



OM-251 958E

2015-07

Processes



MIG (GMAW) Welding

Flux Cored (FCAW) Welding

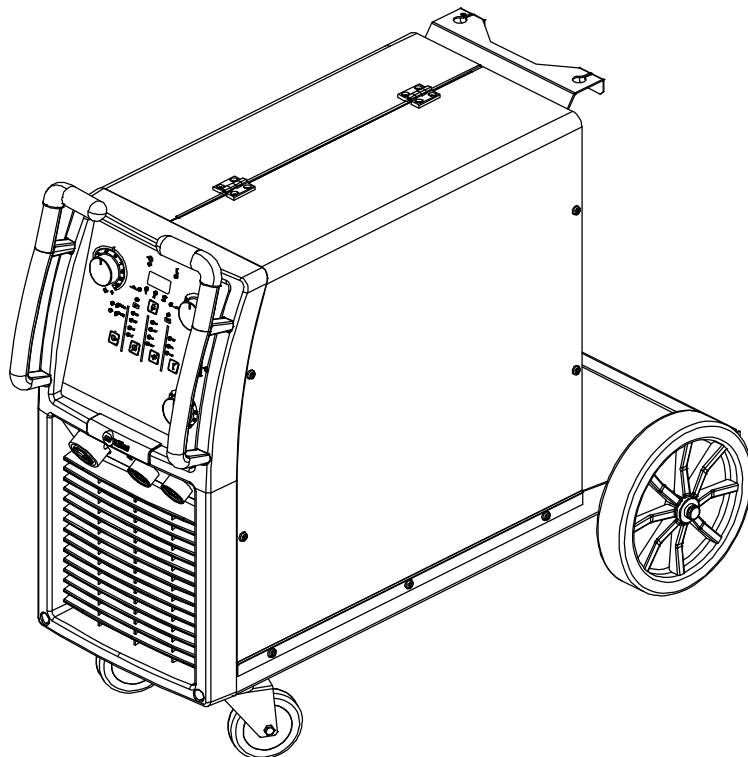
Description



Arc Welding Power Source

Wire Feeder

MigMatic[®] 300/380 And DX CE



Visit our website at
www.MillerWelds.com

OWNER'S MANUAL

File: MIG (GMAW)



From Miller to You

Thank you and congratulations on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

That's why when Niels Miller first started building arc welders in 1929, he made sure his products offered long-lasting value and superior quality. Like you, his customers couldn't afford anything less. Miller products had to be more than the best they could be. They had to be the best you could buy.

Today, the people that build and sell Miller products continue the tradition. They're just as committed to providing equipment and service that meets the high standards of quality and value established in 1929.

This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite. We've made installation and operation quick and easy. With Miller you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide which exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.



Miller Electric manufactures a full line of welders and welding related equipment. For information on other quality Miller products, contact your local Miller distributor to receive the latest full line catalog or individual catalog sheets.



Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.



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DECLARATION OF CONFORMITY

for European Community (CE marked) products.

ITW Welding Italy S.r.l Via Privata Iseo 6/E, 20098 San Giuliano M.se, (MI) Italy declares that the product(s) identified in this declaration conform to the essential requirements and provisions of the stated Council Directive(s) and Standard(s).

Product/Apparatus Identification:

| Product | Stock Number |
|-----------------------------|--------------|
| MIGMATIC 300, 400VAC | 029015540 |
| MIGMATIC 300 DX, 400VAC | 029015541 |
| MIGMATIC 300, 230/400VAC | 029015545 |
| MIGMATIC 300 DX, 230/400VAC | 029015546 |
| MIGMATIC 380, 400VAC | 029015542 |
| MIGMATIC 380 DX, 400VAC | 029015543 |
| MIGMATIC 380, 230/400VAC | 029015547 |
| MIGMATIC 380 DX, 230/400VAC | 029015548 |

Council Directives:

- 2006/95/EC Low Voltage
- 2004/108/EC Electromagnetic Compatibility
- 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment

Standards:

- IEC 60974-1:2012 Arc Welding Equipment – Part 1: Welding Power Sources
- IEC 60974-5:2007 Arc Welding Equipment – Part 5: Wire Feeders
- IEC 60974-10:2007 Arc Welding Equipment – Part 10: Electromagnetic Compatibility Requirements

EU Signatory:

July 1st, 2015

Massimiliano Lavarini

Date of Declaration

ITW WELDING ITALY PRODUCTION MANAGER

SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

som 2013-09

 Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.

1-1. Symbol Usage



DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

NOTICE – Indicates statements not related to personal injury.

1-2. Arc Welding Hazards



The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this unit.



During operation, keep everybody, especially children, away.



ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.

- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semiautomatic DC constant voltage (wire) welder, 2) a DC manual (stick) welder, or 3) an AC welder with reduced open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install, ground, and operate this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in

 Indicates special instructions.



This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

disconnect box or that cord plug is connected to a properly grounded receptacle outlet.

- When making input connections, attach proper grounding conductor first – double-check connections.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cord and ground conductor for damage or bare wiring – replace immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or repaired cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process not in use.
- Use GFCI protection when operating auxiliary equipment in damp or wet locations.

SIGNIFICANT DC VOLTAGE exists in inverter welding power sources AFTER removal of input power.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.



HOT PARTS can burn.

- Do not touch hot parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watch-person nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.

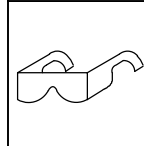


WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Do not weld where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 and AWS A6.0 (see Safety Standards).
- Do not weld where the atmosphere may contain flammable dust, gas, or liquid vapors (such as gasoline).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock, sparks, and fire hazards.
- Do not use welder to thaw frozen pipes.

- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.
- After completion of work, inspect area to ensure it is free of sparks, glowing embers, and flames.
- Use only correct fuses or circuit breakers. Do not oversize or bypass them.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



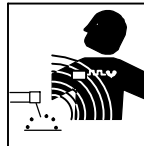
FLYING METAL or DIRT can injure eyes.

- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.



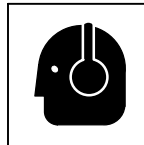
BUILDUP OF GAS can injure or kill.

- Shut off compressed gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



ELECTRIC AND MAGNETIC FIELDS (EMF) can affect Implanted Medical Devices.

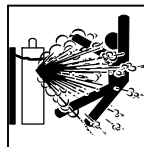
- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.



NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.



CYLINDERS can explode if damaged.

Compressed gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder – explosion will result.
- Use only correct compressed gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve. Do not stand in front of or behind the regulator when opening the valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

1-3. Additional Symbols For Installation, Operation, And Maintenance



FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring – be sure power supply system is properly sized, rated, and protected to handle this unit.



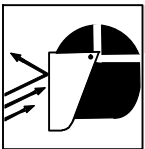
FALLING EQUIPMENT can injure.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep equipment (cables and cords) away from moving vehicles when working from an aerial location.
- Follow the guidelines in the Applications Manual for the Revised NIOSH Lifting Equation (Publication No. 94–110) when manually lifting heavy parts or equipment.



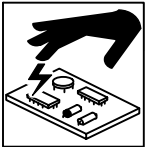
OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



FLYING SPARKS can injure.

- Wear a face shield to protect eyes and face.
- Shape tungsten electrode only on grinder with proper guards in a safe location wearing proper face, hand, and body protection.
- Sparks can cause fires — keep flammables away.



STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.



MOVING PARTS can injure.

- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.



WELDING WIRE can injure.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.



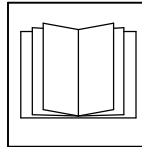
BATTERY EXPLOSION can injure.

- Do not use welder to charge batteries or jump start vehicles unless it has a battery charging feature designed for this purpose.



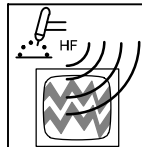
MOVING PARTS can injure.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance and troubleshooting as necessary.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



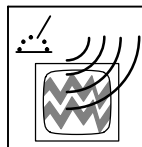
READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform maintenance and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.



ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

1-4. California Proposition 65 Warnings

⚠ Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

⚠ This product contains chemicals, including lead, known to the state of California to cause cancer, birth defects, or other reproductive harm. *Wash hands after use.*

1-5. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Safe Practices for Welding and Cutting Containers that have Held Combustibles, American Welding Society Standard AWS A6.0, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: www.nfpa.org and www.sparky.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151 (phone: 703-788-2700, website: www.cganet.com).

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 5060

Spectrum Way, Suite 100, Ontario, Canada L4W 5NS (phone: 800-463-6727, website: www.csa-international.org).

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (phone: 1-866-512-1800) (there are 10 OSHA Regional Offices—phone for Region 5, Chicago, is 312-353-2220, website: www.osha.gov).

Applications Manual for the Revised NIOSH Lifting Equation, The National Institute for Occupational Safety and Health (NIOSH), 1600 Clifton Rd, Atlanta, GA 30333 (phone: 1-800-232-4636, website: www.cdc.gov/NIOSH).

1-6. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from arc welding (and allied processes including spot welding, gouging, plasma arc cutting, and induction heating operations) creates an EMF field around the welding circuit. EMF fields may interfere with some medical implants, e.g. pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, restrict access for passers-by or conduct individual risk assessment for welders. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Do not place your body between welding cables. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.


4. Keep head and trunk as far away from the equipment in the welding circuit as possible.
5. Connect work clamp to workpiece as close to the weld as possible.
6. Do not work next to, sit or lean on the welding power source.
7. Do not weld whilst carrying the welding power source or wire feeder.



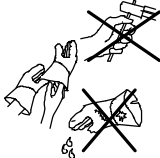
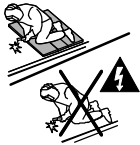
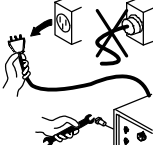

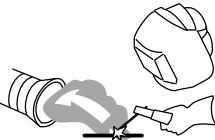
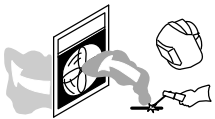
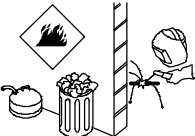

About Implanted Medical Devices:



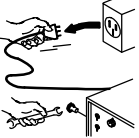

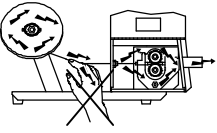
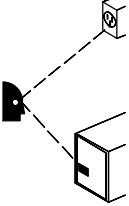
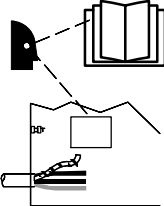
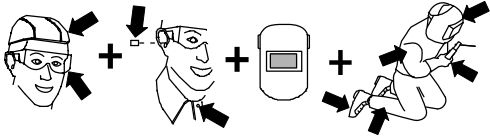
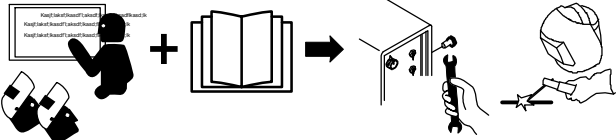
Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

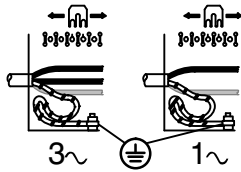
SECTION 2 – DEFINITIONS

2-1. Additional Safety Symbols And Definitions

 Some symbols are found only on CE products.

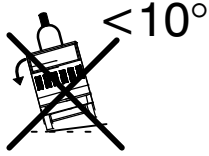
| | |
|---|--|
|  | <p>Warning! Watch Out! There are possible hazards as shown by the symbols.</p> <p style="text-align: right;">Safe1 2012-05</p> |
|  | <p>Do not discard product (where applicable) with general waste. Reuse or recycle Waste Electrical and Electronic Equipment (WEEE) by disposing at a designated collection facility. Contact your local recycling office or your local distributor for further information.</p> <p style="text-align: right;">Safe37 2012-05</p> |
|  | <p>Wear dry insulating gloves. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.</p> <p style="text-align: right;">Safe2 2012-05</p> |
|  | <p>Protect yourself from electric shock by insulating yourself from work and ground.</p> <p style="text-align: right;">Safe3 2012-05</p> |
|  | <p>Disconnect input plug or power before working on machine.</p> <p style="text-align: right;">Safe5 2012-05</p> |
|  | <p>Keep your head out of the fumes.</p> <p style="text-align: right;">Safe6 2012-05</p> |
|  | <p>Use forced ventilation or local exhaust to remove the fumes.</p> <p style="text-align: right;">Safe8 2012-05</p> |
|  | <p>Use ventilating fan to remove fumes.</p> <p style="text-align: right;">Safe10 2012-05</p> |
|  | <p>Keep flammables away from welding. Do not weld near flammables.</p> <p style="text-align: right;">Safe12 2012-05</p> |
|  | <p>Welding sparks can cause fires. Have a fire extinguisher nearby, and have a watchperson ready to use it.</p> <p style="text-align: right;">Safe14 2012-05</p> |

| | |
|---|--|
|  | <p>Do not weld on drums or any closed containers.</p> <p style="text-align: right;">Safe16 2012-05</p> |
|  | <p>Do not remove or paint over (cover) the label.</p> <p style="text-align: right;">Safe20 2012-05</p> |
|  | <p>Disconnect input plug or power before working on machine.</p> <p style="text-align: right;">Safe30 2012-05</p> |
|  | <p>Drive rolls can injure fingers.</p> <p style="text-align: right;">Safe32 2012-05</p> |
|  | <p>Welding wire and drive parts are at welding voltage during operation – keep hands and metal objects away.</p> <p style="text-align: right;">Safe33 2012-05</p> |
|  | <p>Consult rating label for input power requirements. See rating label on unit and check input voltage available at site.</p> <p style="text-align: right;">Safe34 2012-05</p> |
|  | <p>Become trained and read the instructions and labels before working on machine.</p> <p style="text-align: right;">Safe35 2012-05</p> |
|  | <p>Wear hat and safety glasses. Use ear protection and button shirt collar. Use welding helmet with correct shade of filter. Wear complete body protection.</p> <p style="text-align: right;">Safe38 2012-05</p> |
|  | <p>Become trained and read the instructions before working on the machine or welding.</p> <p style="text-align: right;">Safe40 2012-05</p> |



Move jumper links as shown on inside label to match input voltage at job site. Include extra length in grounding conductor and connect grounding conductor first. Connect line input conductors as shown on inside label. Double-check all connections, jumper link positions, and input voltage before applying power.

Safe49 2012-05



Falling unit can cause injury. Do not move or operate unit where it could tip.

Safe53 2012-05

2-2. Miscellaneous Symbols And Definitions

| | |
|-------------------------|------------------------------|
| A | Amperage |
| V | Volts |
| | Alternating Current (AC) |
| | Direct Current (DC) |
| | Remote |
| I | On |
| O | Off |
| | Protective Earth (Ground) |
| | Line Connection |
| 3~ | Three Phase |
| 1~ | Single Phase |
| | Gas Metal Arc Welding (GMAW) |
| U₁ | Primary Voltage |
| I_{1max} | Rated Maximum Supply Current |

| | |
|-------------------------|-----------------------------------|
| I_{1eff} | Maximum Effective Supply Current |
| U₂ | Conventional Load Voltage |
| I₂ | Rated Welding Current |
| X | Duty Cycle |
| % | Percent |
| U₀ | Rated No Load Voltage (OCV) |
| IP | Degree Of Protection |
| | Circuit Breaker |
| | Three Phase Transformer Rectifier |
| | Two-Step Trigger Operation |
| | Four-Step Trigger Operation |
| | Gas Input |
| | Gas Output |
| | Gas Type |


| | |
|-----------|---------------------------|
| | Voltage Input |
| | Wire Feed |
| Hz | Hertz |
| | Input |
| | Read Operator's Manual |
| | Wire Type |
| | Diameter |
| | Spot Weld Time |
| | Wire Burnback Control |
| | Wire Run-In Speed Control |
| | Low Inductance |
| | High Inductance |
| | Prewflow Time |
| | Postflow Time |

SECTION 3 – SPECIFICATIONS

3-1. Serial Number And Rating Label Location



The serial number and rating information for this product is located on the back. Use rating label to determine input power requirements and/or rated output. For future reference, write serial number in space provided on back cover of this manual.

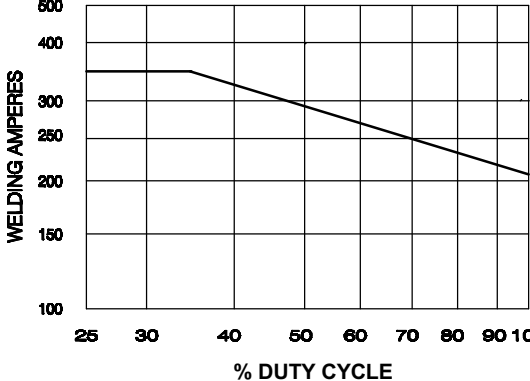
3-2. Specifications

 Do not use information in unit specifications table to determine electrical service requirements. See Sections 4-4 and 4-5 for information on connecting input power.

| Model | Rated Output | | | Max. Open Circuit Voltage | Amperage Range DC | Dimension (mm) | Weight (kg) |
|--|-----------------|-----------------|-----------------|---------------------------|-------------------|------------------|-------------|
| | 100% | 60% | 35% | | | | |
| 300* 230/400 VAC 50/60 Hz | 180 A 23 V | 230 A 25.5 V | 300 A 29.0 V | 43.5 | 30-300 A | 471 x 825 x 1066 | 88 Net |
| Wire feed speed range 1.3 mpm to 26 mpm. | | | | | | | |
| Model | Rated Output | | | Max. Open Circuit Voltage | Amperage Range DC | Dimension (mm) | Weight (kg) |
| | 100% | 60% | 35% | | | | |
| 380* 230/400 VAC 50/60 Hz | 210 A 24.5 V | 270 A 27.5 V | 350 A 31.5 V | 43.0 V | 30-350 A | 471 x 825 x 1066 | 102.6 Net |
| Wire feed speed range 1.3 mpm to 26 mpm. | | | | | | | |

3-3. Duty Cycle And Overheating



WELDING AMPERES

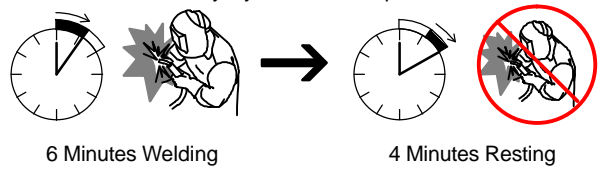
% DUTY CYCLE

Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

If unit overheats, thermostat(s) opens, output stops, and cooling fan runs. Wait fifteen minutes for unit to cool. Reduce amperage or voltage, or duty cycle before welding.


NOTICE – Exceeding duty cycle can damage unit and void warranty.

60% Duty Cycle At 270 Amperes



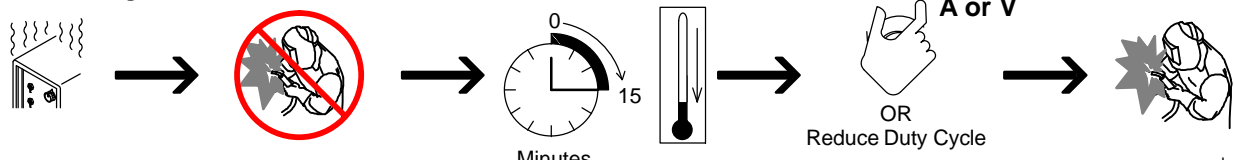
6 Minutes Welding 4 Minutes Resting

100% Duty Cycle At 210 Amperes



Continuous Welding

Overheating

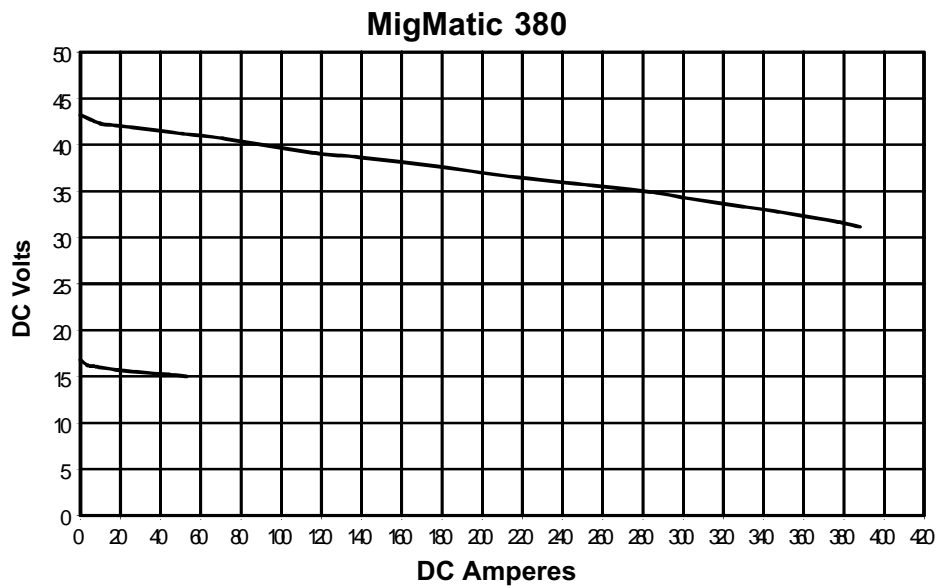
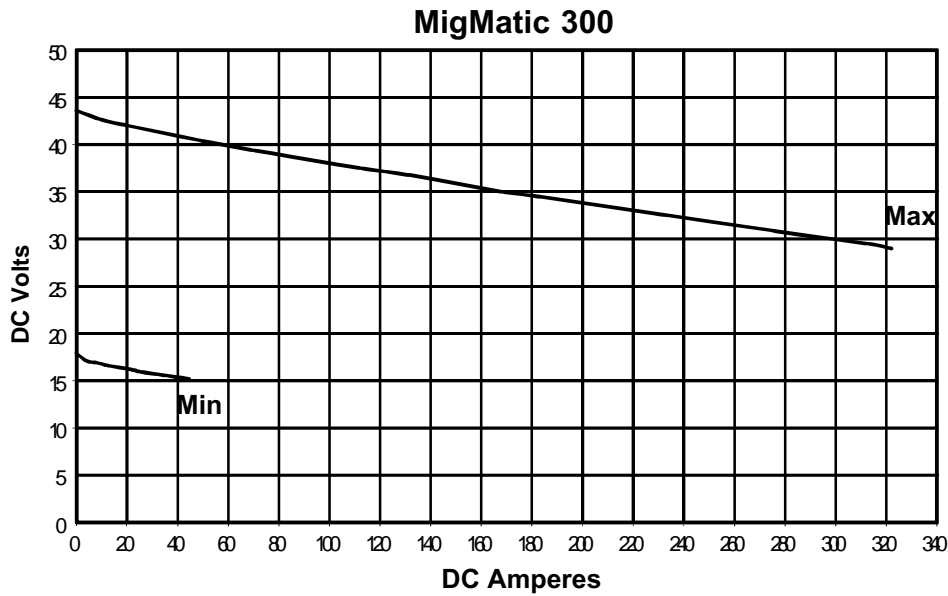


Minutes OR Reduce Duty Cycle

sduty1 5/95

3-4. Volt-Ampere Curves

The volt-ampere curves show the normal minimum and maximum voltage and amperage output capabilities of the welding power source. Curves of other settings fall between the curves shown.



