALVE | 017.0001.5541 | 1 |
| 29 | Panel zadní | REAR PANEL | 013.0012.0000 | 1 |
| 30 | Kabelová průchodka | CABLE GRIP | 045.0000.0007 | 1 |
| 31 | Síťový kabel | NEOPRENE CABLE | 045.0002.0004 | 1 |
| 32 | Hlavní vypínač | TWO-POLE SWITCH | 040.0001.0010 | 1 |
| 33 | Kryt ventilátoru | INTERNAL FAN SUPPORT | 011.0008.0011 | 1 |
| 34 | PCB filtr síťový | LINE FILTER BOARD | 050.0001.0030 | 1 |
| 35 | Chladič sekundár | DISSIPATER S | 015.0001.0008 | 1 |
| 36 | Chladič primár | DISSIPATER P | 015.0001.0007 | 1 |
| 37 | Kryt vnitřní | INTERNAL SUPPORT | 011.0008.0020 | 1 |
| 38 | PCB inverzní člen | INVERSION BOARD | 050.0001.0071 | 1 |
| - | Sada pro připojení TIG hořáku | KIT FOR TIG TORCH | 021.0000.0001 | 1 |




| Poz. | Název | DESCRIPTION | CODE | Ks |
|---|---|---|---|---|
| 1 | Kryt | CASE | 011.0012.0002 | 1 |
| 2 | Nádržka | TANK | 010.0004.0110 | 1 |
| 3 | Levý kryt | LEFT SIDE | 011.0000.0381 | 1 |
| 4 | Chladič | RADIATOR | 010.0004.0100 | 1 |
| 5 | Držák ventilátoru | FAN SUPPORT | 011.0012.0003 | 1 |
| 6 | Ventilátor | FAN | 003.0002.0008 | 1 |
| 7 | Čelo | FRONT-REAR | 012.0006.0000 | 1 |
| 8 | Přední panel | FRONT PANEL | 011.0012.0005 | 1 |
| 9 | Rychlospojky | QUICK CLUTCH | 018.0002.0004 | 2 |
| 10 | Vypínač | SWITCH | 040.0001.0001 | 1 |
| 11 | Dno | BASE | 011.0012.0001 | 1 |
| 12 | Nožky | RUBBER FOOT | 016.0009.0001 | 4 |
| 13 | Čerpadlo | PUMP | 003.0004.0002 | 1 |
| 14 | Držák čerpadla | PUMP CARTER | 011.0012.0009 | 1 |
| 15 | Držák čerpadla | PUMP SUPPORT | 011.0012.0011 | 1 |
| 16 | Pravý kryt | RIGHT SIDE | 011.0000.0351 | 1 |

| | | | | |
|---|---|---|---|---|
| 17 | PCB napájecí | POWER SUPPLY BOARD | 050.0001.0058 | 1 |
| 18 | Kryt PCB napájecí | BOARD CARTER | 011.0012.0010 | 1 |
| 19 | Zadní panel | REAR PANEL | 011.0012.0006 | 1 |
| 20 | Kryt nádobky | TANK SUPPORT | 011.0012.0008 | 1 |
| 21 | Držák nádobky | TANK CARTER | 011.0012.0007 | 1 |
| 22 | Nalévací hrdlo | TANK FILLING COMPLETE PIPE UNION | 010.0004.0120 | 1 |
| 23 | Zátka | PLUG | 017.0003.1005 | 1 |
| 24 | Úhlové šroubení 1/4 GAS | MALE ELBOW 1/4 GAS | 017.0003.0009 | 2 |
| 25 | Úhlové šroubení 1/8 GAS | MALE ELBOW 1/8 GAS | 017.0003.0002 | 2 |
| 26 | Přípojka 1/8 GAS | MALE CONNECTOR 1/8 GAS | 017.0003.0007 | 2 |
| 27 | Redukce | TUBE TO HOSE STEM | 017.5001.3010 | 2 |

## 4. ZÁVADY - ŘEŠENÍ

| Poř. | Závada | Příčina | Řešení |
|---|---|---|---|
| 1 | Stroj je zapnutý, ventilátor funguje, LED zapnutí nesvítí | LED nebo její připojení je vadné. | Opravte připojení nebo vyměňte LED poř.10 |
| | | Silová PCB je vadná. | Opravte nebo vyměňte PCB poř.č5 |
| 2 | Stroj je zapnutý, LED zapnutí svítí, ventilátor neběží. | Překážka rotace ventilátor. | Odstraňte |
| | | Motor ventilátor poškozen. | Vyměňte ventilátor |
| 3 | Stroj je zapnutý, LED zapnutí nesvítí, ventilátor neběží. | Není napětí v síti | Zkontrolujte, jestli je v síti napětí. |
| | | Přepětí nebo podpětí v síti. | Zkontrolujte síťové napětí. |
| 4 | Žádné napětí na prázdno | Závada generátor. | Zkontrolujte hlavní vypínač |
| 5 | Žádný svařovací proud na svorkách | Svařovací kabely nejsou připojeny do konektorů. | Připojte svařovací kabely do rychlospojek na stroji. |

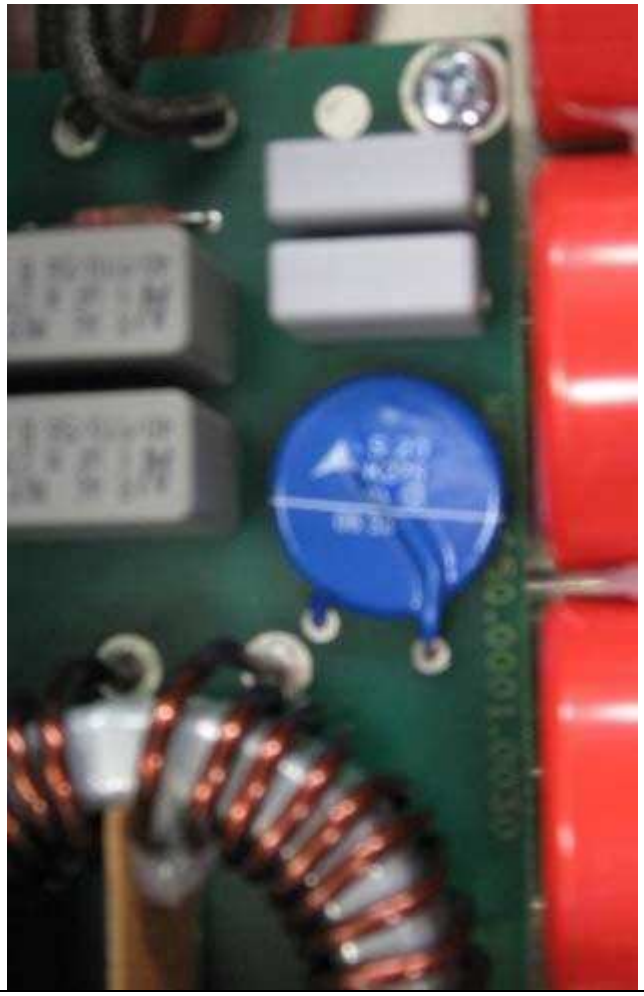
| | | | | |
|---|---|---|---|---|
| | | Poškozený svařovací kabel. | | Vyměňte nebo opravte svařovací kabel. |
| | | Zemnící kabel není připojen nebo je špatně připojen. | | Zkontrolujte zemnící kabel |
| 6 | Obtížně se zapaluje oblouk nebo dochází k lepení elektrody. | Špatně utažené svařovací kabely. | | Zkontrolujte utažení svařovacích kabelů. |
| | | Svařenec je znečištěn olejem nebo prachem. | | Očistěte svařenec. |
| | | MMA/TIG výběr je špatný. | | Vyberte MMA svařování. |
| 7 | Nestabilní svařovací oblouk. | ARC FORCE nastaveno příliš nízké. | | Zvyšte ARC FORCE. |
| 8 | Svařovací proud nelze nastavit. | Poškozený potenciometr předního panelu. | | Opravte nebo vyměňte potenciometr. |
| 9 | Penetrace tavné lázně nedostačující. | Svařovací proud je nastaven příliš nízko. | | Zvyšte svařovací proud |
| | | ARC FORCE nastaveno příliš nízké. | | Zvyšte ARC FORCE. |
| 10 | Nestabilní oblouk | Nepříznivý vliv průvanu | | Použijte zástěnu. |
| | | Excentrická elektroda | | Změňte úhle uchycení elektroda |
| | | | | Vyměňte elektrodu |
| | | Vliv magnetismu | | Nahněte elektrodu proti směru magnetického vlivu. |
| | | | | Změňte pozici zemnícího kabelu nebo přidejte zemnící kabel na opačnou stranu svařence. |
| 11 | LED ALARM svítí | Přehřátí | Stroj příliš zatížen | Počkejte, až se stroj vychladí |
| | | Ochrana přepětí | Nestandardní proud na hlavním obvodu. | Otestujte a opravte hlavní obvod PCB poř.č5 |

## TROUBLESHOOTING

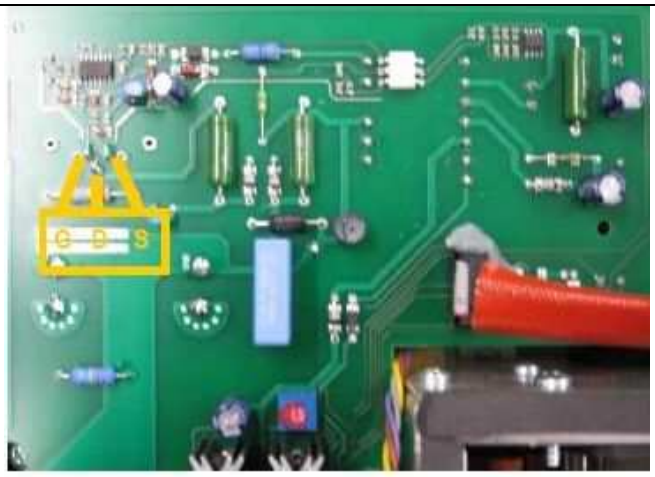
| S/N | Troubles | Reasons | Solutions |
|---|---|---|---|
| 1 | Turn on the power source, and fan works, but the power light is not on. | The power light damaged or connection is not good | Test and repair the inside circuit of power light s/n 10 |
| | | Power PCB failures | Repair or change power PCB s/n 5 |
| 2 | Turn on the power source, and the power light is on, but fan doesn't work | There is something in the fan | Clear out |
| | | The fan motor damaged | Change fan motor |
| 3 | Turn on the power source, and the power light is not on, and fan doesn't work | No input voltage | Check whether there is input voltage |
| | | Overvoltage (Input voltage is too much or not) | Check input voltage |
| 4 | No no-load voltage output | There is trouble inside the | Check the power switch |

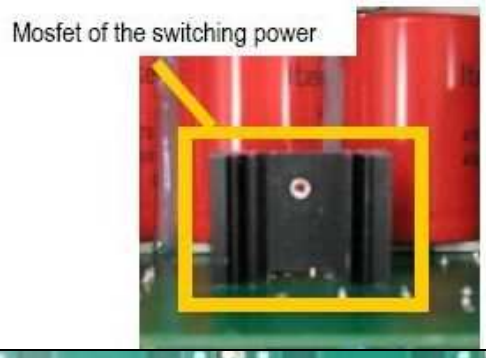
| | | | | |
|---|---|---|---|---|
| | | machine | | |
| 5 | No current output in the welding | Welding cable is not connected with the two output of the welder. | | Connect the welding cable to the welder's output |
| | | Welding cable is broken | | Wrap, repair or change the welding cable |
| | | Earth cable is not connected or loosen | | Check the earth clamp |
| 6 | Not easy to start arc in the welding, or easy to cause sticking | The plug loosen or connect not well | | Check and tighten the plug |
| | | Oil or dust covered the workpiece | | Check and clear out |
| | | MMA/TIG welding selection is wrong | | Selecting the MMA welding |
| 7 | The arc is not stable in the welding process | The arc force is too small | | Increase the arc force |
| 8 | The welding current can not be adjusted | The welding current potentiometer in the front panel connection not so good or damaged | | Repair or change the potentiometer |
| 9 | The penetration of molten pool is not enough(MMA) | The welding current adjusted too low | | Increase the welding current |
| | | The arc force adjusted too small | | Increase the arc force |
| 10 | Arc blow | Airflow disturbance | | Use the shelter from airflow |
| | | The electrode eccentricity | | Adjust the electrode angle |
| | | | | Change the electrode |
| | | Magnetic effect | | Incline the electrode to the opposite way of the magnetic blow |
| | | | | Change the position of earth clamp or add earth cable in the two side of workpiece |
| | | | | Use the short arc operation |
| 11 | The alarm light is on | Over heat protection | Over welding current | Induce the welding current output |
| | | | Working time too long | Induce the duty cycle (interval work) |
| | | Over current protection | Unusual current in the main circuit | Test and repair the main circuit and drive PCB s/n 5 |