3-5. Environmental Specifications

A. IP Rating

| IP Rating | Operating Temperature Range |
|--|-----------------------------|
| IP22S This equipment is designed for indoor use and is not intended to be used or stored outside. | -10 to 40 °C (14 to 104°F). |

B. Information On Electromagnetic Fields (EMF)

⚠ This equipment shall not be used by the general public as the EMF limits for the general public might be exceeded during welding.

This equipment is built in accordance with EN 60974–1 and is intended to be used only in an occupational environment (where the general public access is prohibited or regulated in such a way as to be similar to occupational use) by an expert or an instructed person.

Wire feeders and ancillary equipment (such as torches, liquid cooling systems and arc striking and stabilizing devices) as part of the welding circuit may not be a major contributor to the EMF. See the Owner's Manuals for all components of the welding circuit for additional EMF exposure information.

- The EMF assessment on this equipment was conducted at 0.5 meter.
- At a distance of 1 meter the EMF exposure values were less than 20% of the permissible values.

ce-emf 1 2010-10

C. Information On Electromagnetic Compatibility (EMC)

⚠ This Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There can be potential difficulties in ensuring electromagnetic compatibility in those locations, due to conducted as well as radiated disturbances.

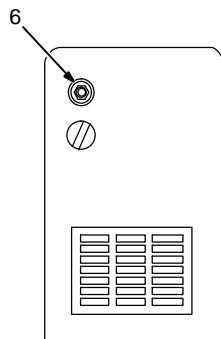
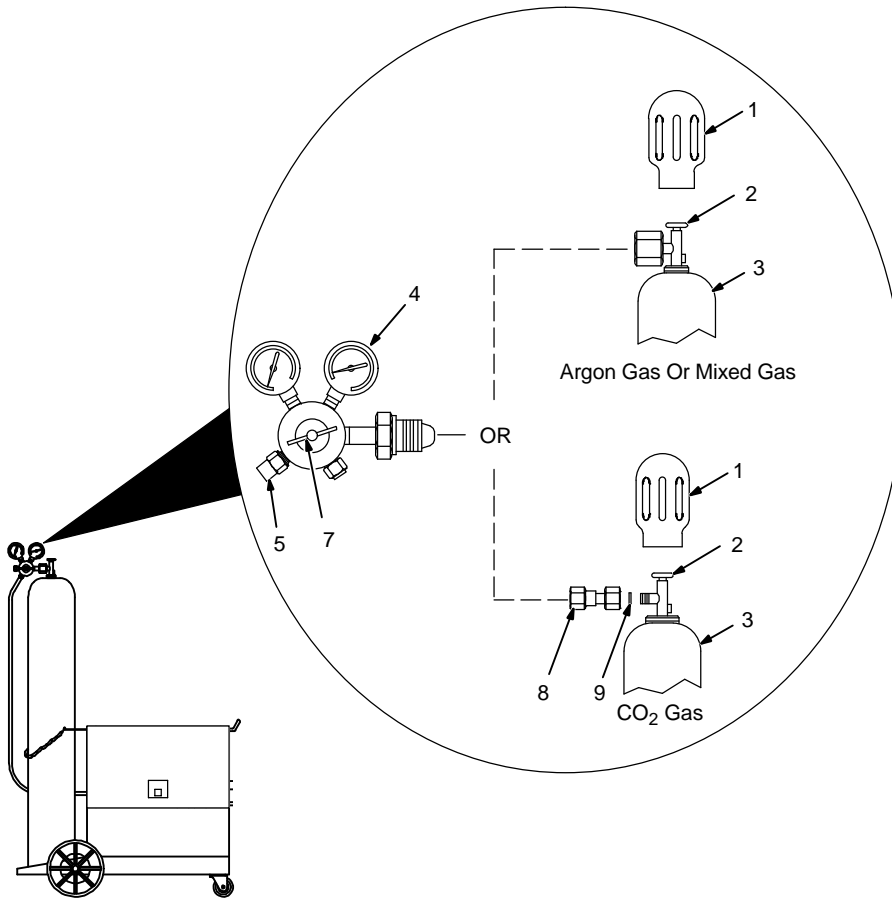
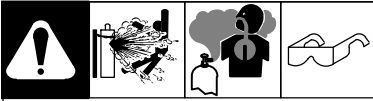
This equipment complies with IEC61000-3-11 and IEC 61000–3–12 and can be connected to public low-voltage systems provided that the public low-voltage system impedance Z_{max} at the point of common coupling is less than $40.7m\Omega$ (or the short-circuit power S_{sc} is greater than $3,931,913,158VA$). It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the system impedance complies with the impedance restrictions.

ce-emc 1 2014-07

Notes

SECTION 4 – INSTALLATION

4-1. Installing Gas Supply



Rear Panel

Obtain gas cylinder and chain to running gear, wall, or other stationary support so cylinder cannot fall and break off valve.

- 1 Cap
- 2 Cylinder Valve

Remove cap, stand to side of valve, and open valve slightly. Gas flow blows dust and dirt from valve. Close valve.

- 3 Cylinder
- 4 Regulator/Flowmeter

Install so face is vertical.

- 5 Regulator/Flowmeter Gas Hose Connection
- 6 Welding Power Source Gas Hose Connection

Connect supplied gas hose between regulator/flowmeter gas hose connection, and fitting on rear of welding power source.

- 7 Flow Adjust

Typical flow rate is between 15-20 liters per minute. Check wire manufacturer's recommended flow rate.

- 8 CO₂ Adapter (Customer Supplied)
- 9 O-Ring (Customer Supplied)

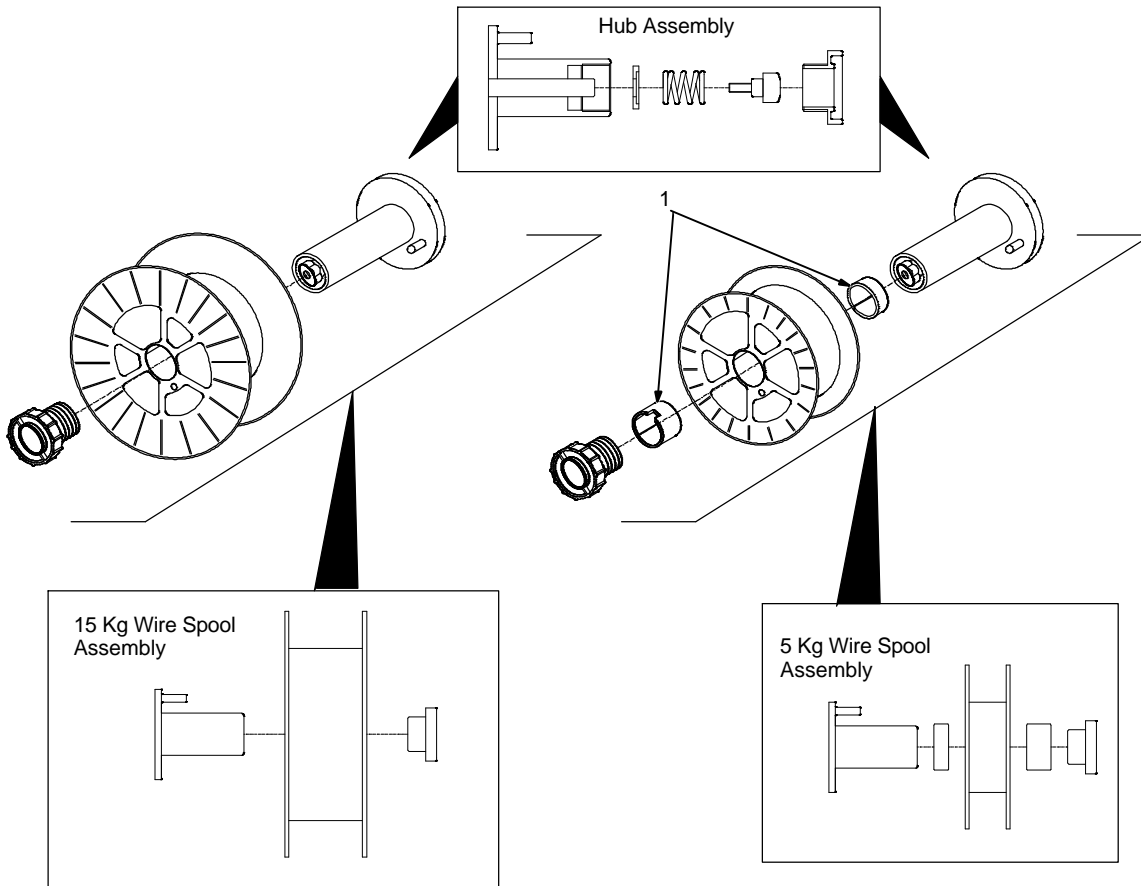
Install adapter with O-ring between regulator/flowmeter and CO₂ cylinder.

Ref. 148 265-B / Ref. 149 827-B / Ref. 158 697-A

4-2. Installing Wire Spool And Adjusting Hub Tension



1 Spacers
Use only for 5Kg spool.



Tools Needed:



Ref. D2

4-3. Positioning Jumper Links (230/400V 3-Phase Models)



⚠ Disconnect and lockout/tagout input power before connecting input conductors from unit. Follow established procedures regarding the installation and removal of lockout/tagout devices.

Check input voltage available at site.

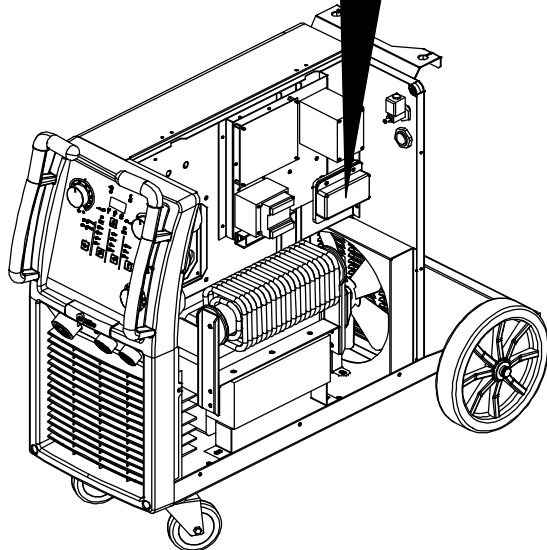
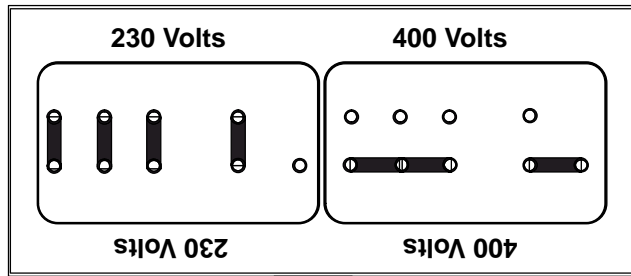
1 Jumper Link Label

Check label – only one is on unit.

2 Jumper Links

Move jumper links to match input voltage.

Close and secure access door. Follow established lockout/tagout procedures to put unit in service.



4-4. Electrical Service Guide

Elec Serv 2014–01

⚠ Failure to follow these electrical service guide recommendations could create an electric shock or fire hazard. These recommendations are for a dedicated circuit sized for the rated output and duty cycle of the welding power source.

In dedicated circuit installations, the National Electrical Code (NEC) allows the receptacle or conductor rating to be less than the rating of the circuit protection device. All components of the circuit must be physically compatible. See NEC articles 210.21, 630.11, and 630.12.

☞ Power cord supplied with unit is sized for 230 volt operation. Larger power cord may be required for cable length greater than 3 meters. Consult national or local regulations.

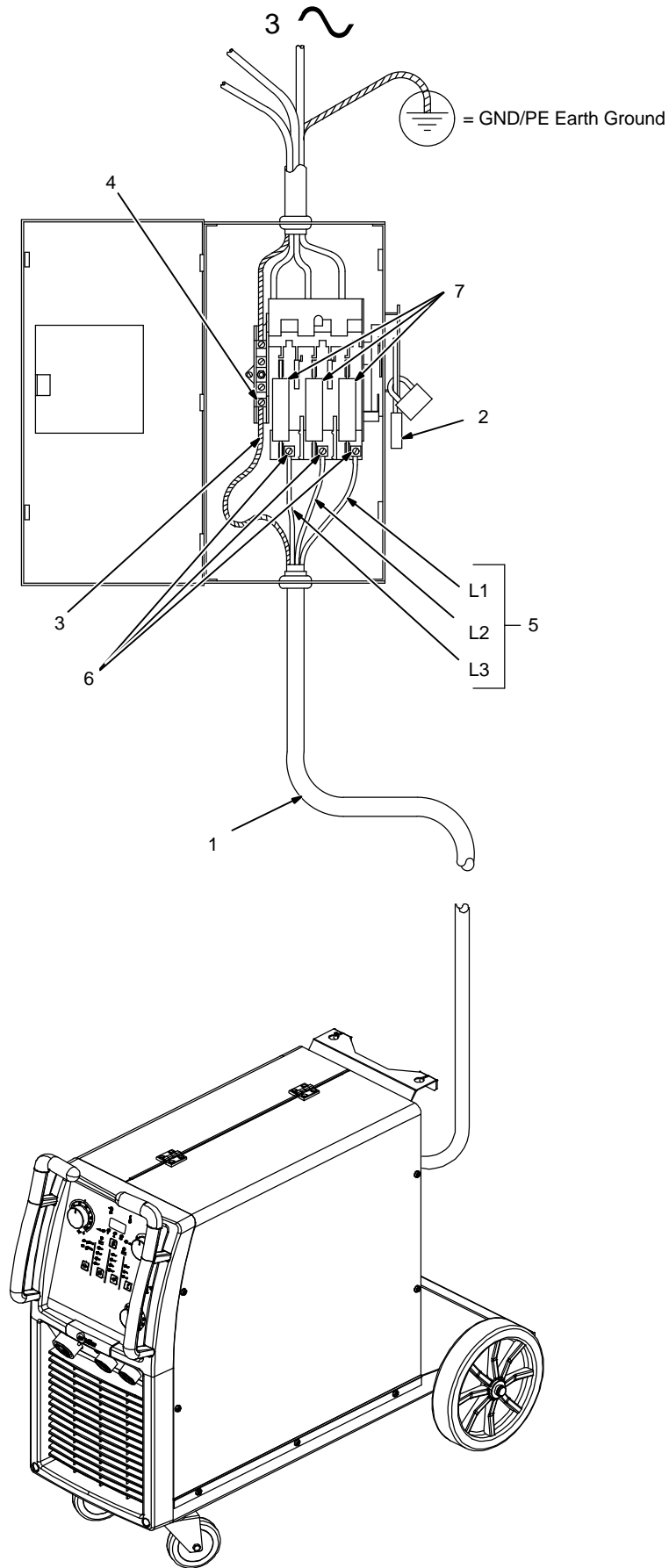
| MigMatic Model | 300 | | 380 | |
|--|-------------------------------|-------------|----------------------|-------------|
| | 50/60 Hz Three Phase | | 50/60 Hz Three Phase | |
| Input Voltage (V) | 230 | 400 | 230 | 400 |
| Input Amperes (A) At Rated Output | 35 | 20 | 40 | 23 |
| Max Recommended Standard Fuse Rating In Amperes ¹ | | | | |
| | Time-Delay Fuses ² | | | |
| | 40 | 20 | 50 | 25 |
| Normal Operating Fuses ³ | | | | |
| | 50 | 30 | 60 | 35 |
| Min Input Conductor Size In mm ² (AWG) ⁴ | 6 (10) | 4 (14) | 6 (10) | 4 (14) |
| Max Recommended Input Conductor Length In Meters (Feet) | 30 (99) | 36 (117) | 26 (86) | 41 (134) |
| Min Grounding Conductor Size In mm ² (AWG) ⁴ | 6 (10) | 4 (14) | 6 (10) | 4 (14) |

Reference: 2014 National Electrical Code (NEC) (including article 630)

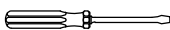
- 1 If a circuit breaker is used in place of a fuse, choose a circuit breaker with time-current curves comparable to the recommended fuse.
- 2 "Time-Delay" fuses are UL class "RK5" . See UL 248.
- 3 "Normal Operating" (general purpose - no intentional delay) fuses are UL class "K5" (up to and including 60 amps), and UL class "H" (65 amps and above).
- 4 Conductor data in this section specifies conductor size (excluding flexible cord or cable) between the panelboard and the equipment per NEC Table 310.15(B)(16). If a flexible cord or cable is used, minimum conductor size may increase. See NEC Table 400.5(A) for flexible cord and cable requirements.

Notes

4-5. Connecting 3-Phase Input Power



Tools Needed:



4-5. Connecting 3-Phase Input Power (Continued)



⚠ Installation must meet all National and Local Codes – have only qualified persons make this installation.

⚠ Disconnect and lockout/tagout input power before connecting input conductors from unit. Follow established procedures regarding the installation and removal of lockout/tagout devices.

⚠ Always connect green or green/yellow conductor to supply grounding terminal first, and never to a line terminal.

See rating label on unit and check input voltage available at site.

For Three-Phase Operation

- 1 Input Power Cord.
- 2 Disconnect Device (switch shown in the OFF position)
- 3 Green Or Green/Yellow Grounding Conductor
- 4 Disconnect Device Grounding Terminal
- 5 Input Conductors (L1, L2 And L3)
- 6 Disconnect Device Line Terminals

Connect green or green/yellow grounding conductor to disconnect device grounding terminal first.

Connect input conductors L1, L2, and L3 to disconnect device line terminals.

7 Over-Current Protection

Select type and size of over-current protection using Section 4-4 (fused disconnect switch shown).

Close and secure door on disconnect device. Follow established lockout/tagout procedures to put unit in service.

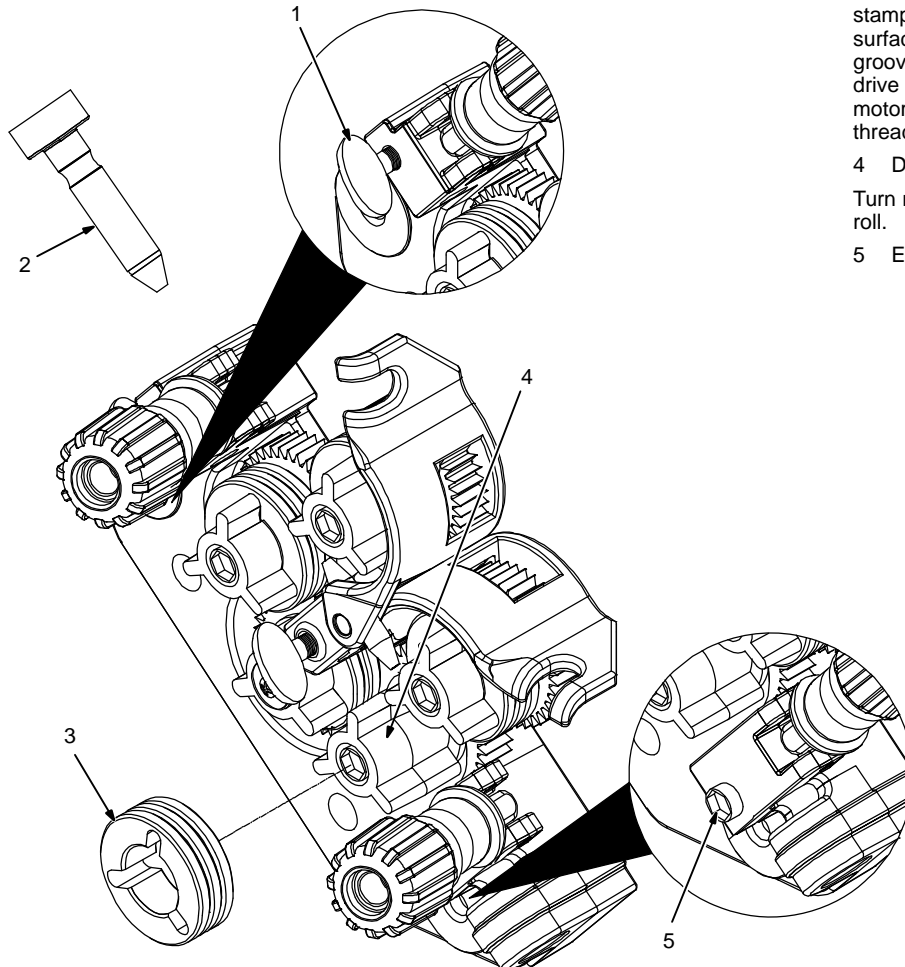
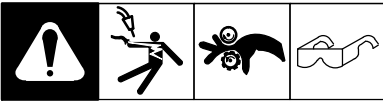
input2 2012-05

Notes



Work like a Pro!
Pros weld and cut safely. Read the safety rules at the beginning of this manual.

4-6. Changing Drive Rolls And Wire Inlet Guide (MigMatic 380 Models)



1 Inlet Wire Guide Securing Screw

2 Inlet Wire Guide

Loosen screw. Slide tip as close to drive rolls as possible without touching. Tighten screw.

3 Drive Roll

The drive roll consists of two different sized grooves. The stamped markings on the end surface of the drive roll refers to the groove on the opposite side of the drive roll. The groove closest to the motor shaft is the proper groove to thread.

4 Drive Roll Securing Nut

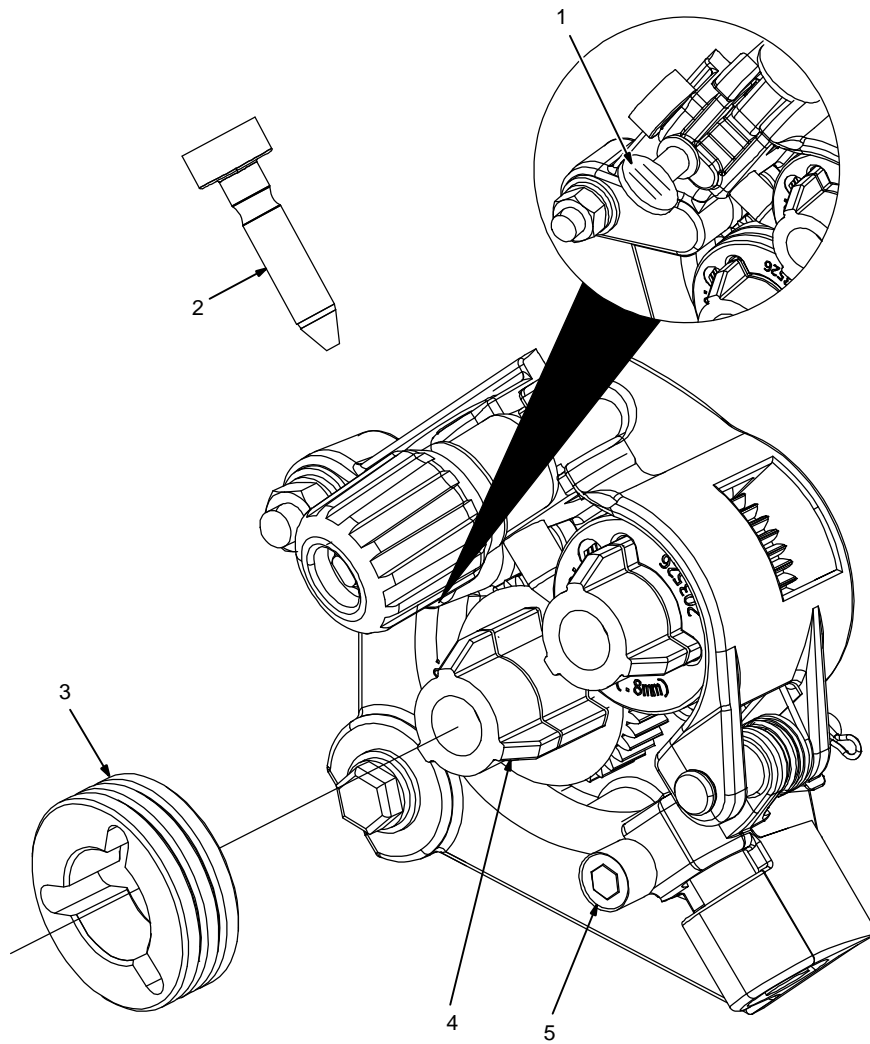
Turn nut one click to secure drive roll.

5 Euro-Adapter Securing Screw

 1/4 in.

956142845_7_14_A

4-6. Changing Drive Rolls And Wire Inlet Guide (MigMatic 300 Models) (Continued)



1 Inlet Wire Guide Securing Screw

2 Inlet Wire Guide

Loosen screw. Slide tip as close to drive rolls as possible without touching. Tighten screw.

3 Drive Roll

The drive roll consists of two different sized grooves. The stamped markings on the end surface of the drive roll refers to the groove on the opposite side of the drive roll. The groove closest to the motor shaft is the proper groove to thread.

4 Drive Roll Securing Nut

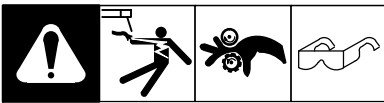
Turn nut one click to secure drive roll.

5 Euro-Adapter Securing Screw

1/4 in.

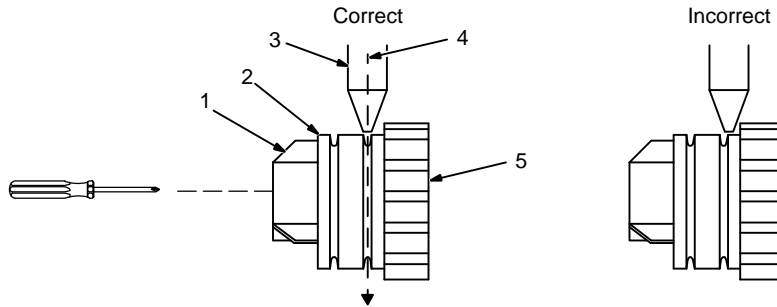
956142845_6_14_A

4-7. Aligning Drive Rolls and Wire Guide



⚠ Turn off and disconnect input power

View is from top of drive rolls looking down with pressure assembly open.

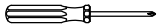


- 1 Drive Roll Securing Nut
- 2 Drive Roll
- 3 Wire Guide
- 4 Welding Wire
- 5 Drive Gear

Insert screwdriver, and turn screw in or out until drive roll groove lines up with wire guide.

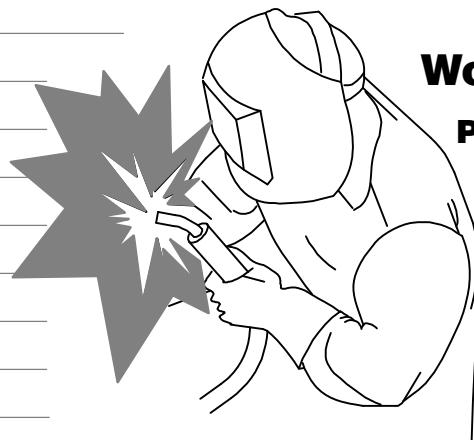
Close pressure roll assembly.

Tools Needed:



Ref. 800 412-A

Notes



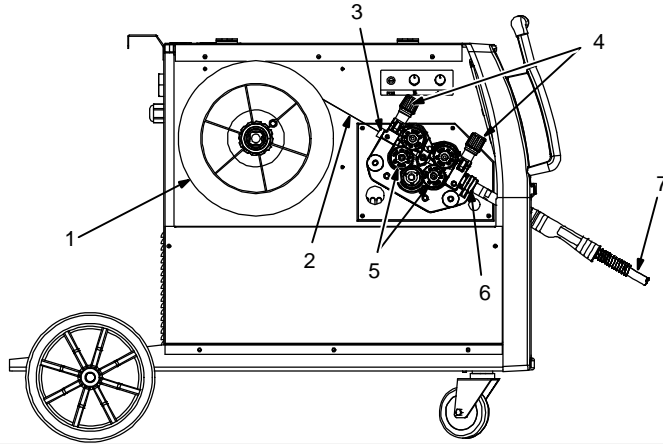
Work like a Pro!

Pros weld and cut safely. Read the safety rules at the beginning of this manual.

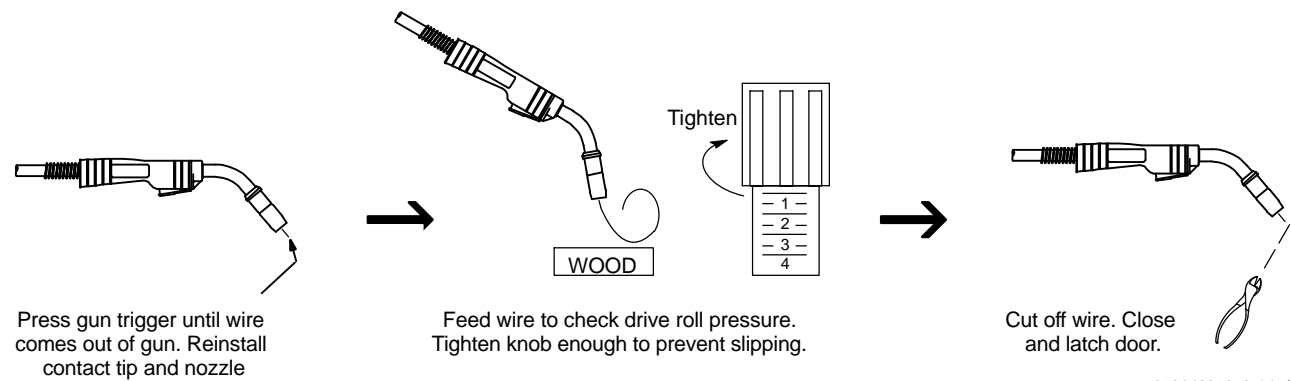
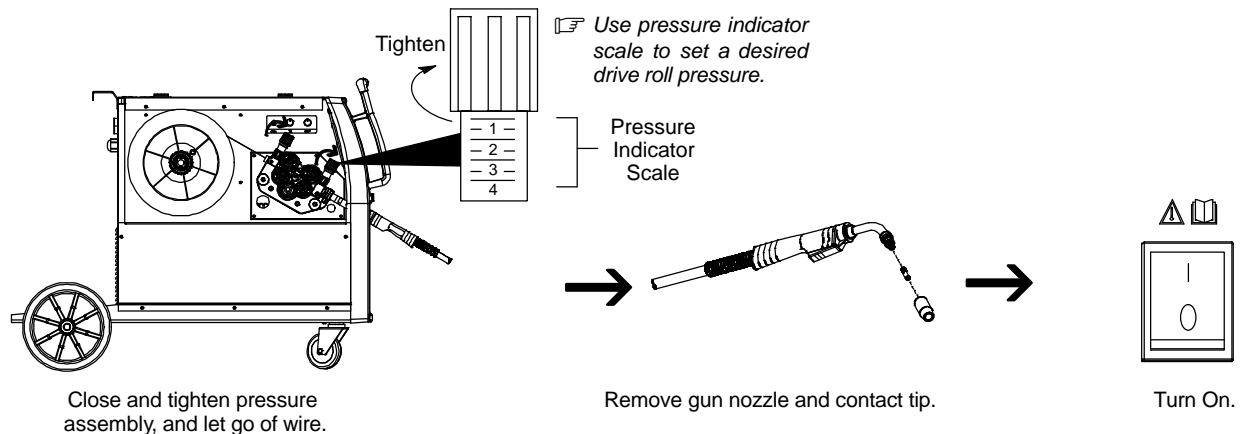
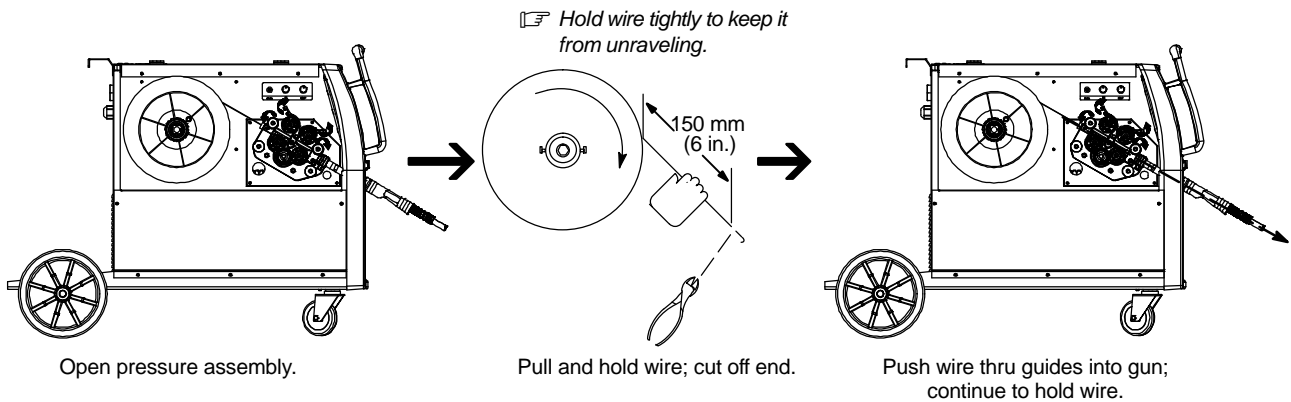
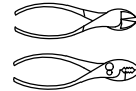
4-8. Threading Welding Wire And Adjusting Pressure Roll Tension



- 1 Wire Spool
 - 2 Welding Wire
 - 3 Inlet Wire Guide
 - 4 Pressure Adjustment Knob
 - 5 Drive Roll
 - 6 Outlet Wire Guide
 - 7 Gun Conduit Cable
- Lay gun cable out straight.

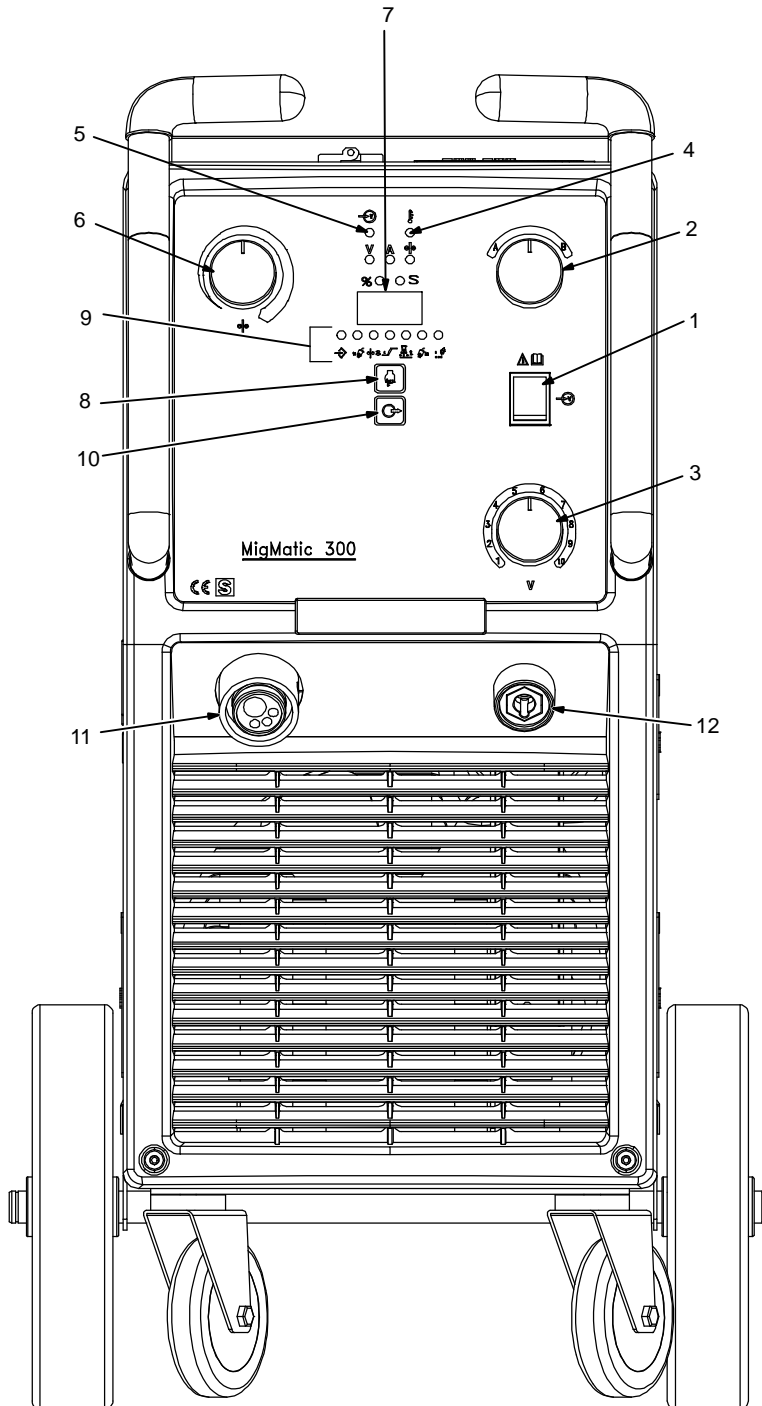
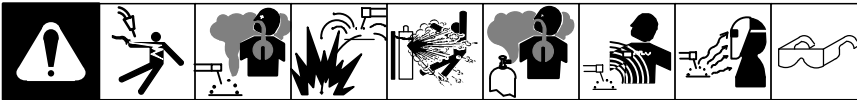


Tools Needed:



SECTION 5 – OPERATION

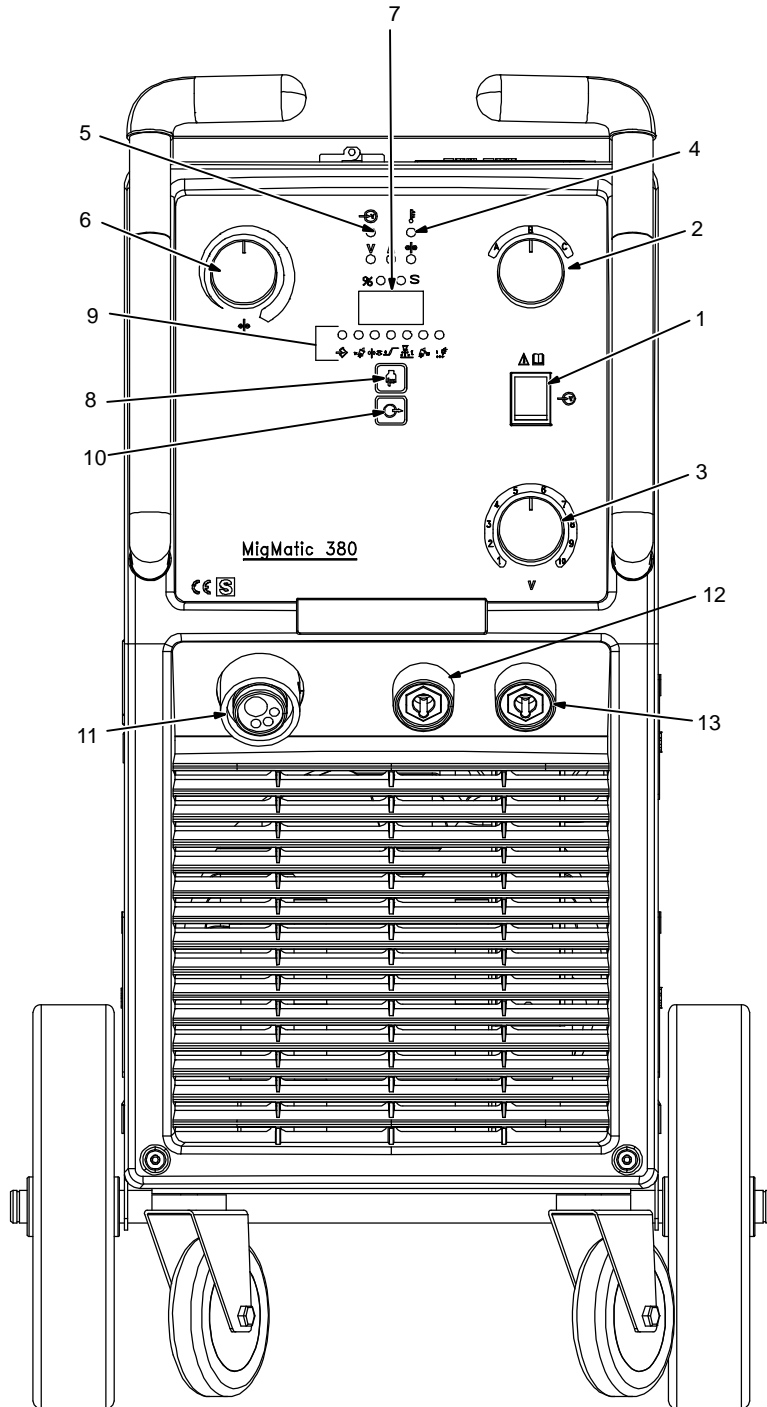
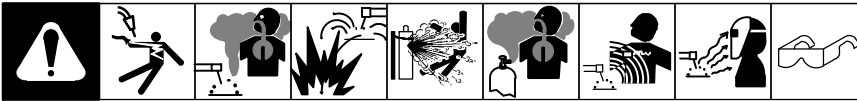
5-1. Controls For MigMatic 300



- 1 Power Switch S1
Use switch to turn power on and off.
- 2 Voltage Range Control S2
Allows selection of voltage in two coarse ranges, A or B.
- 3 Voltage Adjustment Control S3
This control allows for 10 voltage settings in each of the two coarse voltage ranges (A or B) of S2.
- 4 High Temperature Shutdown Light PL2 (Orange LED)
PL2 lights up when unit overheats and shuts down.
- 5 Power Indicator Light PL1 (White LED)
PL1 is lit when power is On.
- 6 Wire Feed Speed Control R1
Turn control clockwise to increase wire feed speed.