## 5. KONTROLA SILOVÉ PCB — CHECKING THE POWER PCB

| | | |
|---|---|---|
| **Obrázek 1** |  | Varistor je blízko vstupu napájecího napětí na PCB vstupní filtr. Toto zařízení slouží k ochraně PCB před vstupním přepětím. Při přepětí "exploduje" a zkratuje vstup. Je-li rozsah zkratu velmi vysoký, obvod se přeruší |

**Obrázek 2**



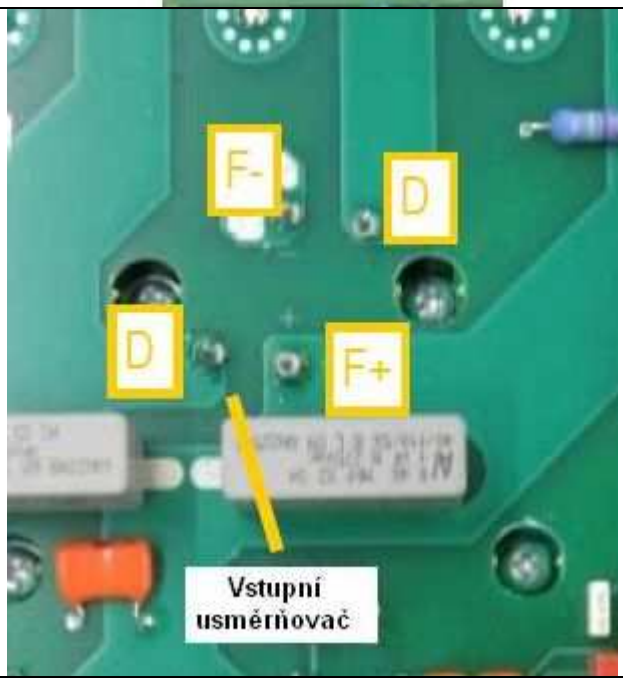




Pro kontrolu tranzistor změřte podle následující tabulky testerem diod

| červený | černý | hodnota |
|---|---|---|
| D | S | OL |
| S | D | OL |
| G | S | OL |
| S | G | OL |
| G | D | 0.5 |
| D | G | OL |

Hodnoty jsou orientační. Naměříte-li zkrat, nebo rozpojený obvod (OL), je nutné PCB vyměnit

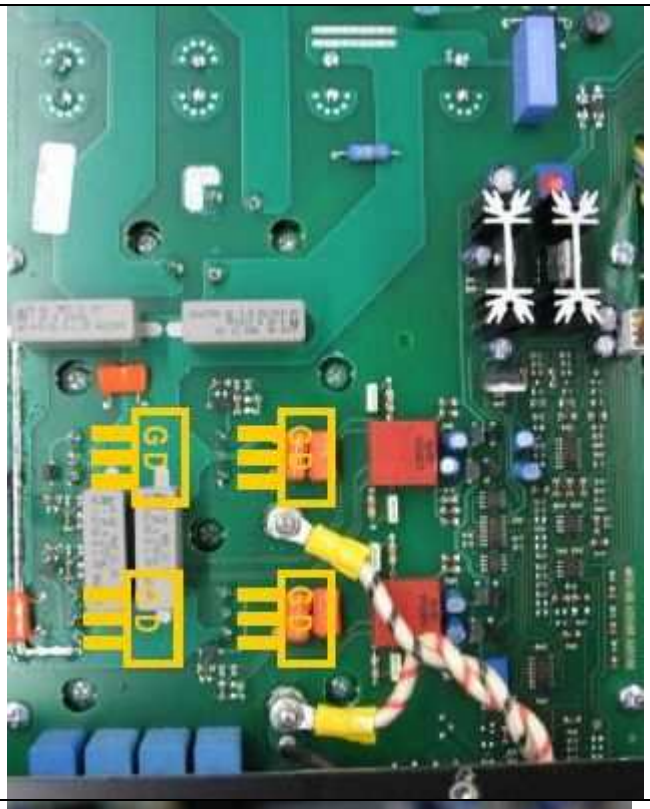
**Obrázek 3**




Vstupní usměrňovač na silové desce
Pro kontrolu můstku změřte tento podle následující tabulky testerem diod

| Červený vodič | Černý vodič | Naměřená hodnota |
|---|---|---|
| F+ | D | OL |
| D | F+ | 0.5 |
| D | F- | OL |
| F- | D | 0.5 |

**Obrázek 4**

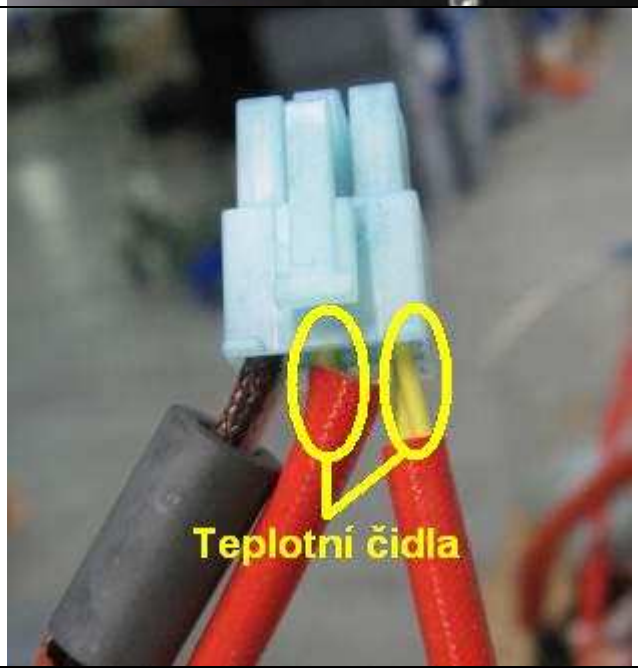



Pro kontrolu tranzistorů změřte tyto podle následující tabulky testerem diod

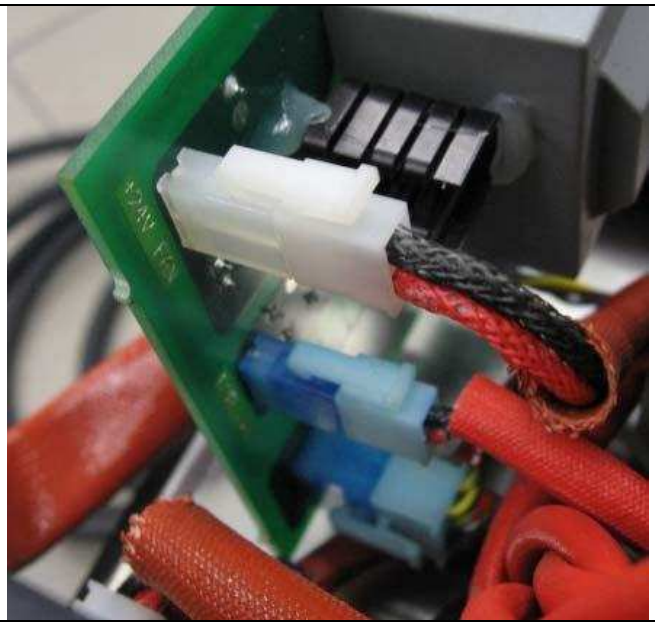
| červený | černý | hodnota |
|---|---|---|
| S | G | 0,6 |
| G | S | 0.5 |

Hodnoty jsou orientační. Naměříte-li zkrat, nebo rozpojený obvod (OL), je nutné PCB vyměnit

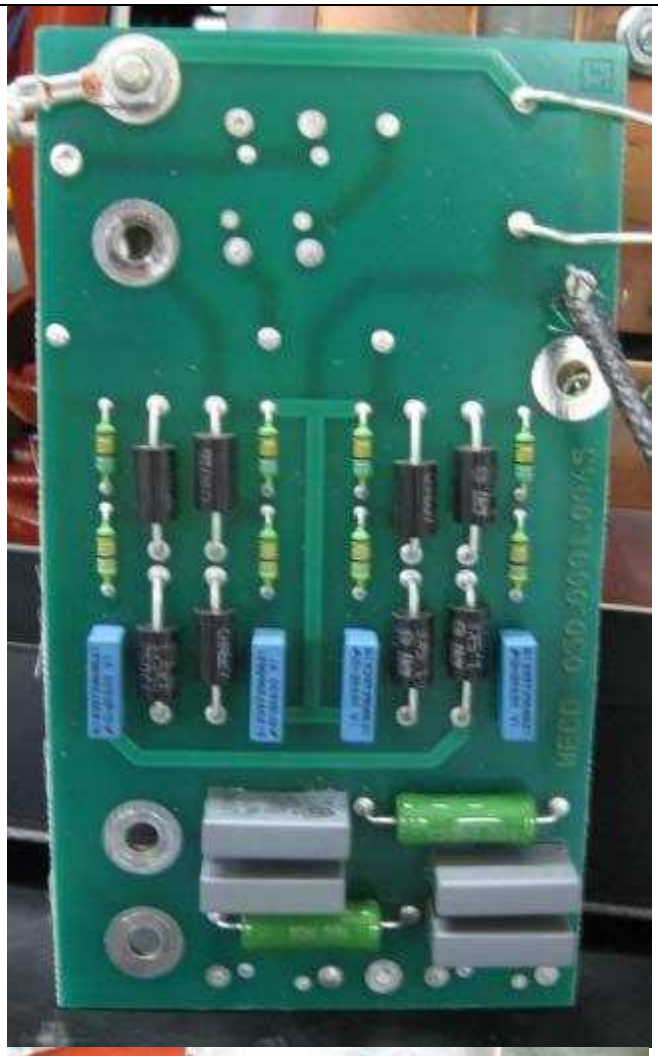
**Obrázek 5**

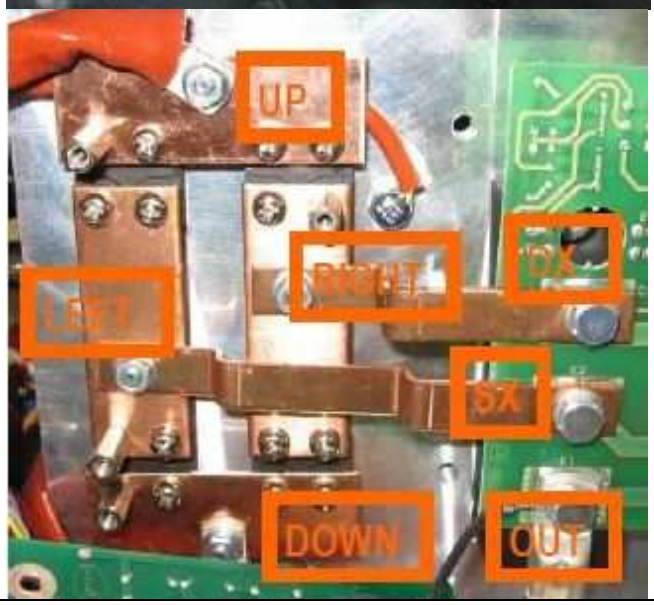



Zkontrolujte obvod dvou teplotních čidel na 6-pinovém konektoru na silové desce

| | | |
|---|---|---|
| **Obrázek 6** |  | Netočí-li se ventilátor, zkontrolujte napájení 24V ze silové desky a vedení k ventilátorům |