This control will also allow adjustment of sequencer parameters (see Section 5-4).
- 7 Digital Display Meter
Displays values and parameters for selected welding processes.
- 8 Setup Button
Use button to select parameters (V, A, %) and the sequencer control.
- 9 Sequencer Control LEDs
See Section 5-4.
- 10 Trigger Mode Button
Use control to select desired trigger mode (see Section 5-5).
- 11 MIG Torch Connection
Connection for Euro style MIG gun.
- 12 Work Lead Connection

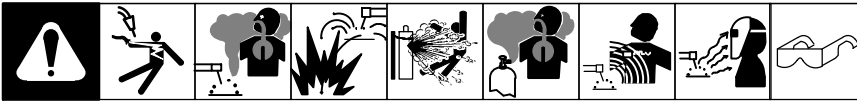
5-2. Controls For MigMatic 380



- 1 Power Switch S1
Use switch to turn power on and off.
- 2 Voltage Range Control S2
Allows selection of voltage in three coarse ranges, A, B or C.
- 3 Voltage Adjustment Control S3
This control allows for 10 voltage settings in each of the three coarse voltage ranges (A, B or C) of S2.
- 4 High Temperature Shutdown Light PL2 (Orange LED)
PL2 lights up when unit overheats and shuts down.
- 5 Power Indicator Light PL1 (White LED)
PL1 is lit when power is On.
- 6 Wire Feed Speed Control R1
Turn control clockwise to increase wire feed speed.
This control will also allow adjustment of sequencer parameters (see Section 5-4).
- 7 Digital Display Meter
Displays values and parameters for selected welding processes.
- 8 Setup Button
Use button to select parameters (V, A, %) and the sequencer control.
- 9 Sequencer Control LEDs
See Section 5-4.
- 10 Trigger Mode Button
Use control to select desired trigger mode (see Section 5-5).
- 11 MIG Torch Connection
Connection for Euro style MIG gun.
- 12 Low Inductance Negative (-) Weld Output Terminal
Connect work lead here for most short arc applications.
- 13 High Inductance Negative (-) Weld Output Terminal
Connect work lead here for stainless steel and spray arc applications.

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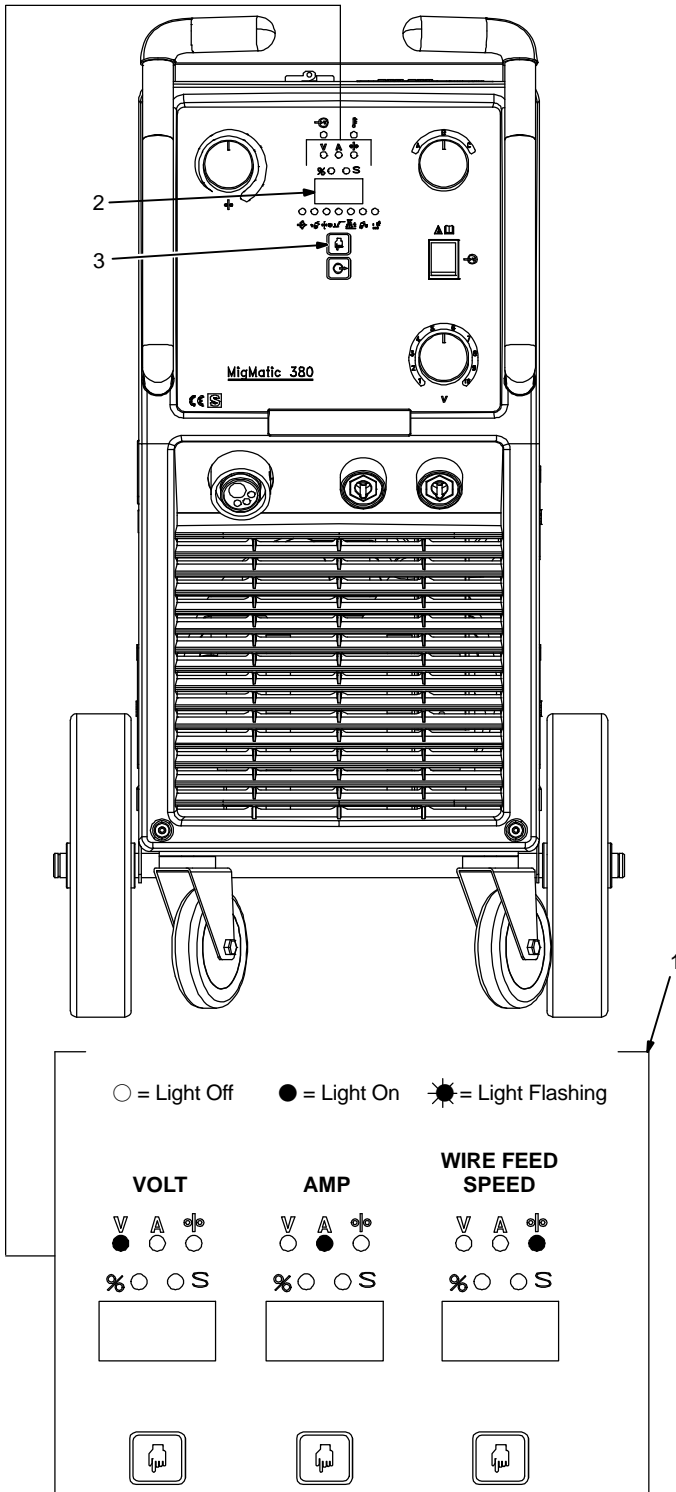
5-3. Selecting Parameters (MigMatic 300 And 380 Models)



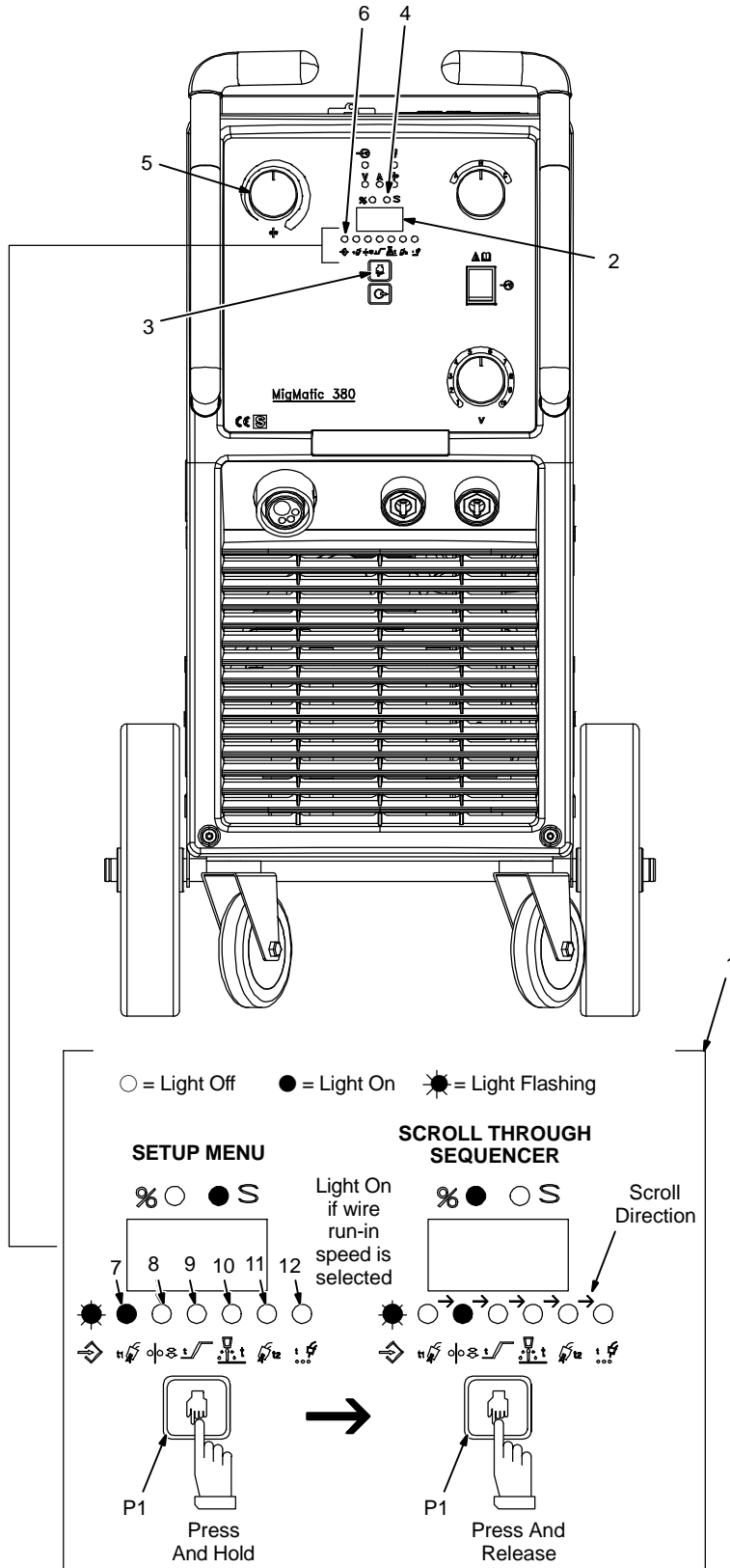
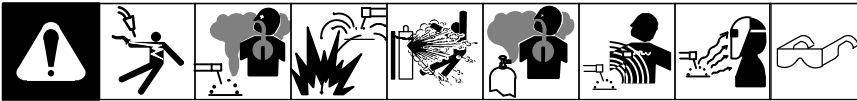
- 1 Parameter LEDs
- 2 Digital Display Meter D1
- 3 Setup Button P1

To select welding parameters, proceed as follows:

Press and release P1 push button to select desired parameter (V, A, or %) and the corresponding LED will light up. Display meter D1 displays selected parameter.



5-4. Sequencer Controls Settings (MigMatic 300 And 380 Models)



- 1 Sequencer Control LEDs
- 2 Digital Display Meter D1
- 3 Setup Button P1
- 4 Parameter LED S (Seconds)
- 5 Wire Feed Speed Control R1
- 6 Setup Menu LED

To enter Sequencer Control set-up mode and scroll through parameters, press and hold for three seconds the Setup button P1. Setup menu begins flashing. Selected parameter will be displayed on the meter and the corresponding LED lights. While in set-up mode, scroll through parameters by pressing and releasing Setup button P1.

☞ Unit will automatically exit the set-up menu if no activity is detected for more than five seconds. Press and hold Setup button P1 control to re-enter set-up mode.

7 Preflow Time Control LED

Use control to set length of time gas flows before arc initiation. When selected, use the Wire Feed Speed Control R1 to change the value. Default is 0.3 seconds (min = 0s, max = 5.0s).

8 Wire Run-In Speed Control LED

Use control to determine rate at which welding wire feeds before an arc is initiated. When selected, use the Wire Feed Speed Control R1 to change value. Default = 100% (min = 25%, max = 100%)

☞ Run-In control is active only with the slope time set to 0 sec.

9 Slope Time Control LED

Use control to select amount of time that it takes to slope up/down from initial amperage to weld amperage. To disable, set to 0. When selected, use the Wire Feed Speed Control R1 to change value. Default = 0 seconds (min = 0s, max = 5s).

10 Burnback Time Control LED

Use control to select time that welding wire stays energized after trigger is released. When selected, use the Wire Feed Speed Control R1 to change value. Default = 0.03 seconds (min = 0.03s, max = 0.25s).

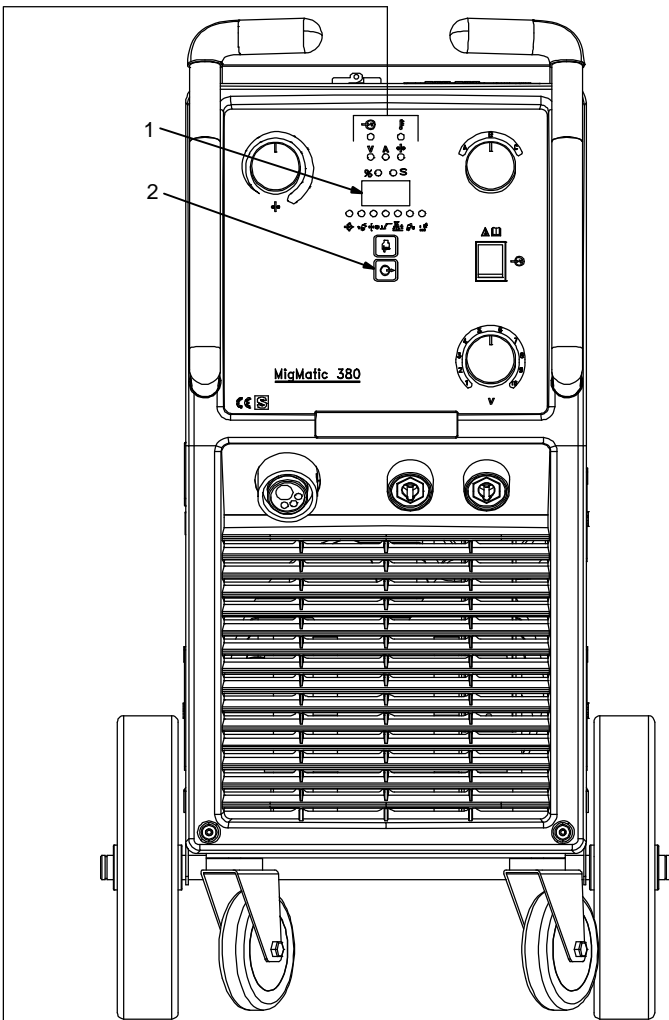
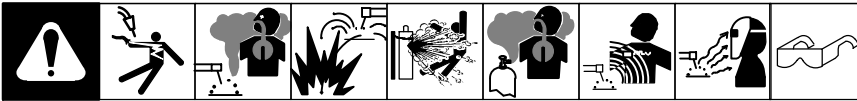
11 Postflow Time Control LED

Use control to set length of time gas flows after welding stops to protect weld puddle. When selected, use the Wire Feed Speed Control R1 to change the value. Default = 3.0 seconds (min = 0s, max = 10.0s).

12 Spot Weld Time Control LED

Use control to set time that welding arc is active before shutting off automatically. When selected, use the Wire Feed Speed Control R1 to change the value. Default = 1.0 seconds (min = 1s, max = 120s). To select this control see Section 5-5.

5-5. Trigger Mode And Spot Time Selection (MigMatic 300 And 380 Models)



Always select a trigger mode.

- 1 Digital Display Meter D1
- 2 Trigger Mode Selection Button P2

To select trigger mode and spot weld timer, proceed as follows:

Press and release P2 push button. The display meter D1 displays desired trigger mode, 2-t, 4-t, or spot weld time Spt.

3 2-t Trigger Mode

When trigger is pressed, welding starts. When trigger is released, welding stops.

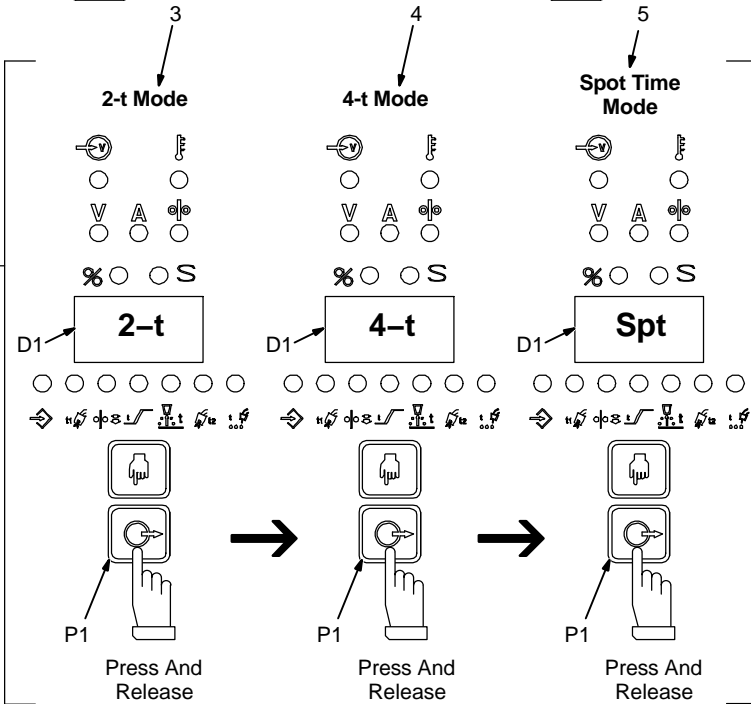
4 4-t Trigger Mode

When trigger is pressed, welding starts. When trigger is released, welding continues. When trigger is pressed and released as second time, welding stops.

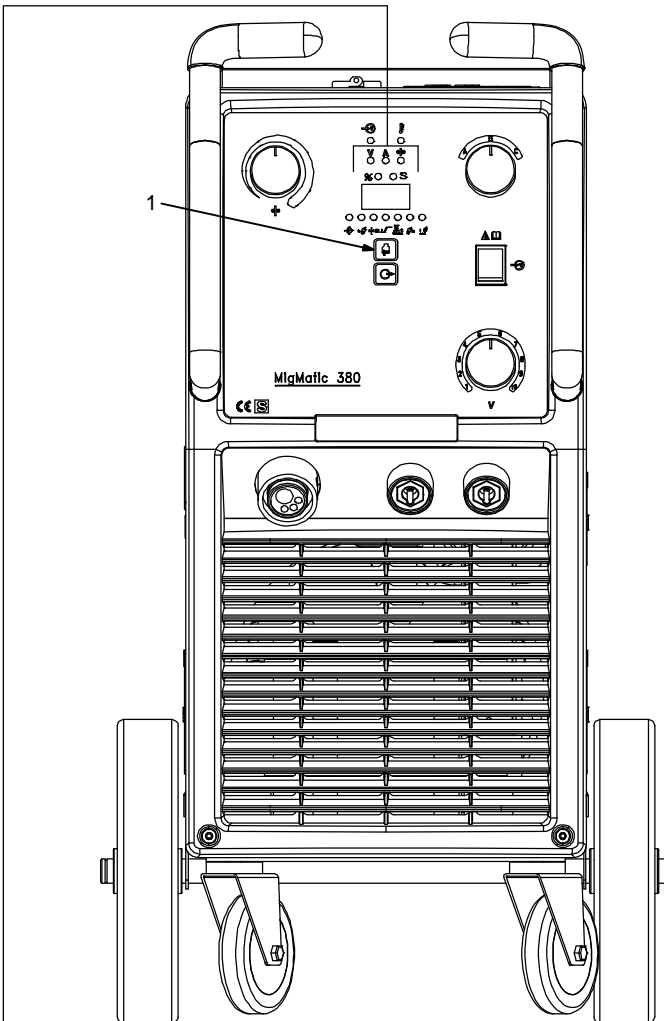
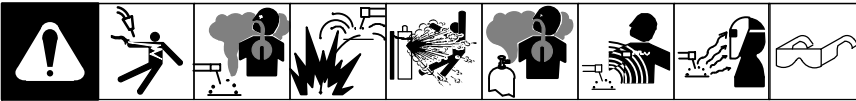
5 Spot Time Mode

See Section 5-4 for setting values.

After turning On unit, display meter D1 displays for 1 second the latest trigger mode selected. Default is 2-t.



5-6. Welding Wire Loading Settings (MigMatic 300 And 380 Models)



1 Setup Button P1

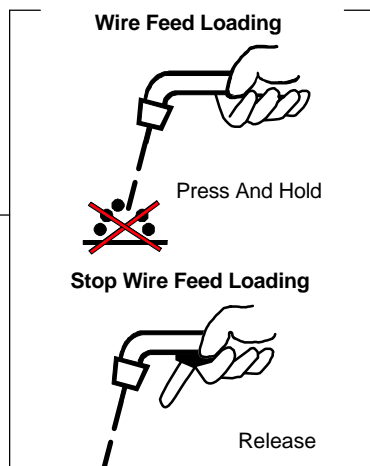
Prepare unit for welding wire loading as follows:

- Install wire spool and adjust hub tension (see Section 4-2).
- Use proper drive rolls and wire guide (see Section 4-6).
- Thread welding wire and adjust pressure roll tension (see Section 4-8).

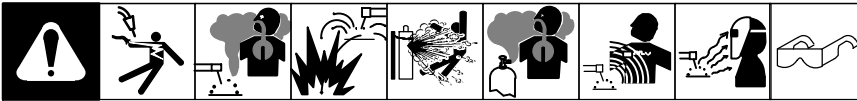
Without starting a weld, press and hold for three seconds the torch trigger to load welding wire.