**Obrázek 7**





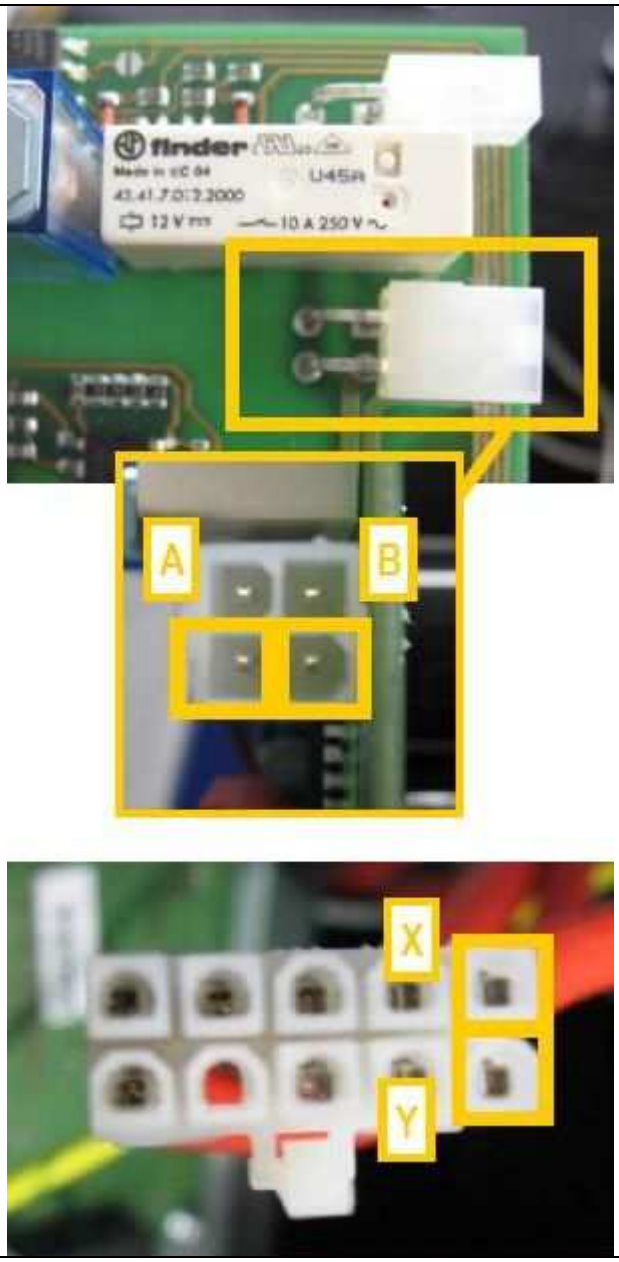

Pro kontrolu výstupních usměrňovačů odmontujte PCB RC-filtr a podle následující tabulky změřte testerem diod

| červený | černý | hodnota |
|---|---|---|
| LEFT | UP/DOWN | 0,3 |
| UP/DOWN | LEFT | OL |
| RIGHT | UP/DOWN | OL |
| UP/DOWN | RIGHT | 0,3 |

Pro kontrolu střídače podle následující tabulky

| červený | černý | hodnota |
|---|---|---|
| SX | OUT | 0,3 |
| OUT | SX | OL |
| DX | OUT | OL |
| OUT | DX | 0,3 |

Nakonec zkontrolujeme osm transilů na PCB RC filtr. V obou směrech musí vykázat přerušený obvod

| | | |
|---|---|---|
| **Obrázek 8** |  | Zkontrolujte testerem diod průchodnost mezi body A/B na silové PCB a pinů X/Y na propojce k PCB řídící. |

## CAUTION!

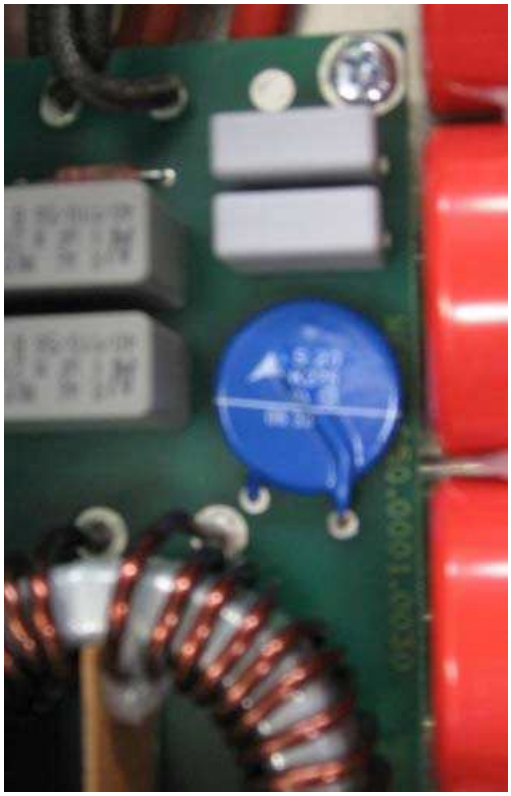
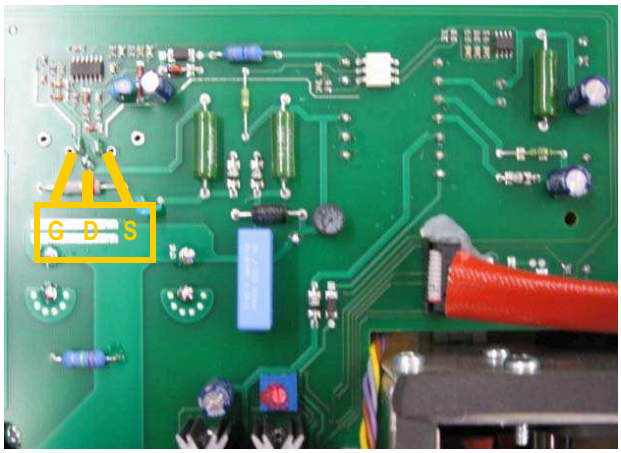
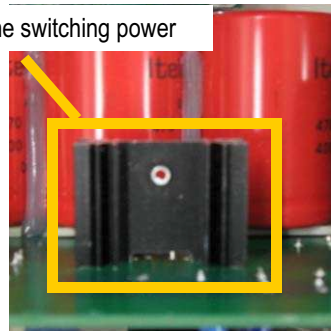
**Before carrying out any work on the machine make sure it is off and the plug has been disconnected.**

| PROBLEM | CASE | SOLUTION |
|---|---|---|
| The machine does not switch on. | – Electrical power does not reach the machine.<br>– Voltage reaches the machine switch but there is no voltage after the contacts.<br>– There is voltage after the disconnecting switch but the machine does not go on. | • Make sure the line switch is closed, the protection devices (fuses) have not been enabled and that the power supply cable is intact.<br>• Switch the machine off and disconnect the plug. Make sure that when the switch is closed, there is continuity between the contact input and output and the varistor is not broken. (picture 1).<br>• Switch the machine off and disconnect the plug. Check the mosfet of the switching power supply unit on the power board (picture 2). |
| The protection devices of the line set off when the switch is activated and the machine does not go on. | – Damaged power supply cable with short-circuited wires.<br>– Inverter is damaged. | • Switch off the machine and disconnect the plug. Make sure that there are no short circuits between the poles of the plug caused by a damaged power supply cable.<br>• Switch off the machine, disconnect the plug and check:<br>- varistor (picture 1);<br>- inverter (picture 4);<br>– Input bridge rectifier (picture 3);<br>– switching power supply unit (picture 2). |
| The front panel does not switch on. | – The fan works but the front panel does not go on.<br>– Both the fan and the front panel do not work. | • Switch off the machine and disconnect the plug. Make sure the flat cable that connects the front panel to the power board is inserted correctly. If correctly inserted, replace the front panel. If the front panel does not go on, one of the switching power supply unit outputs is broken. Therefore the power board must be replaced.<br>• Switch off the machine, disconnect the plug and check the mosfet of the switching power supply unit (picture 2). |

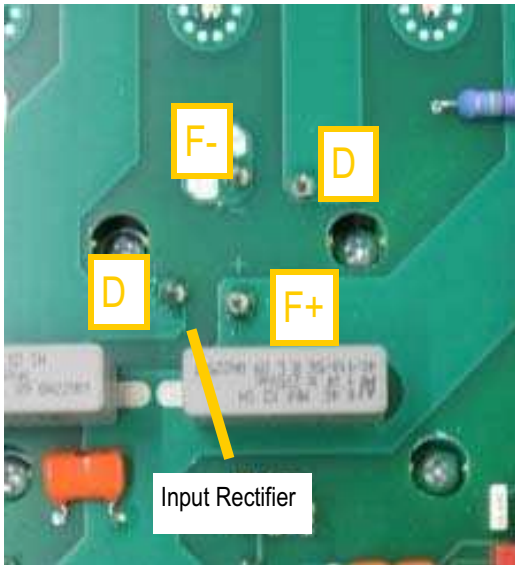
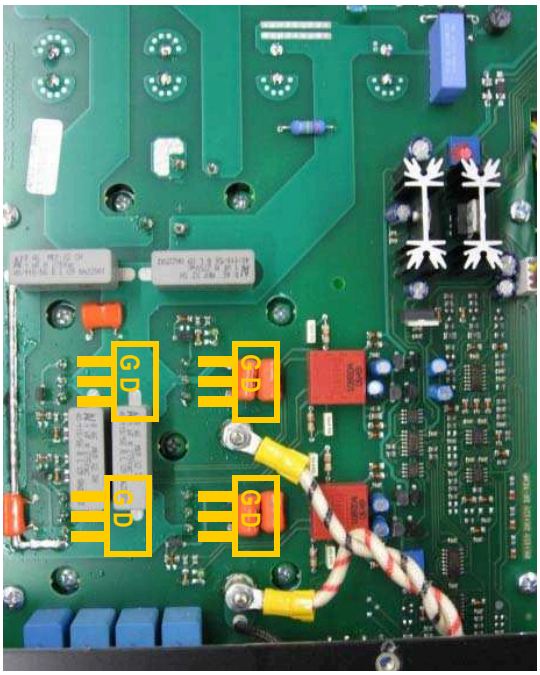
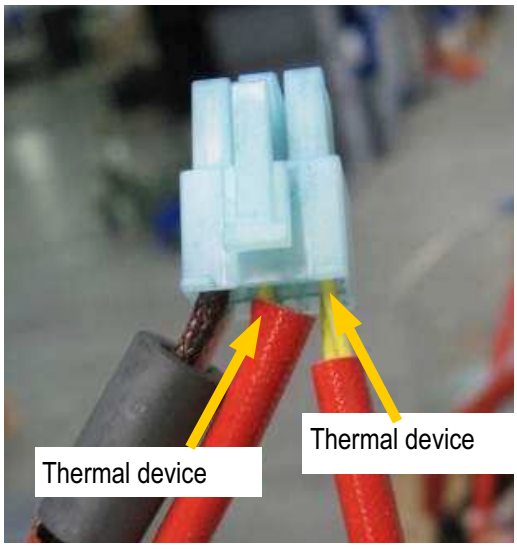
| PROBLEM | CASE | SOLUTION |
|---|---|---|
| The Machine works and weld but the fan doesn't work (too short thermal cycle). | – The cable that connects the Power Board to the Fan is not correctly inserted.<br>– The fan is damaged. | • Connect the cable or eventually replace it (figura 6).<br>• The fan must be replaced. |
| The output voltage in MMA/TIG is about 11V and the Machine doesn't weld. | – The wires that connect the output filter board 0031 to the front panel (0026) are not correctly connected or damaged.<br>– The cable that connects the inversion board 0071 to the module board 0017 is not correctly connected or is damaged.<br>– The cable that connects the front panel to the inversion board is not correctly inserted or is damaged.<br>– The front panel is damaged.<br>– The power board and/or the inversion board are damaged. | • Switch off the machine and disconnect the plug:<br>– Connect the cables or if they are damaged replace them (picture 7).<br>– Connect the inversion board cable to the module board and whether it's damaged, replace it.<br>– Connect the cable to the inversion board and whether it's damaged, replace it.<br>– Replace the damaged boards. |
| The output voltage in each procedure is about 11V and enabling of the thermal protection device. | Wait a few minutes keeping the machine on to favour cooling of the inverter. If the machine continues running with the protection devices on, switch the machine off and disconnect the plug. Remove the hood and make sure:<br>– the temperature of the heat sink tool is less than 40°C;<br>– If it is less than 40°C, check whether the thermal protective device contacts are normally closed. | - If the protection devices is always opened it is defective, it must be accordingly replaced.<br>- If it is closed, make sure the two terminals are well inserted in the connector(picture 5).<br>- Power board feed problems, it must be accordingly replaced. |
| The output voltage in MMA/TIG is zero and the welding procedure is blocked in MMA. | – ISOTOP diodes are in short circuit.<br>– The Inversion Module is damaged.<br>– Transils on the snubber board are damaged.<br>– The inductive value of the Power Trasformer is null. | Switch off the machine and disconnect the plug. Remove the snubber board 0065 ( above the ISOTOP diodes) (picture 8):<br>• check with a diode tester the diodes status. If damaged, they must be replaced;<br>• check with a diode tester the inversion module status. If it's damaged, it must be replaced (picture 8);<br>• check with a diode tester the status of the transils on the snubber board.<br>• sostituire il TF POT nel caso sia danneggiato. |
| The welding is non optimal. | – Spattering occurs during MMA welding.<br>– The arc goes out during the AC welding. | • Make sure welding polarity is correct, the earth clamp is fixed correctly and check the hot-start and arc-force values that have to be decreased if they are too high.<br>• The inversion board 0071 or the front panel must be replaced. |