After pressing and holding the torch trigger, gas valve and input power contactor are disabled. This method prevents the risks of arc ignitions due to contact with conductive parts during wire loading. Welding wire will be loaded at a wire feed speed value of about 11 meters per minute (mpm). The wire feed speed is only measured in meters per minute.

To stop loading wire, release torch trigger.



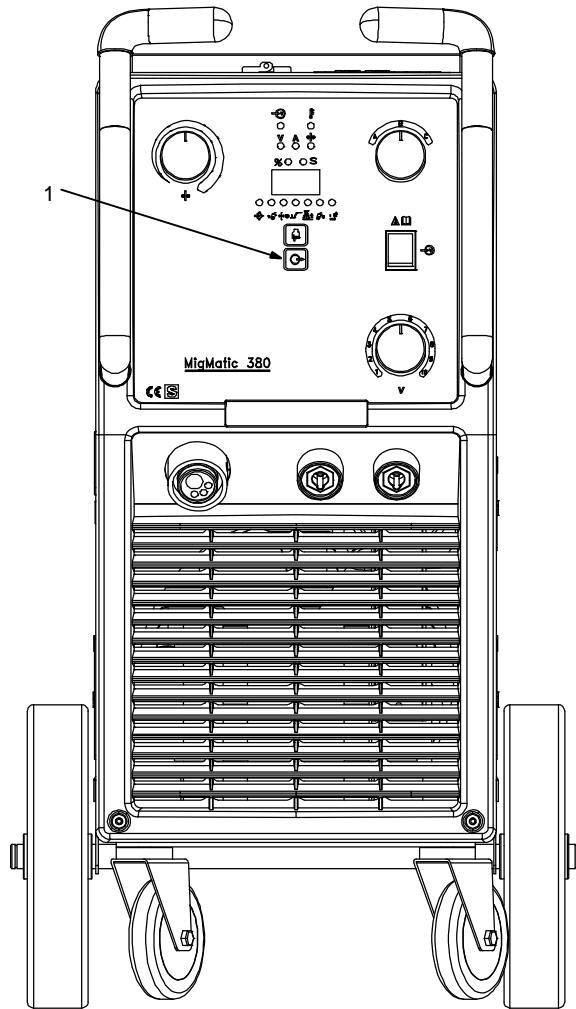
5-7. Resetting Unit To Factory Default Settings (MigMatic 300 And 380 Models)



 This procedure will delete all operator specified parameters, and recall all factory parameters.

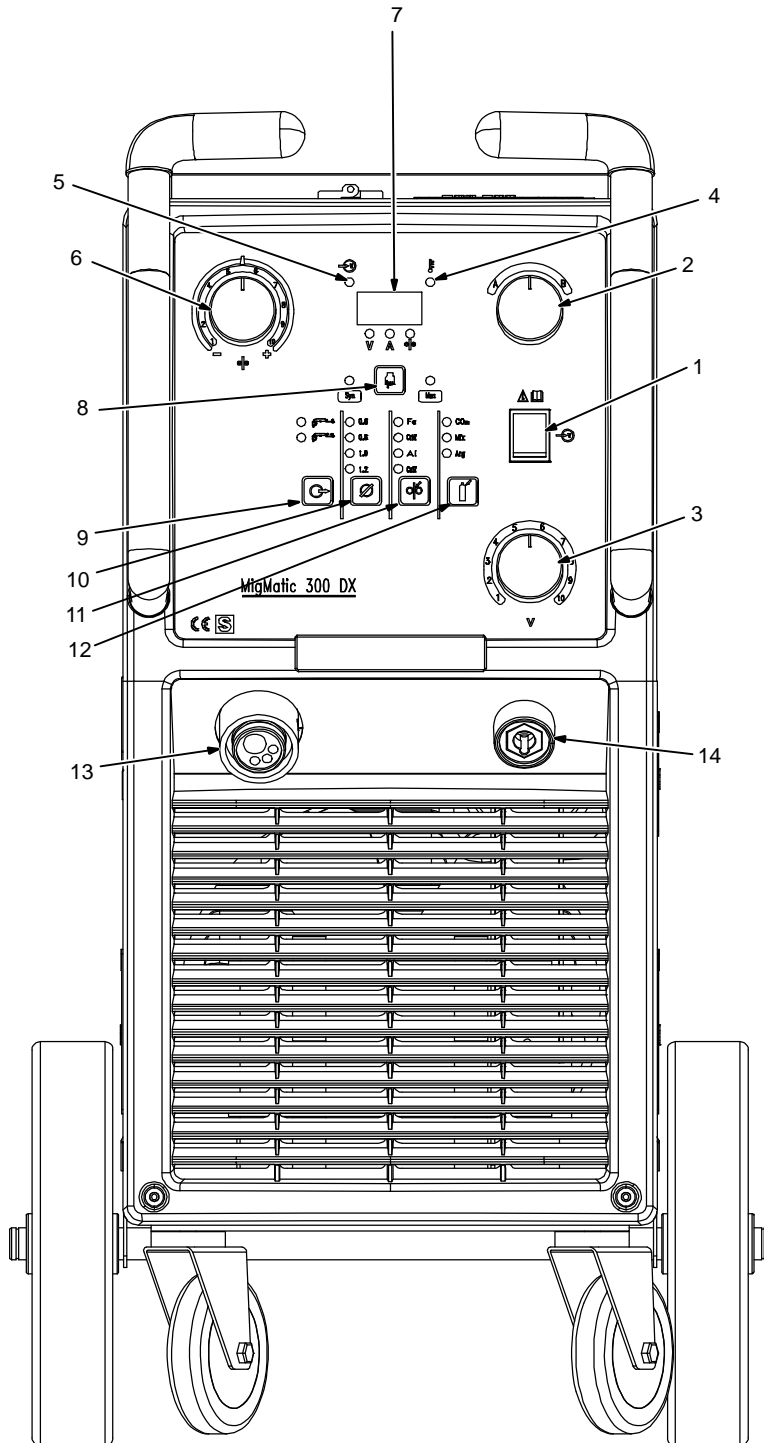
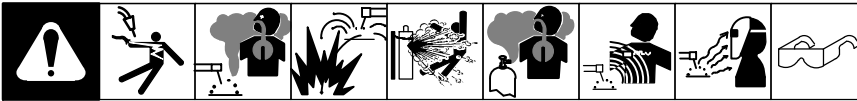
- 1 Trigger Mode Selector Switch P2

Press and hold P2 button, and factory defaults will be restored.



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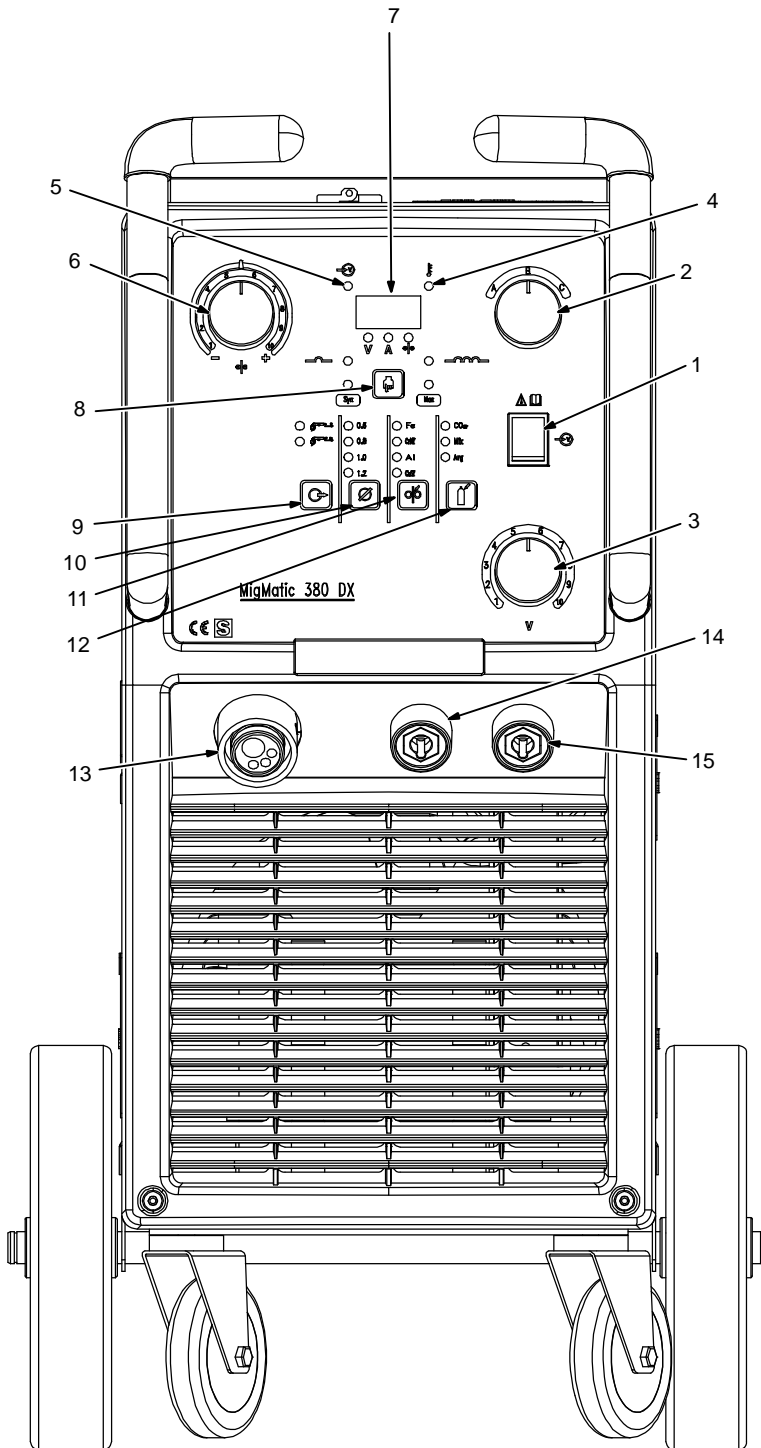
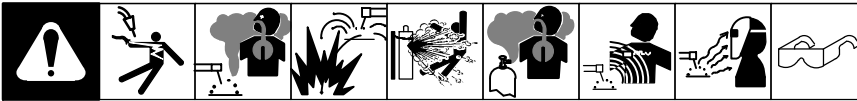
5-8. Controls For MigMatic 300DX



- 1 Power Switch S1
Use switch to turn power on and off.
- 2 Voltage Range Control S2
Allows selection of voltage in two coarse ranges, A or B.
- 3 Voltage Adjustment Control S3
This control allows for 10 voltage settings in each of the two coarse voltage ranges (A or B) of S2.
- 4 High Temperature Shutdown Light PL2 (Orange LED)
PL2 lights up when unit overheats and shuts down.
- 5 Power Indicator Light PL1 (White LED)
PL1 is lit when power is on.
- 6 Wire Feed Speed (WFS)/Trim (Arc Length) And Line Input Adjustment Control R1
See Section 5-11.
- 7 Digital Display Meter
Displays values and parameters for selected welding processes.
- 8 Setup Button
Use button to select parameters (V, A, %) and the sequencer control.
- 9 Trigger Mode Button
Use control to select desired trigger mode (see Section 5-13).
- 10 Wire Diameter Push Button
Use control to select desired welding wire diameter for synergic MIG process (see Section 5-14).
- 11 Material Button
Use control to select material type for synergic MIG process (see Section 5-15).
- 12 Gas Selection Button
Use control to select desired welding gas type for synergic MIG process (see Section 5-16).
- 13 MIG Torch Connection
Connection for Euro style MIG gun.
- 14 Work Lead Connection

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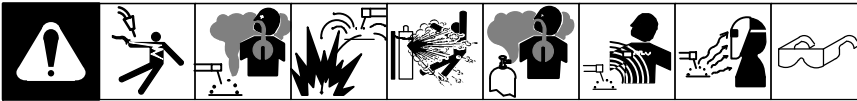
5-9. Controls For MigMatic 380DX



- 1 Power Switch S1
Use switch to turn power on and off.
- 2 Voltage Range Control S2
Allows selection of voltage in three coarse ranges, A, B or C.
- 3 Voltage Adjustment Control S3
This control allows for 10 voltage settings in each of the three coarse voltage ranges (A, B or C) of S2.
- 4 High Temperature Shutdown Light PL2 (Orange LED)
PL2 lights up when unit overheats and shuts down.
- 5 Power Indicator Light PL1 (White LED)
PL1 is lit when power is On.
- 6 Wire Feed Speed (WFS)/Trim (Arc Length) And Line Input Adjustment Control R1
See Section 5-11.
- 7 Digital Display Meter
Displays values and parameters for selected welding processes.
- 8 Setup Button
Use button to select parameters (V, A, %) and the sequencer control.
- 9 Trigger Mode Button
Use control to select desired trigger mode (see Section 5-13).
- 10 Wire Diameter Push Button
Use control to select desired welding wire diameter for synergic MIG process (see Section 5-14).
- 11 Material Button
Use control to select material type for synergic MIG process (see Section 5-15).
- 12 Gas Selection Button
Use control to select desired welding gas type for synergic MIG process (see Section 5-16).
- 13 MIG Torch Connection
Connection for Euro style MIG gun.
- 14 Low Inductance Negative (-) Weld Output Terminal
Connect work lead here for most short arc applications.
- 15 High Inductance Negative (-) Weld Output Terminal
Connect work lead here for stainless steel and spray arc applications.

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5-10. Burnback And Slope UP/DOWN Timer Controls (DX Models Only)

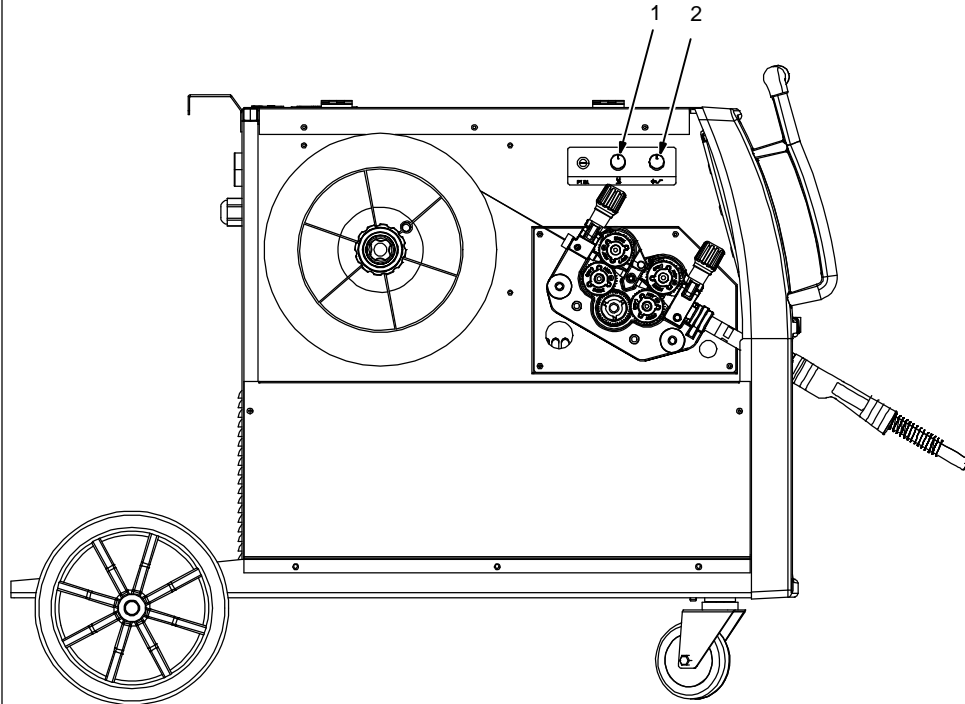


1 Burnback Control R3

Use control to set time welding wire stays energized after trigger is released.

2 Wire Run-In Speed Control R2

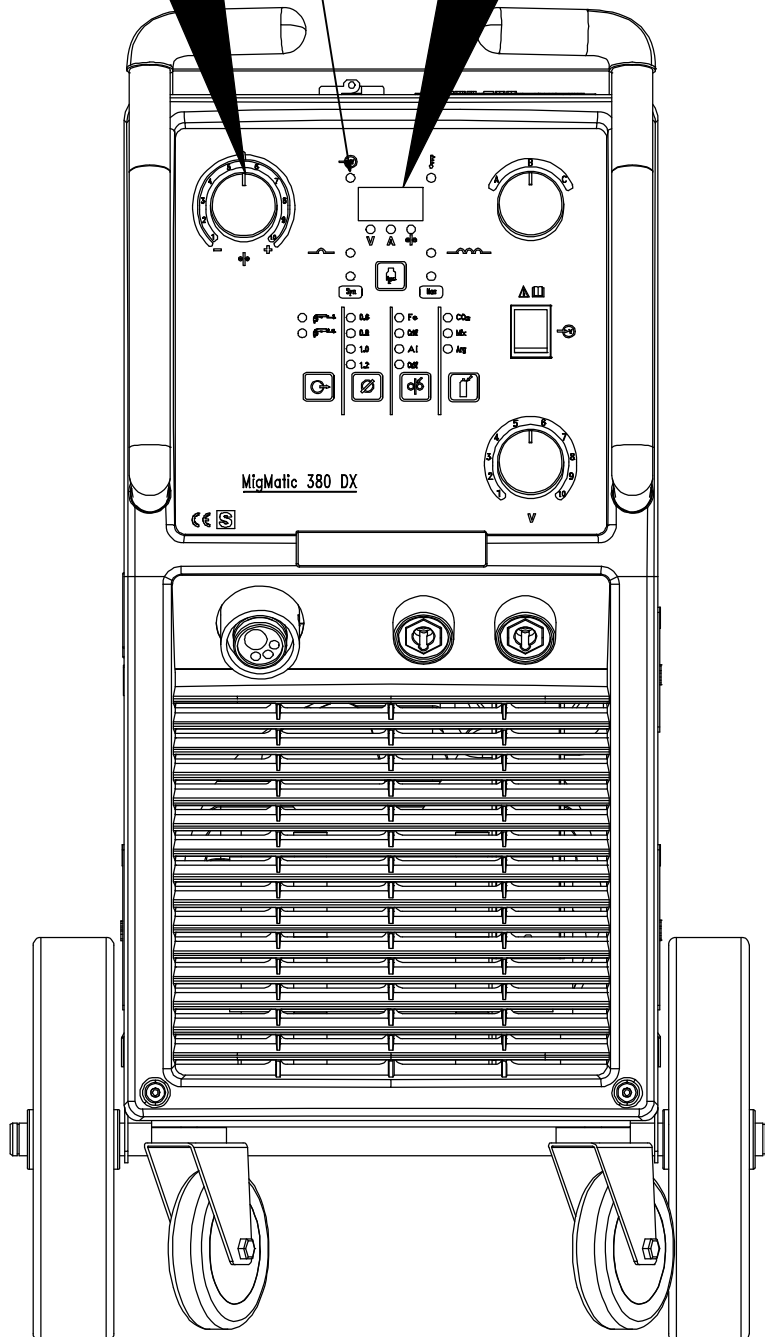
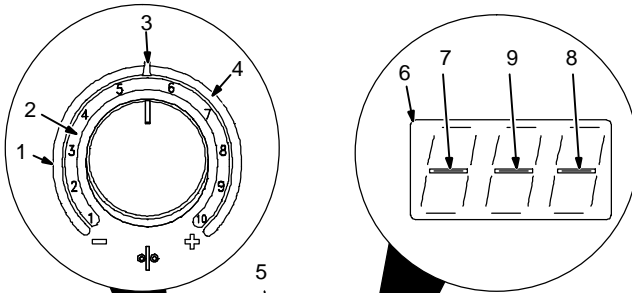
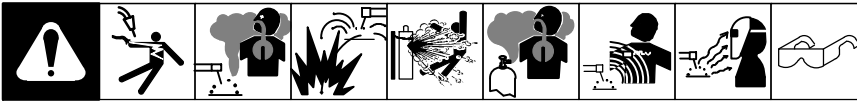
Use control to determine rate at which welding wire feeds before an arc is initiated.



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Notes

5-11. Welding Power Source Input Line Voltage Adjustment (DX Models Only)



- 1 Wire Feed Speed (WFS)/Trim (Arc Length) And Line Input Adjustment Control R1
- 2 Wire Feed Speed Indicator Scale (Manual Mode)
- 3 Input Line Voltage Adjustment Center Indicator (Synergic Mode)
- 4 Input Line Voltage/Wire Speed Adjustment Indicator Scale (Synergic Mode)

Before power up, turn control R1 to the center position.

Within 5 seconds of power up, unit verifies value of input line voltage, and if necessary, makes correction based on a percentage of preset (synergic) parameters.

- 5 Power Indicator Light PL1
- 6 Digital Meter Display

The required type of input voltage correction (plus or minus) is displayed on the digital meter as follows:

- 7 Negative Percentage Input Line Voltage Adjustment Display Indicator

A dash in the left segment of the meter and a flashing PL1 indicates the need for a negative correction. Turn R1 counterclockwise to decrease value.

- 8 Positive Percentage Input Line Voltage Adjustment Display Indicator

A dash in the right segment of the meter and a flashing PL1 indicates the need for a positive correction. Turn R1 clockwise to increase value.

- 9 Correct Input Line Voltage Display Indicator

A dash in the center segment of the meter indicates the input voltage is correct.

Input line voltage compensations are made each time the unit is turned on.

⚠ *Fluctuations in input line voltage that occur more than five seconds after power up are not automatically compensated for correction. The operator must manually adjust for incorrect input line voltage by rotating control R1.*

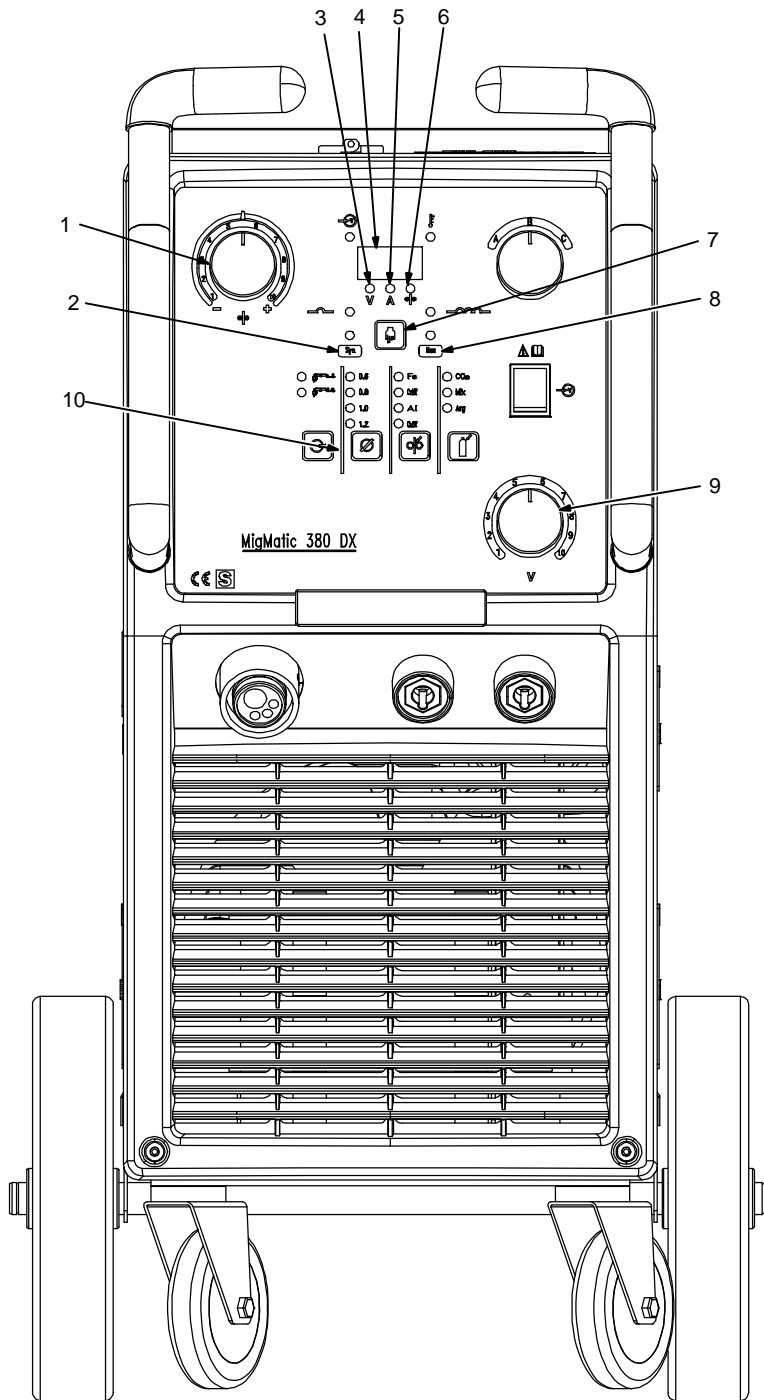
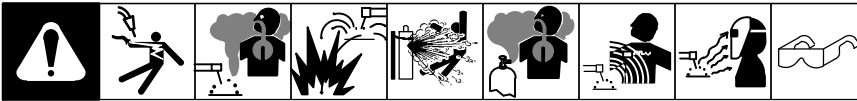
Correct adjustment is confirmed by a beeping or buzzer signal, while a flashing power indicator light PL1 indicates an incorrect input line voltage

⚠ *While PL1 is flashing, the machine will continue to operate, but weld output characteristics may be affected.*

After correct input line voltage has been established, 300 or 380 (depending on model) is displayed on the meter.

⚠ *Each time the machine is turned on, the last setting is displayed.*

5-12. Welding Power Source Setup Menu (DX Models Only)




- 1 Wire Feed Speed (WFS)/Trim (Arc Length) And Line Input Adjustment Control R1
- 2 Synergic Mode Indicator
- 3 Voltage LED
- 4 Digital Display Meter
- 5 Amperage LED
- 6 Wire Feed Speed LED
- 7 Setup Button
- 8 Manual Mode Indicator
- 9 Voltage Control
- 10 Trigger Mode Button

Use setup button to select desired parameter: voltage, amperage, or preset wire feed speed and light up the corresponding LED (V, A, or %).

Rotate Wire Feed Speed (WFS/Trim (Arc Length) And line Input Adjustment Control to change wire feed speed or amperage, depending upon which parameter is active.

Rotate voltage control to change voltage when voltage LED is lit.

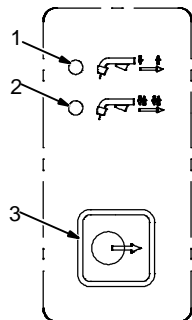
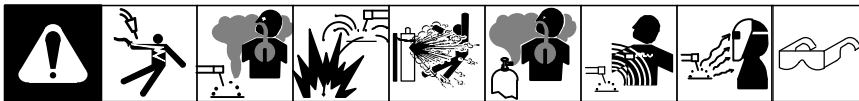
The value of the selected parameter is displayed on display meter.

 The default for preset wire feed speed is meters per minute. To change to inches per minute, press and hold setup and trigger function buttons for approximately 5 seconds.

Selecting Manual Or Synergic Mode

Press and hold setup button for approximately 3 seconds to switch between manual mode (see Section 5-16) and synergic mode (see Section 5-17), and light up the corresponding mode indicator LED.

5-13. Trigger Mode Selection (DX Models Only)



Always select a trigger mode.

1 2-t Trigger Mode

When trigger is pressed welding starts. When trigger is released, welding stops.

2 4-t Trigger Mode

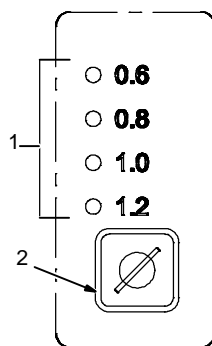
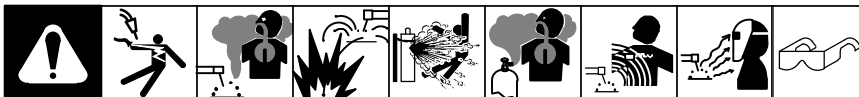
When trigger is pressed, welding starts. When trigger is released, welding continues. When trigger is pressed and released a second time, welding stops.

3 Trigger Mode Selection Button

Press button to select desired trigger mode and lite corresponding LED.

2-t and 4-t trigger methods work in both manual and synergic modes.

5-14. Welding Wire Diameter Selection For Synergic MIG (DX Models Only)

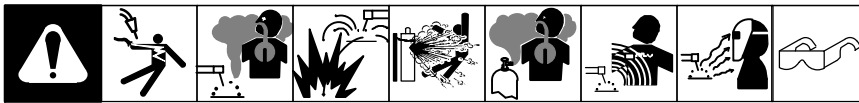


1 Welding Wire Diameters

2 Welding Wire Diameter Button

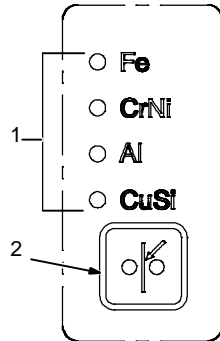
Press button to select desired wire diameter: 0.6 mm, 0.8 mm, 1.0 mm, or 1.2 mm, and lite corresponding LED.

5-15. Welding Wire Type Selection For Synergic MIG (DX Models Only)

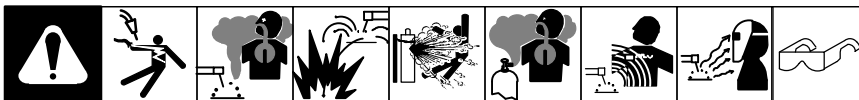


- 1 Welding Wire Types
- 2 Welding Wire Type Button

Press button to select desired wire type: Fe (ferris), CrNi (stainless steel), Al (aluminum), or CuSi (Copper Silicon), and lite corresponding LED.

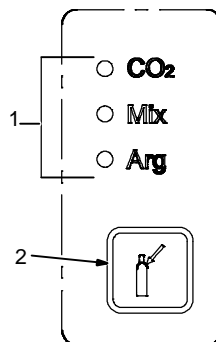


5-16. Gas Selection For Synergic MIG (DX Models Only)

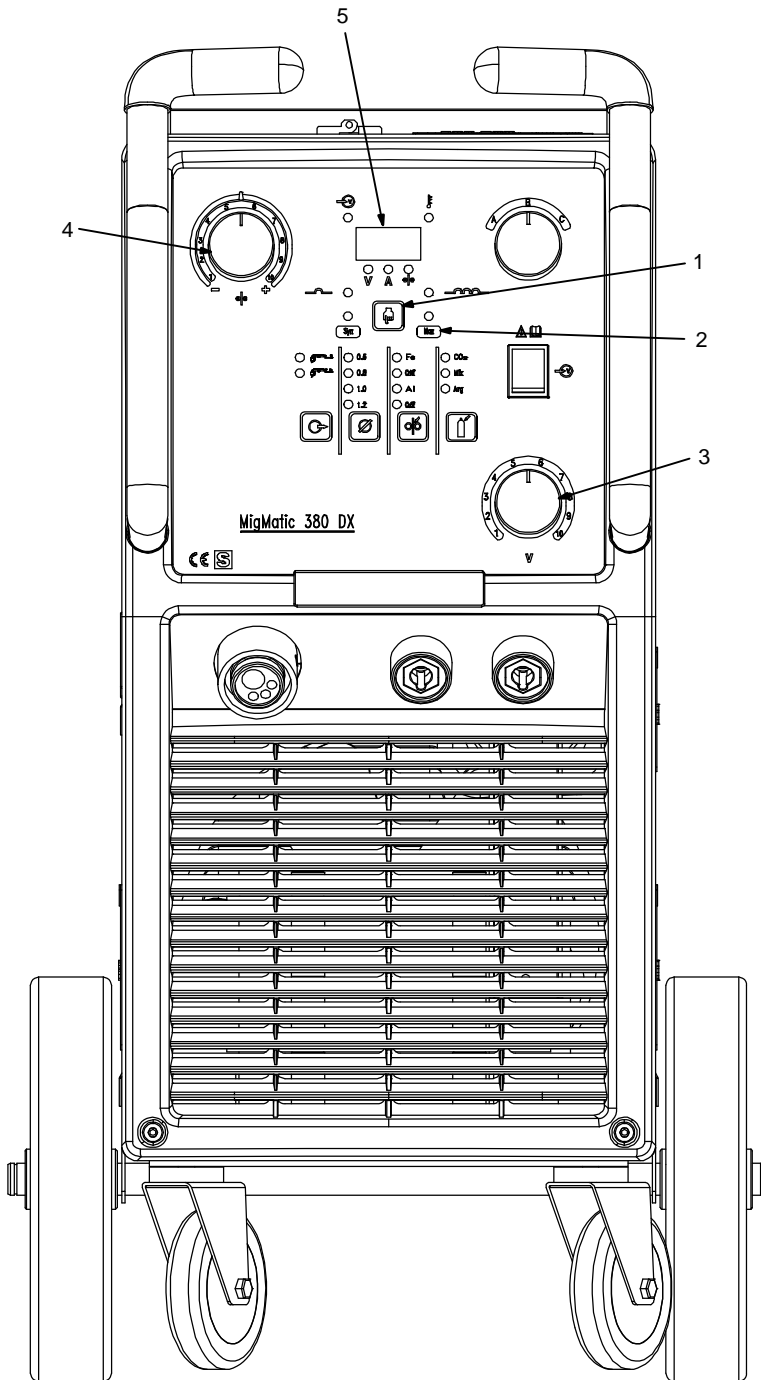
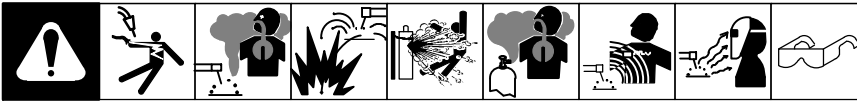


- 1 Shielding Gas Types
- 2 Gas Selection Button

Press button to select desired shielding gas type: CO₂ (Carbon Dioxide), Mix (ArCO₂), Arg (Argon), and lite corresponding LED.



5-17. Selecting Manual MIG Welding (DX Models Only)



- 1 Setup Button
- 2 Manual MIG Mode Indicator
- 3 Voltage Control S2
- 4 Wire Feed Speed (WFS)/Trim (Arc Length) And Line Input Adjustment Control R1
- 5 Digital Display Meter

In Manual MIG mode, the operator may need to adjust main welding parameters for specific arc characteristics.

Use setup button to select desired parameter: voltage, amperage, or preset wire feed speed and light up the corresponding LED (V, A, or %).

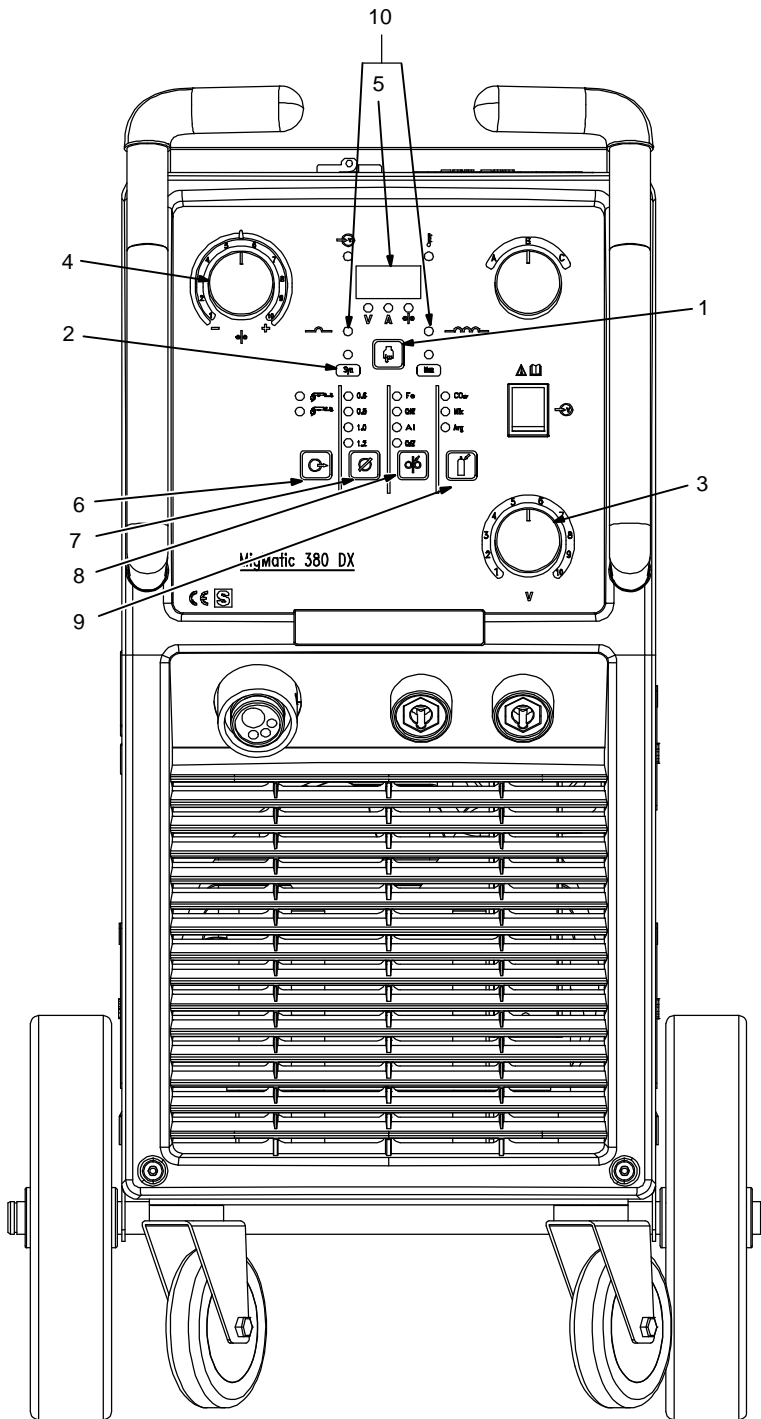
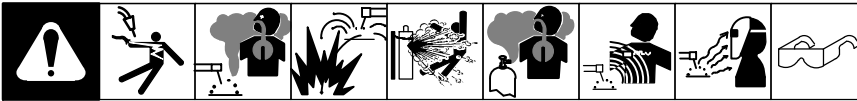
The value of the selected parameter is displayed on the meter.

Turn voltage control clockwise to increase voltage.

Turn wire feed speed control clockwise to increase wire feed speed.

Select trigger mode 2-t or 4-t according to Section 5-13.

5-18. Selecting Synergic MIG Welding (DX Models Only)



- 1 Setup Button
- 2 Synergic MIG Mode Indicator
- 3 Voltage Control S2
- 4 Wire Feed Speed (WFS/Trim (Arc Length) And Line Input Adjustment Control R1
- 5 Digital Display Meter

☞ In synergic MIG mode, the operator may have to adjust welding data for specific arc characteristics. Generally, voltage is adjusted and the synergic process automatically sets appropriate wire feed speed.

Use setup button to select desired parameter: voltage, amperage, or preset wire feed speed and light up the corresponding LED (V, A, or %).

The value of the selected parameter is displayed on the meter.

Turn voltage control S2 clockwise to increase voltage.

Turn wire feed speed control R1 clockwise to increase wire feed speed.

- 6 Trigger Mode Button

Use button to select 2-t or 4-t (see Section 5-13).

- 7 Wire Diameter Button

Use button to select appropriate welding wire type (see Section 5-14).

- 8 Welding Wire Type Button

Use button to select appropriate welding wire type (see Section 5-15).

- 9 Gas Selection Button

Use button to select desired shielding gas (see Section 5-16).

- 10 High/Low Inductance LEDs (380 DX Model Only)

While in the synergic mode, corresponding LED light indicates the proper weld output negative inductance, higher or lower to use. See Section 5-8 and 5-9 for work lead connection.

☞ Operator can choose a different weld output negative inductance from the one suggested, but it doesn't guarantee good weld performances.

SECTION 6 – MAINTENANCE & TROUBLESHOOTING

6-1. Routine Maintenance

| | | | | | | |
|--|-----------------|---|--|---|--|--|
| | | | | ⚠ Disconnect power before maintaining. | | <i>Maintain more often during severe conditions.</i> |
| | 3 Months | <p>Replace unreadable labels</p> | | <p>Repair or replace cracked weld cable</p> | | |
| | | <p>Clean and tighten weld terminals</p> | | | | |
| | 6 Months | <p>Blow out or vacuum inside.</p> | | <p>Remove drive roll and carrier. Apply light coat of oil or grease to drive motor shaft.</p> | | |

6-2. Welding Gun And Wire Drive Assembly

| | | | | | |
|--|--|--|--|--|---|
| | | | | | <p>1 Welding Gun Check gun liner for blockage or kinks.</p> <p>2 Wire Drive Assembly Check for jammed wire, binding drive gear or misaligned drive rolls. Allow cooling period and reset breaker. Close door.</p> |
| | | | | | |

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6-3. Unit Overload

Thermal switches TP4 in SR1 and TP5 in XFMR protect the unit from damage due to overheating. If the thermal indicator illuminates, wait for unit to cool allowing fan motor to run before trying to weld. If unit is cool and no weld output continues, contact Factory Authorized Service Agent.