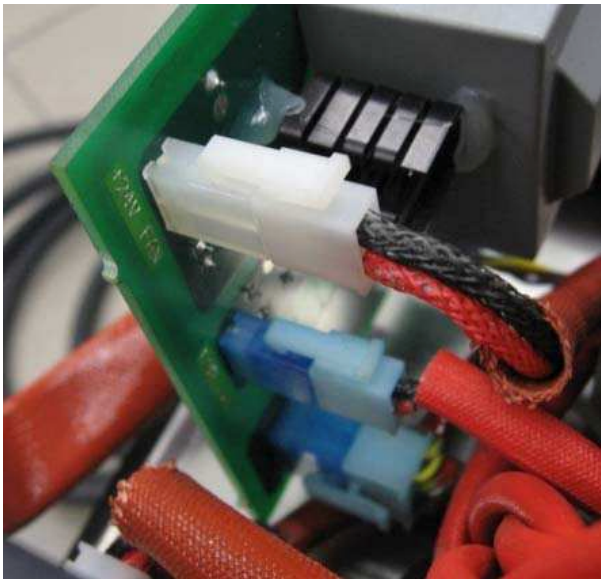
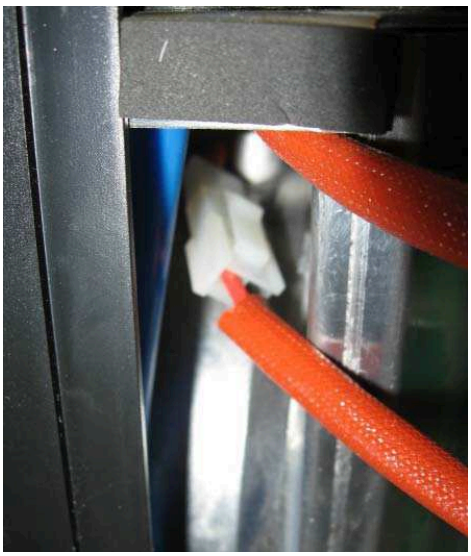
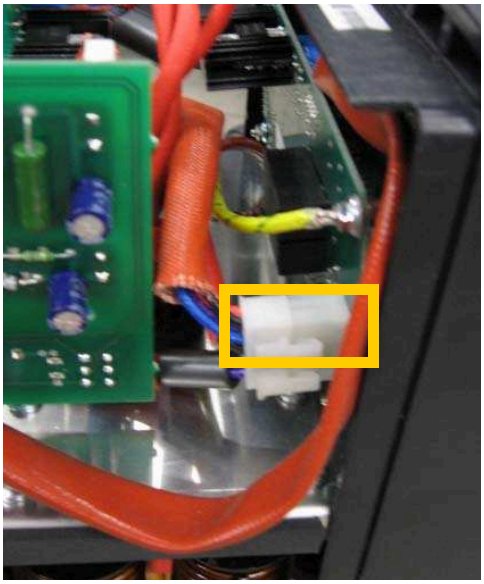
| PROBLEM | CASE | SOLUTION |
|---|---|---|
| When welding the protection devices of the line set off. | Make sure the welding current does not require greater power than the one supplied by the line. | Decrease the welding current. |
| The remote control is damaged. | • Check that the 2-pin blue connector is correctly inserted on the power board.<br>• The Front Panel could be damaged. | Insert the wires into the connectors correctly and insert the connectors into their housings. Should this not be sufficient, replace the front panel board |
| The machine does not strike in HF mode. | – The front panel could be damaged.<br>– The HF board 0027 could be damaged.<br>– HF board cable could be damaged or disconnected.<br>– The HF transformer is damaged or not connected to the front panel.. | • The front panel must be replaced<br>• The HF board must be replaced.<br>• Connect the cables or, if damaged, replace them.<br>• Connect the HF transformer or replace it. |
| Gas does not come out from solenoid valve. | – Excessive gas pressure.<br>– Damage solenoid valve wiring.<br>– The solenoid valve control relay on the front panel is damaged.<br>– No 24 V.<br>– Solenoid valve is damaged. | • Remove the gas connection. Carry out a gas test on the front panel in the TIG procedure and check opening of the solenoid valve. Reduce gas pressure. Restore connections and carry out a gas test.<br>• Switch off the machine and disconnect the plug:<br>– Should there be no continuity, single out the disconnection and repair it;<br>– Make sure that the wiring contacts are correctly inserted in the connectors.<br>• The Front Panel must be replaced.<br>• Check continuity between points A/B of the power board and x/y poles of the connector that goes to the front panel (picture 10). After that the solenoid valve or the front panel must be replaced.<br>• Should the operations carried out not have a positive outcome, replace the solenoid valve. |
| The torch button doesn't work. | – Non c'è continuità nel cablaggio della scheda amphenol 0042.<br>– Cablaggio pulsante torcia che va da scheda 0042 a scheda 0031 rotto o non collegato.<br>– Cablaggio che va da scheda 0031 a scheda 0026 è rotto o non collegato.<br>– Il cablaggio 24 V (nominato + 24 V aux) che va da scheda potenza a scheda pannello frontale 0026 è danneggiato o sconnesso.<br>– La scheda del pannello frontale 0026 è danneggiata. | • Sostituire la scheda amphenol 0042.<br>• Collegare o sostituire il cablaggio che collega le due schede.<br>• Sostituire la schede che risultano danneggiate. |

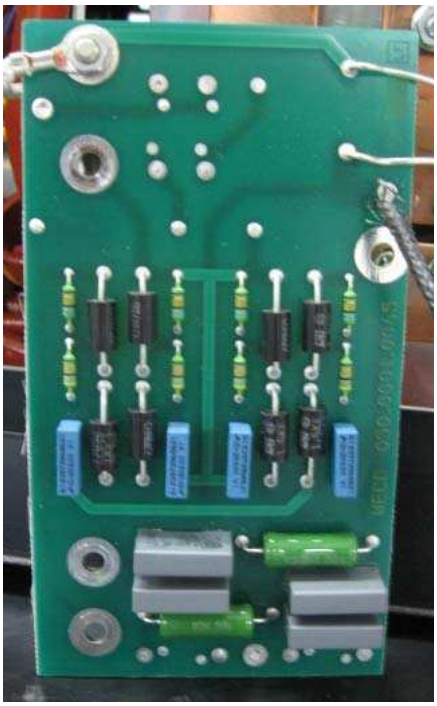
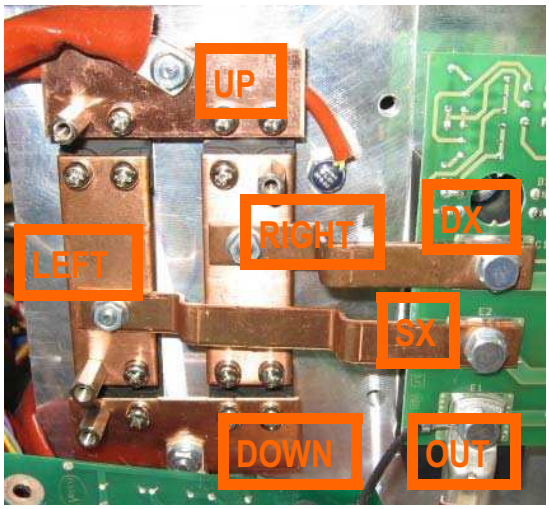
| PROBLEM | CASE | SOLUTION |
|---|---|---|
| The machine always welds at maximum current. | - The Front Panel 0026 is damaged.<br>- The Power Board 0025 is damaged.<br>- The Hall Effect is damaged or the cable is disconnected. | Switch off the machine and disconnect the plug:<br>• The Front Panel must be replaced.<br>• The Power Board must be replaced.<br>• Connect the cable in the right way, or if damaged, the Hall Effect must be replaced. |
| Gas comes out but the machine doesn't weld. | Pre-gas settings are not correct. | Regulate pre-gas settings. |
| The machine can't stop welding or the welding current is not the one set. | The slope up and slope down are not correctly set. | • Regulate in the correct way the slopes.<br>• Otherwise, reset the parameters and reset the machine (picture 9). |

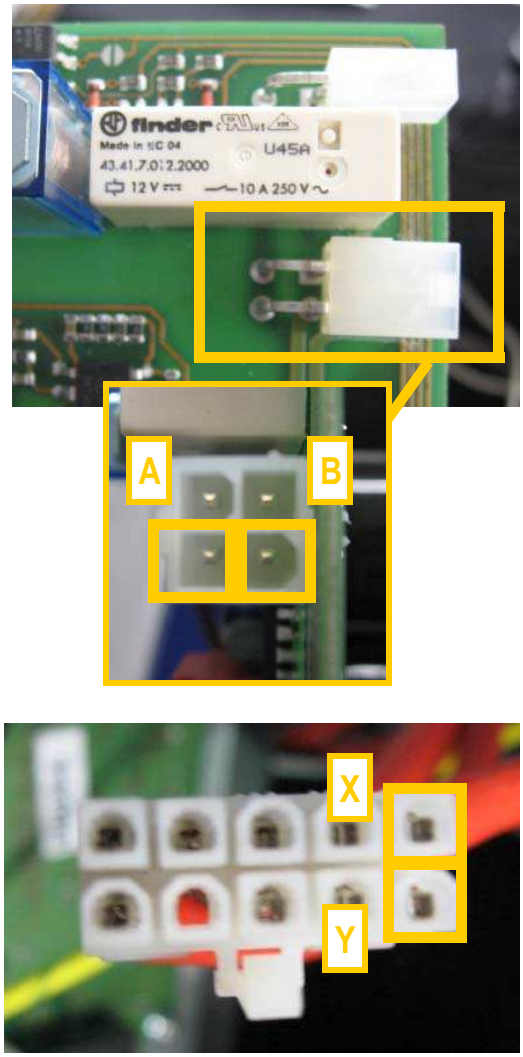
| | | EXPLANATION |
|---|---|---|
| PICTURE 1 |  | The varistor is a blue discs near the ground wire of the power board. This device is for protecting the board from input overvoltage. When there is overvoltage they "explode" causing a short circuit most of the times. If the extent of the short circuit is very high they become an open circuit. |
| PICTURE 2 |  <br>Mosfet of the switching power<br>  | To check the mosfet of the switching power supply unit, carry the following measurements with a diode tester:<br><br>Should there be a short-circuit on one of these measurements or an "OL" instead of a numeric value, the power board must be replaced. |

| Red Probe | Black Probe | Measure |
|---|---|---|
| D | S | "OL" |
| S | D | "OL" |
| G | S | "OL" |
| S | G | "OL" |
| G | D | 0.5 |
| D | G | "OL" |

| | | EXPLANATION |
|---|---|---|
| PICTURE 3 |  | Input bridge rectifier .<br><br>To check the Input bridge rectifier , carry out the following measurements with a diode tester:<br><br>**Rheofore / Probe / Rheofore / Probe / Measure**<br>F+ / Red / D / Black / "OL"<br>F− / Red / D / Black / 0.5<br>F+ / Black / D / Red / 0.5<br>F− / Bleck / D / Red / "OL"<br><br>Should there be a short circuit on one of these measurements, the input bridge rectifier must be replaced. |
| PICTURE 4 |  | To check the inverter, carry out the following measurements with a diode tester:<br><br>**Red Probe / Black Probe / Measure**<br>S / G / 0.6<br>G / S / 0.5<br><br>Should there be a short-circuit on one of these measurements or an "OL" instead of a numeric value, the power board must be replaced. |
| PICTURE 5 |  | Make sure the two terminals of the thermal devices are well inserted in the 6-pin blue connector on the power board. |

| | | EXPLANATION |
|---|---|---|
| PICTURE 6 |   | Make sure that the fan cables +24 V are correctly inserted:<br>– 2-pin connector on the power board;<br>– 2-pin connector on the fan. |
| PICTURE 7 |  | Make sure that the output filter board 0031 cables are correctly inserted in the front panel connectors. |

| | | EXPLANATION |
|---|---|---|
| PICTURE 8 |    | To check diodes remove the snubber board and carry out the following measures with a diode tester:<br><br>**Copper bar / Probe / Copper bar / Probe / Measure**<br>LEFT – red – UP/DOWN – black – 0.3<br>LEFT – black – UP/DOWN – red – "OL"<br>RIGHT – red – UP/DOWN – black – "OL"<br>RIGHT – black – UP/DOWN – red – 0.3<br><br>At the ends of the two transils (see below) positioned on the snubber board, "OL" must always be measured.<br><br>  <br><br>**Copper bar / Probe / Copper bar / Probe / Measure**<br>LEFT – red – OUT – black – 0.3<br>LEFT – black – OUT – red – "OL"<br>RIGHT – red – OUT – black – "OL"<br>RIGHT – black – OUT – red – 0.3 |
| PICTURE 9 |   | In order to reset the parameters, switch the machine on while the S2 and S4 buttons are being pressed. |

| | | EXPLANATION |
|---|---|---|
| PICTURE 10 |  <br> | Check continuity, with a diode tester, between points A/B of the power board and x/y poles of the connector that goes to the front panel. |