6-4. Troubleshooting



| Trouble | Remedy |
|-------------------------------------|---|
| No weld output; wire does not feed. | Be sure line disconnect switch is On (see Section 4-5). |
| | Replace building line fuse or reset circuit breaker if open (see Section 4-5). |
| | Secure gun trigger connections. |
| | Check continuity of power switch S1 and replace if necessary. |
| | Have Factory Authorized Service Agent check main transformer T1 for signs of winding failure. Check continuity across windings and check for proper connections. Check secondary voltages. Replace T1 if necessary. |
| | Have Factory Authorized Service Agent check continuity of thermostats TP4 and TP5. Replace TP4 and TP5 if necessary. |
| | Have Factory Authorized Service Agent check main control board PC1 and connections, and replace if necessary. |
| No weld output; wire feeds. | Connect work clamp to get good metal to metal contact. |
| | Replace contact tip (see gun Owner's Manual). |
| | An overload condition occurred (see Section 6-3) |
| | Have Factory Authorized Service Agent check diodes in main rectifier SR1, and replace if necessary. |
| | Have Factory Authorized Service Agent check stabilizer Z1 for signs of winding failure. Check continuity across windings and check connections. Replace Z1 if necessary. |
| | Have Factory Authorized Service Agent check main transformer T1 for signs of winding failure. Check continuity across windings and check connections. Check secondary voltages. Replace T1 if necessary. |
| | Have Factory Authorized Service Agent check voltage switch(s). Replace if necessary. |
| Low weld output. | Connect unit to proper input voltage or check for low line voltage (see Section 4-3). |
| | Check input voltage jumper links and correct position if necessary (see Section 4-3). |
| | Have Factory Authorized Service Agent check main rectifier SR1, and replace if necessary. |
| | Have Factory Authorized Service Agent check voltage switch(s). Replace if necessary. |
| | Adjust input line voltage (see Section 5-11). |
| Low, high, or erratic wire speed. | Readjust front panel settings (see Section 5). |
| | Change to correct size drive rolls (see Section 4-6). |
| | Readjust drive roll pressure (see Section 4-8). |
| | Replace inlet guide, contact tip, and/or liner if necessary. |
| | Check position of input jumper links (see Section 4-3). |
| | Have Factory Authorized Service Agent check Wire Speed control R1, and replace if necessary. |
| | Have Factory Authorized Service Agent check diodes in main rectifier SR1, and replace if necessary. |
| | Have Factory Authorized Service Agent check main control board PC1 and connections and replace if necessary. |
| No wire feed. | Reset circuit breaker CB1 (see Section 6-2). |
| | Rotate Wire Speed control R1 to higher setting (see Sections 5-1, 5-2, 5-8 or 5-9). |
| | Clear obstruction in gun contact tip or liner (see gun Owner's Manual). |

SECTION 7 – ELECTRICAL DIAGRAMS

WARNING



ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.

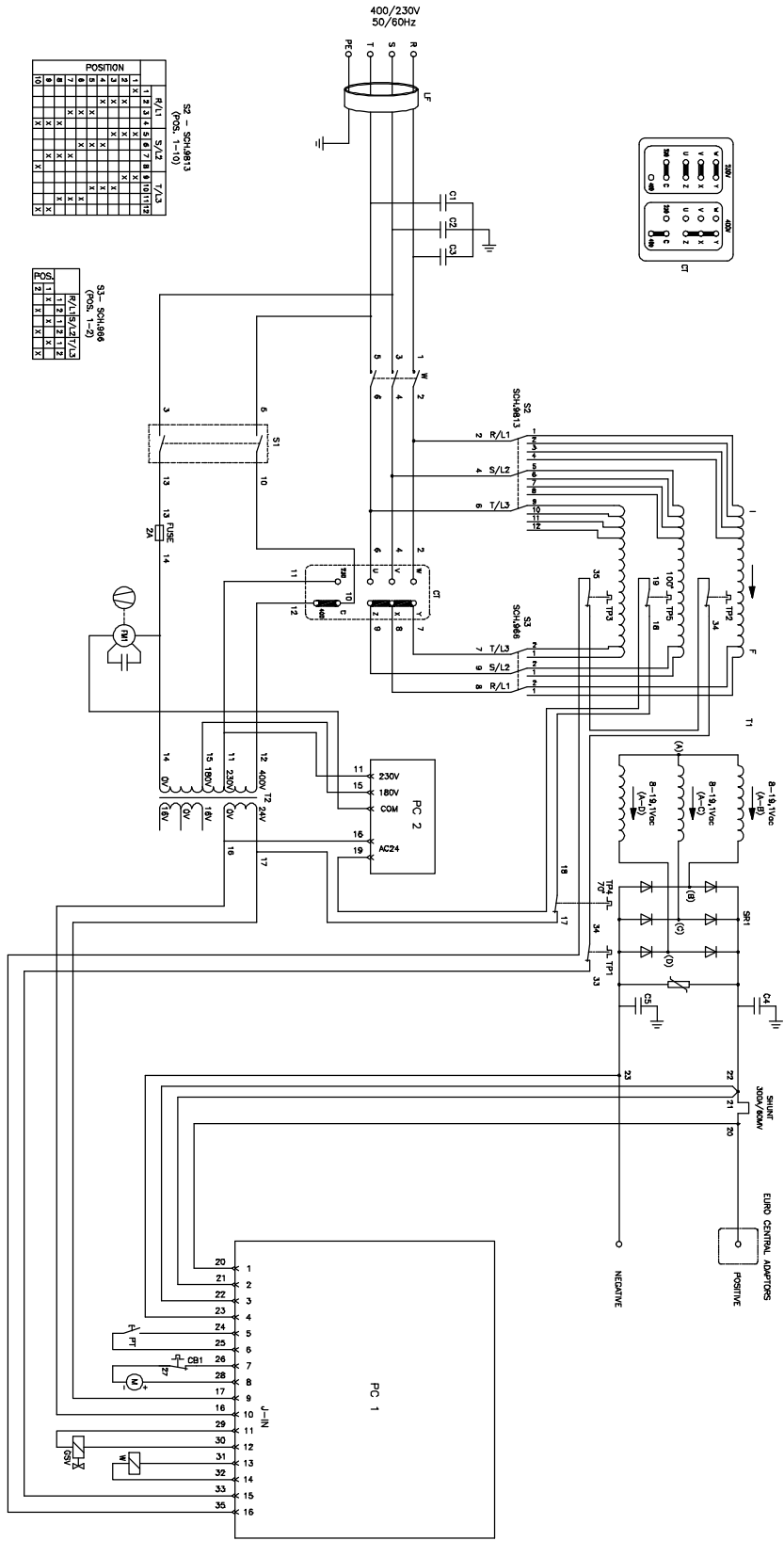



Figure 7-1. Circuit Diagram for Migmatic 300 (230/400 VAC)

WARNING



ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.

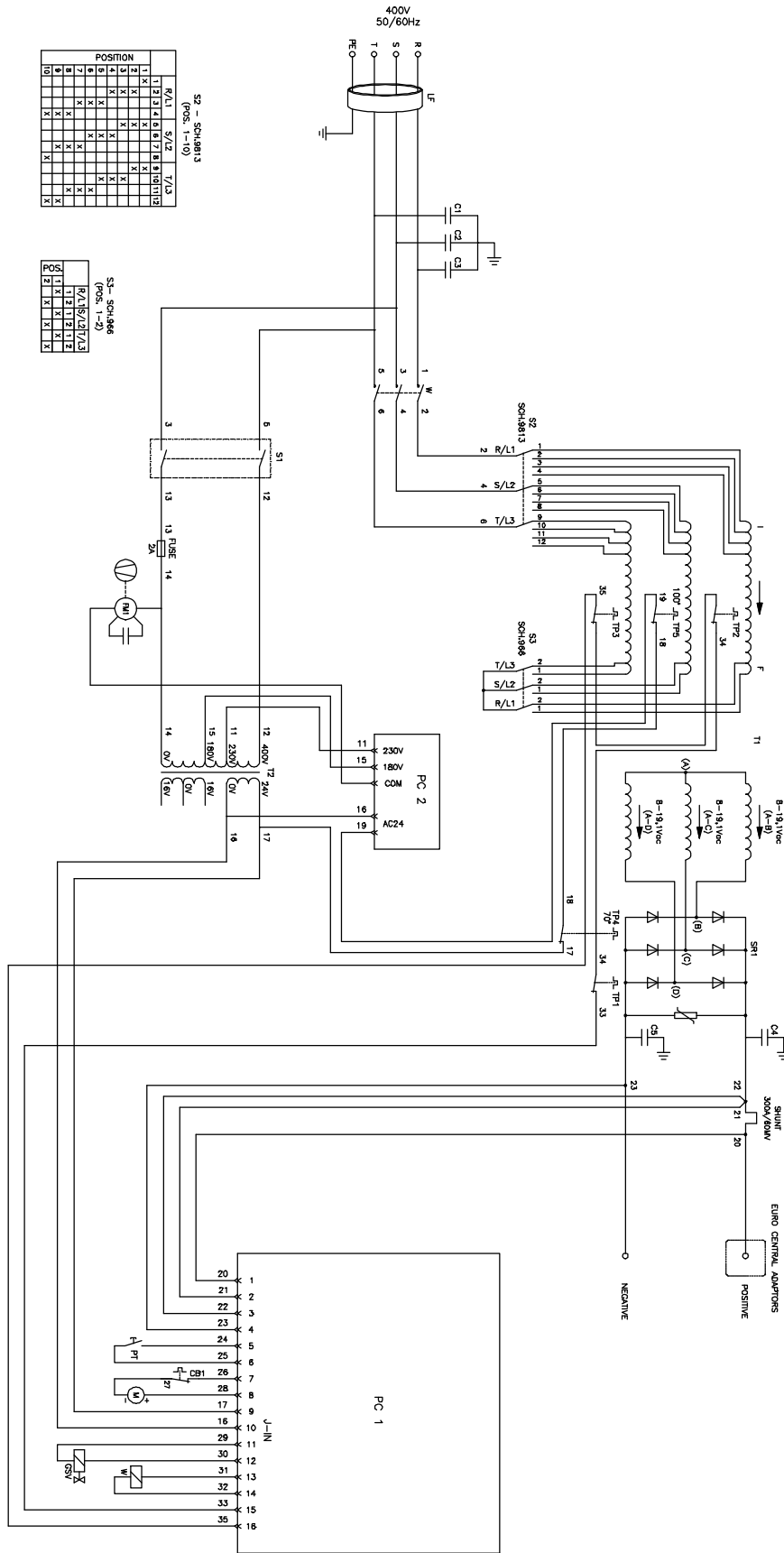


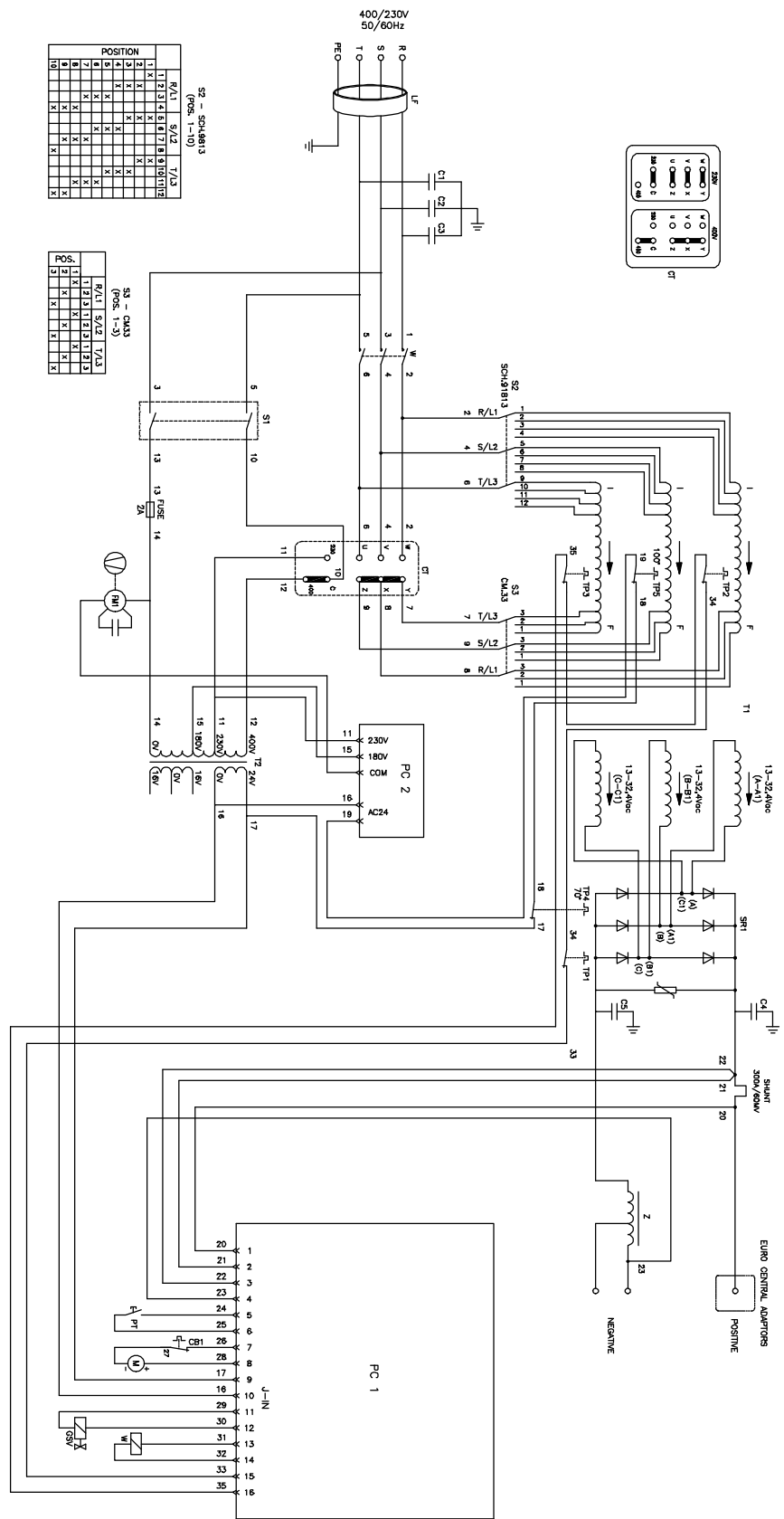
Figure 7-2. Circuit Diagram for Migmatic 300 (400 VAC)



WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical ports.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



S2 - SCHUBS
(Pos. 1-10)

| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------|---|---|---|---|---|---|---|---|---|----|
| R/L1 | X | X | X | X | X | X | X | X | X | X |
| S/12 | X | X | X | X | X | X | X | X | X | X |
| T/L3 | X | X | X | X | X | X | X | X | X | X |

S3 - CMA3
(Pos. 1-3)

| POS. | 1 | 2 | 3 |
|------|---|---|---|
| R/L1 | X | X | X |
| S/12 | X | X | X |
| T/L3 | X | X | X |

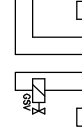
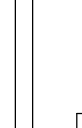
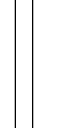
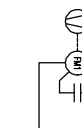


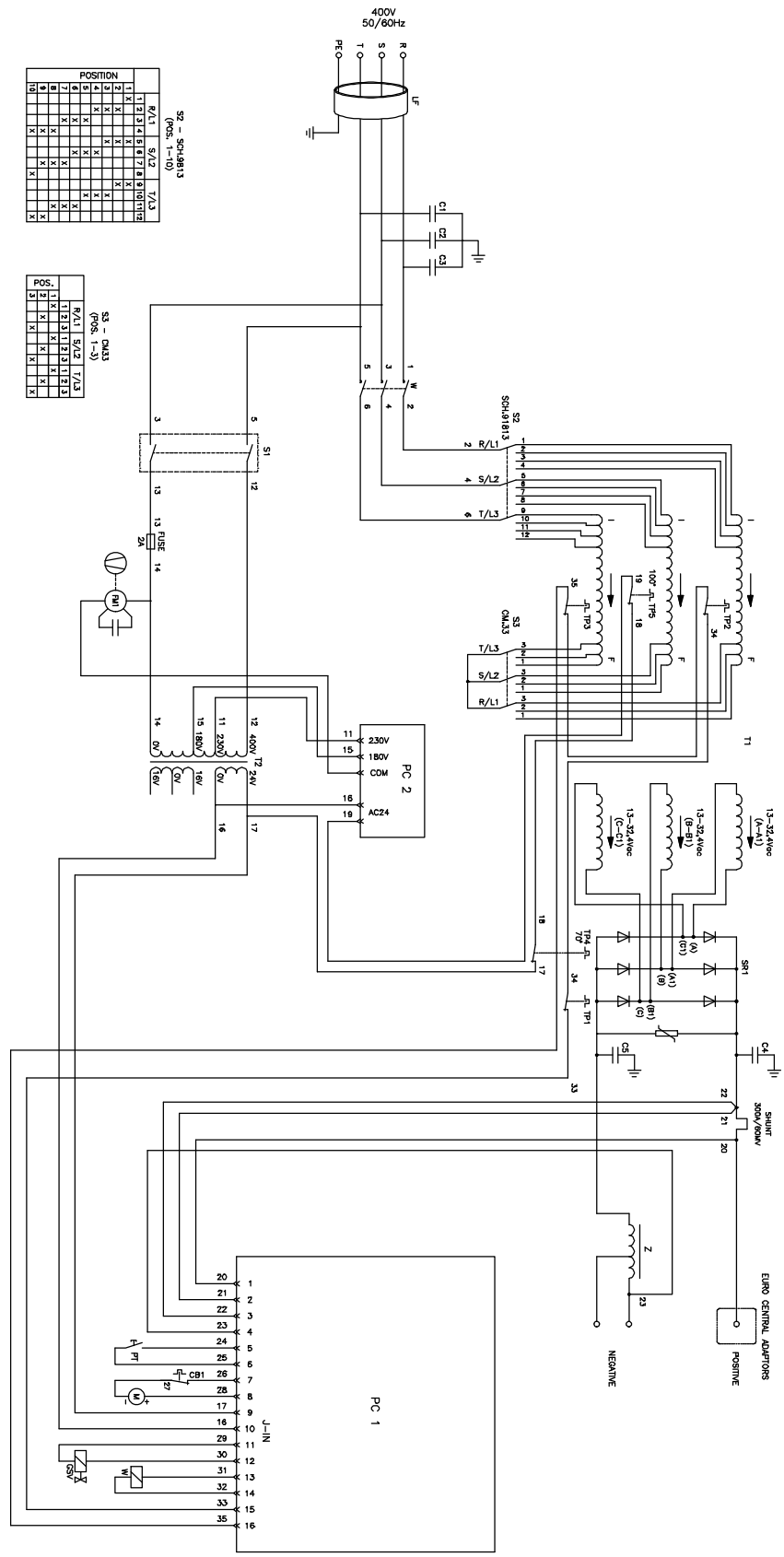
Figure 7-3. Circuit Diagram for Migmatic 380 (230/400 VAC)



WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



SR - SOLENOID
(Pos. 1-10)

| | R/L1 | S/L2 | T/L3 |
|----|------|------|------|
| 1 | X | X | X |
| 2 | X | X | X |
| 3 | X | X | X |
| 4 | X | X | X |
| 5 | X | X | X |
| 6 | X | X | X |
| 7 | X | X | X |
| 8 | X | X | X |
| 9 | X | X | X |
| 10 | X | X | X |

SR - SOLENOID
(Pos. 1-3)

| | R/L1 | S/L2 | T/L3 |
|---|------|------|------|
| 1 | X | X | X |
| 2 | X | X | X |
| 3 | X | X | X |

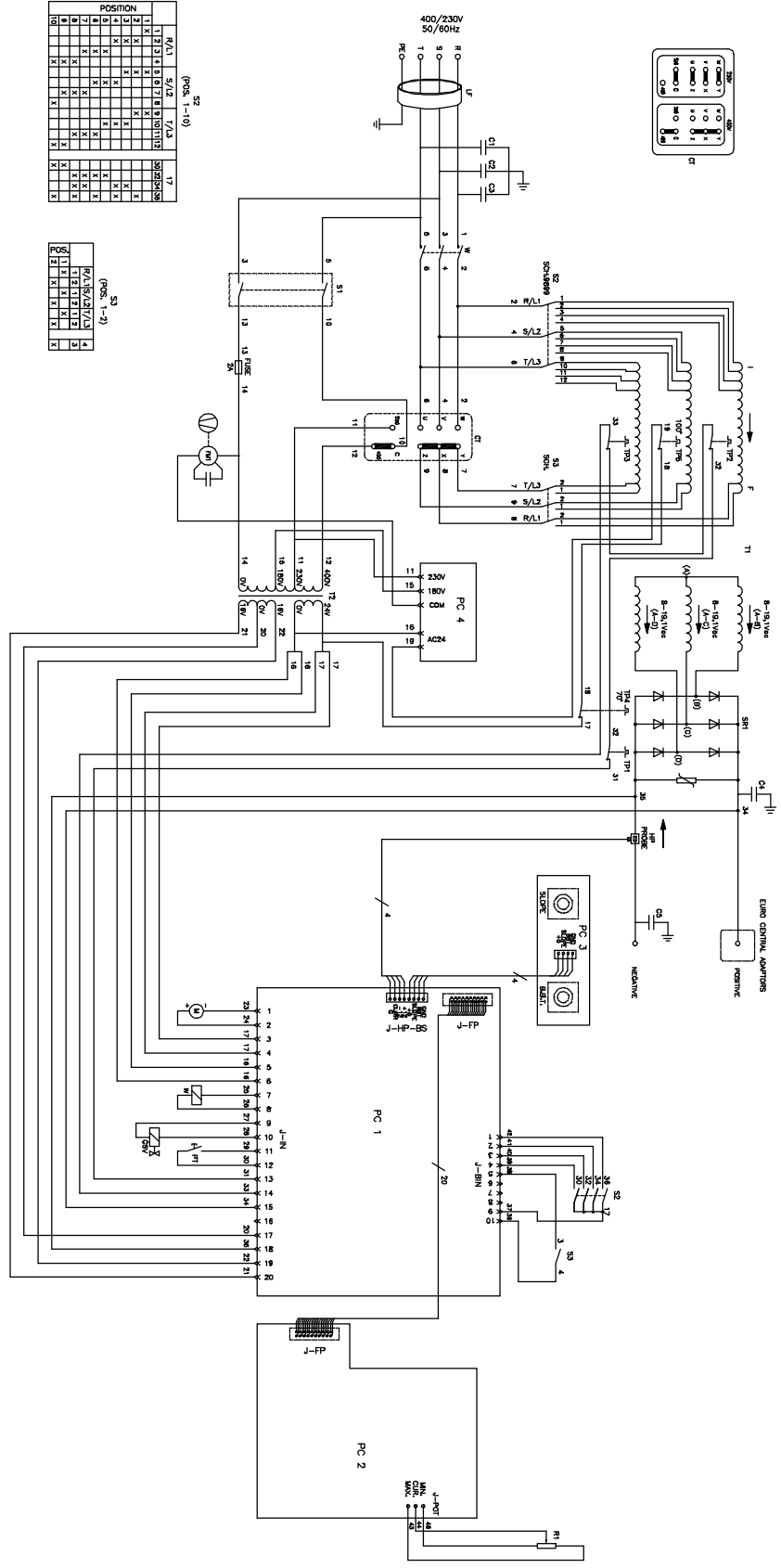
Figure 7-4. Circuit Diagram for Migmatic 380 (400 VAC)



WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



(FIG. 1-10)

| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|
| A/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| B/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| C/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| D/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| E/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

(FIG. 1-3)

| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|
| A/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| B/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| C/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| D/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| E/L | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

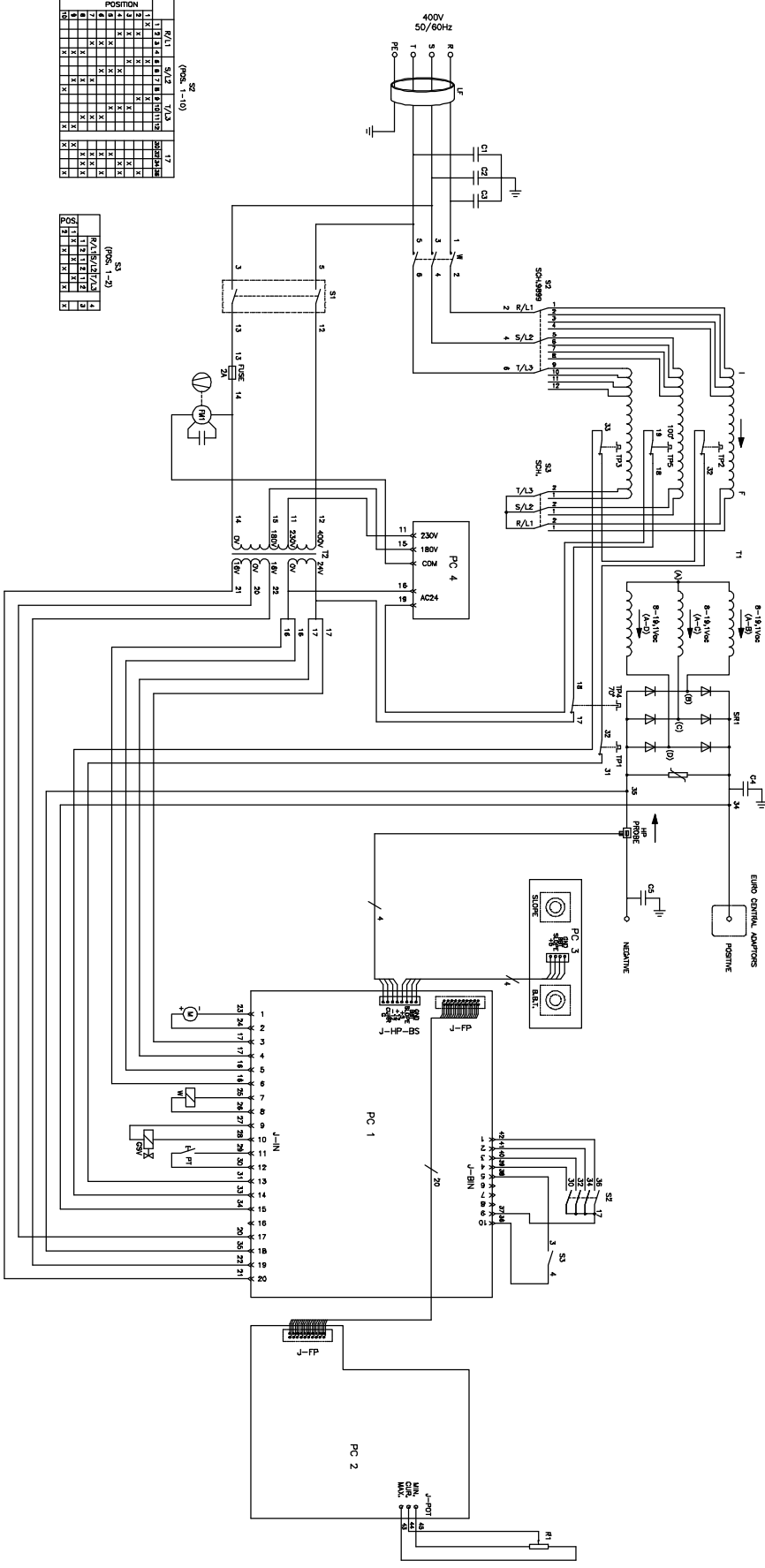
Figure 7-5. Circuit Diagram for Migmatic 300 DX (230/400 VAC)



WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



52
(POS. 1-10)

| POSITION | R/L1 | S/L2 | V/L3 | 17 |
|----------|------|------|------|----|
| 1 | X | X | X | X |
| 2 | X | X | X | X |
| 3 | X | X | X | X |
| 4 | X | X | X | X |
| 5 | X | X | X | X |
| 6 | X | X | X | X |
| 7 | X | X | X | X |
| 8 | X | X | X | X |
| 9 | X | X | X | X |
| 10 | X | X | X | X |
| 11 | X | X | X | X |
| 12 | X | X | X | X |
| 13 | X | X | X | X |
| 14 | X | X | X | X |
| 15 | X | X | X | X |
| 16 | X | X | X | X |
| 17 | X | X | X | X |

53
(POS. 1-2)

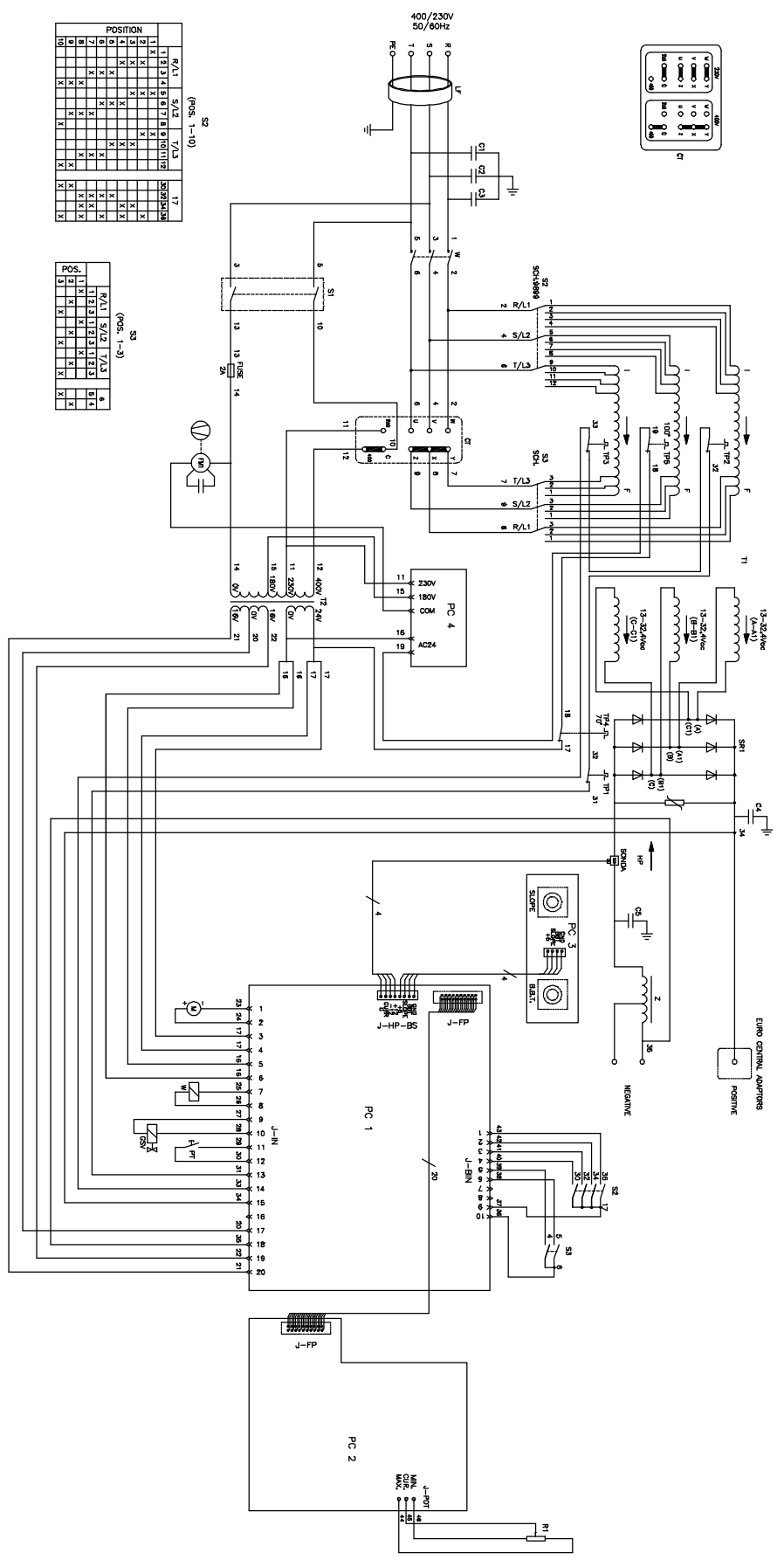
| POSITION | R/L1 | S/L2 | V/L3 | 17 |
|----------|------|------|------|----|
| 1 | X | X | X | X |
| 2 | X | X | X | X |

Figure 7-6. Circuit Diagram for Migmatic 300 DX (400 VAC)



WARNING
ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



POSITION (POS. 1-10)

| | R/L1 | S/L2 | T/L3 | 17 |
|----|------|------|------|----|
| 1 | X | X | X | X |
| 2 | X | X | X | X |
| 3 | X | X | X | X |
| 4 | X | X | X | X |
| 5 | X | X | X | X |
| 6 | X | X | X | X |
| 7 | X | X | X | X |
| 8 | X | X | X | X |
| 9 | X | X | X | X |
| 10 | X | X | X | X |
| 11 | X | X | X | X |
| 12 | X | X | X | X |
| 13 | X | X | X | X |
| 14 | X | X | X | X |
| 15 | X | X | X | X |
| 16 | X | X | X | X |
| 17 | X | X | X | X |

POS. (POS. 1-3)

| | R/L1 | S/L2 | T/L3 | 8 |
|---|------|------|------|---|
| 1 | X | X | X | X |
| 2 | X | X | X | X |
| 3 | X | X | X | X |

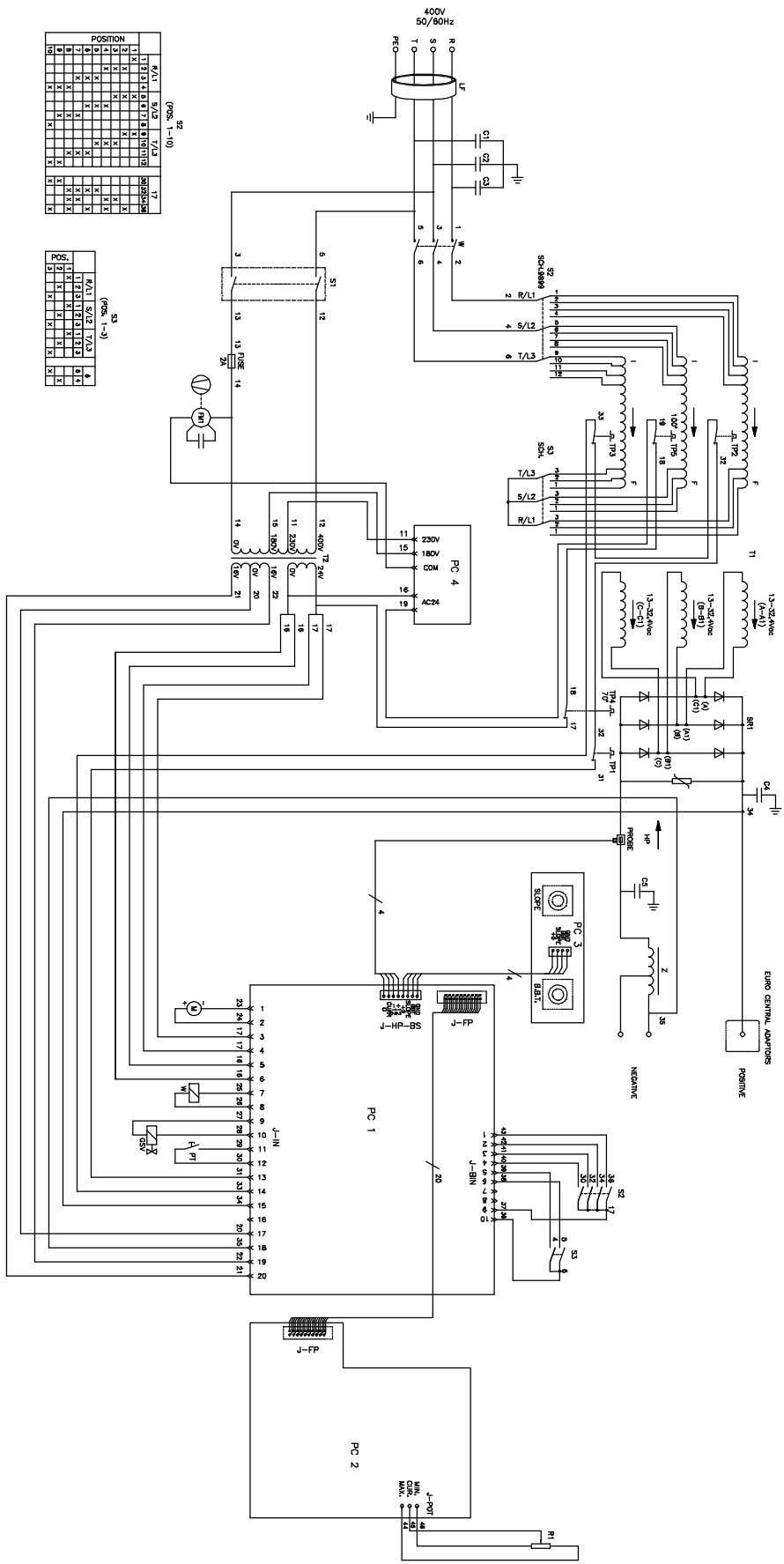
Figure 7-7. Circuit Diagram for Migmatic 380 DX (230/400 VAC)



WARNING

ELECTRIC SHOCK HAZARD

- Do not touch live electrical parts.
- Disconnect input power or stop engine before servicing.
- Do not operate with covers removed.
- Have only qualified persons install, use, or service this unit.



(PAGE 1-10)

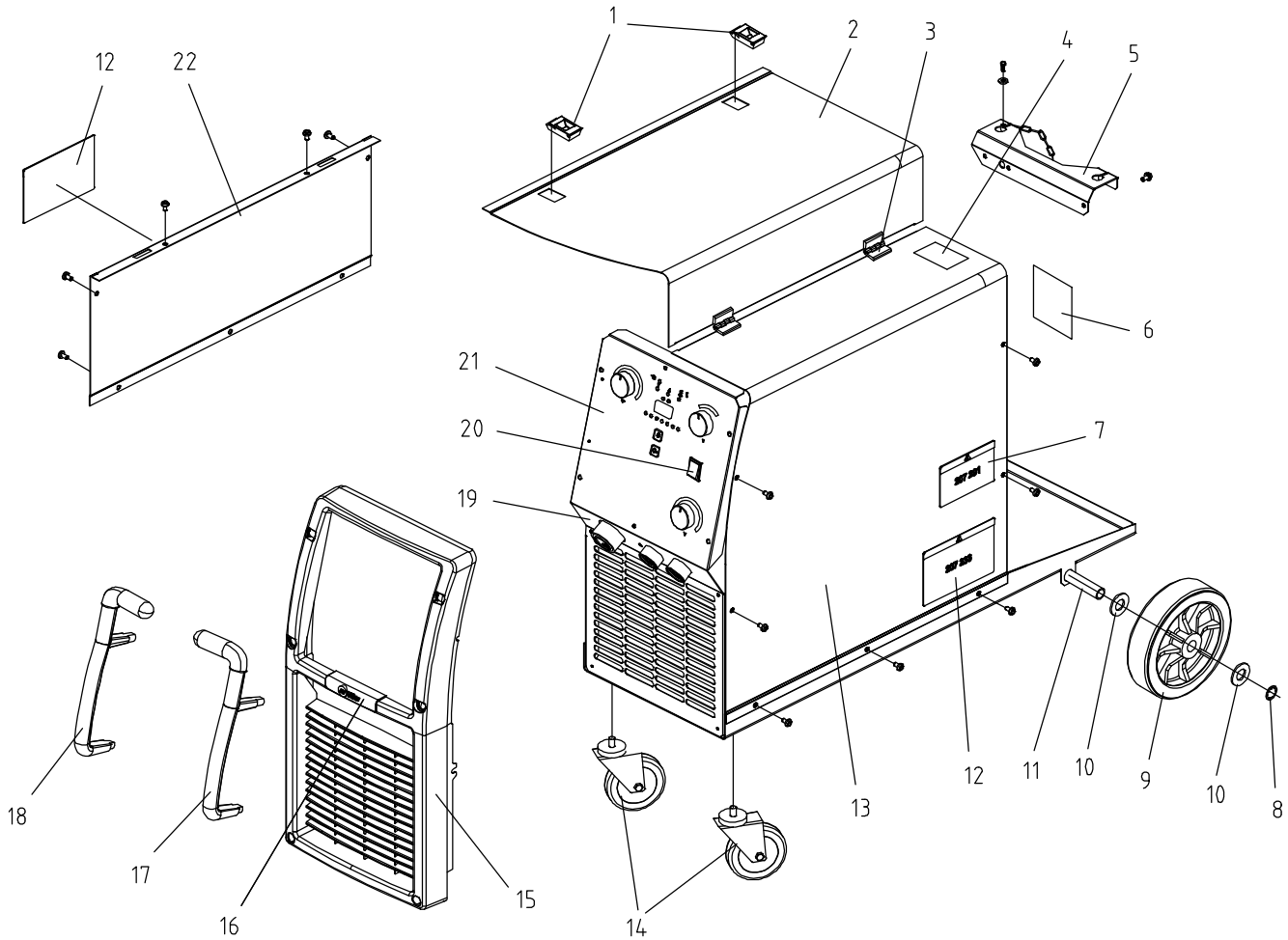
| POSITION | R/L1 | S/L2 | T/L3 | 1-3-22 | 100 | 18 |
|----------|------|------|------|--------|-----|----|
| 1 | X | X | X | X | X | X |
| 2 | X | X | X | X | X | X |
| 3 | X | X | X | X | X | X |
| 4 | X | X | X | X | X | X |
| 5 | X | X | X | X | X | X |
| 6 | X | X | X | X | X | X |
| 7 | X | X | X | X | X | X |
| 8 | X | X | X | X | X | X |
| 9 | X | X | X | X | X | X |
| 10 | X | X | X | X | X | X |

(PAGE 1-9)

| POS. | R/L1 | S/L2 | T/L3 | 1-3-22 | 100 | 18 |
|------|------|------|------|--------|-----|----|
| 1 | X | X | X | X | X | X |
| 2 | X | X | X | X | X | X |
| 3 | X | X | X | X | X | X |
| 4 | X | X | X | X | X | X |
| 5 | X | X | X | X | X | X |
| 6 | X | X | X | X | X | X |
| 7 | X | X | X | X | X | X |
| 8 | X | X | X | X | X | X |
| 9 | X | X | X | X | X | X |
| 10 | X | X | X | X | X | X |

Figure 7-8. Circuit Diagram for Migmatic 380 DX (400 VAC)

SECTION 8 – PARTS LIST



956142845_11_14_A

Figure 8-1. Wrapper Assembly, MigMatic 300/380

| Item No. | Part No. | Description | Quantity | |
|---|-----------|--------------------------------------|-----------|-----------|
| | | | Model 300 | Model 380 |
| Figure 8-1. Wrapper Assembly, MigMatic 300/380 | | | | |
| 1 | 156034005 | Latch, Side Panel | 2 | 2 |
| 2 | 156007043 | Side Panel, Hinged | 1 | 1 |
| 3 | 156034007 | Hinge | 2 | 2 |
| 4 | 000207235 | Label, Warning, Tilt | 1 | 1 |
| 5 | 156005156 | Cylinder Rack, Upper Support | 1 | 1 |
| 6 | 956142856 | Rating Plate, MigMatic 300 V.400 | 1 | |
| 6 | 956142862 | Rating Plate, MigMatic 300 V.230/400 | 1 | |
| 6 | 956142858 | Rating Plate, MigMatic 380 V.400 | | 1 |
| 6 | 956142860 | Rating Plate, MigMatic 380 V.230/400 | | 1 |
| 7 | 000207291 | Label, Primary Power Connections | 1 | 1 |
| 8 | 156023157 | Wheel, Retaining Clip | 2 | 2 |
| 9 | 056054085 | Wheel, D.250, Hole D.20 | 2 | 2 |
| 10 | 156009132 | Washer | 4 | 4 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

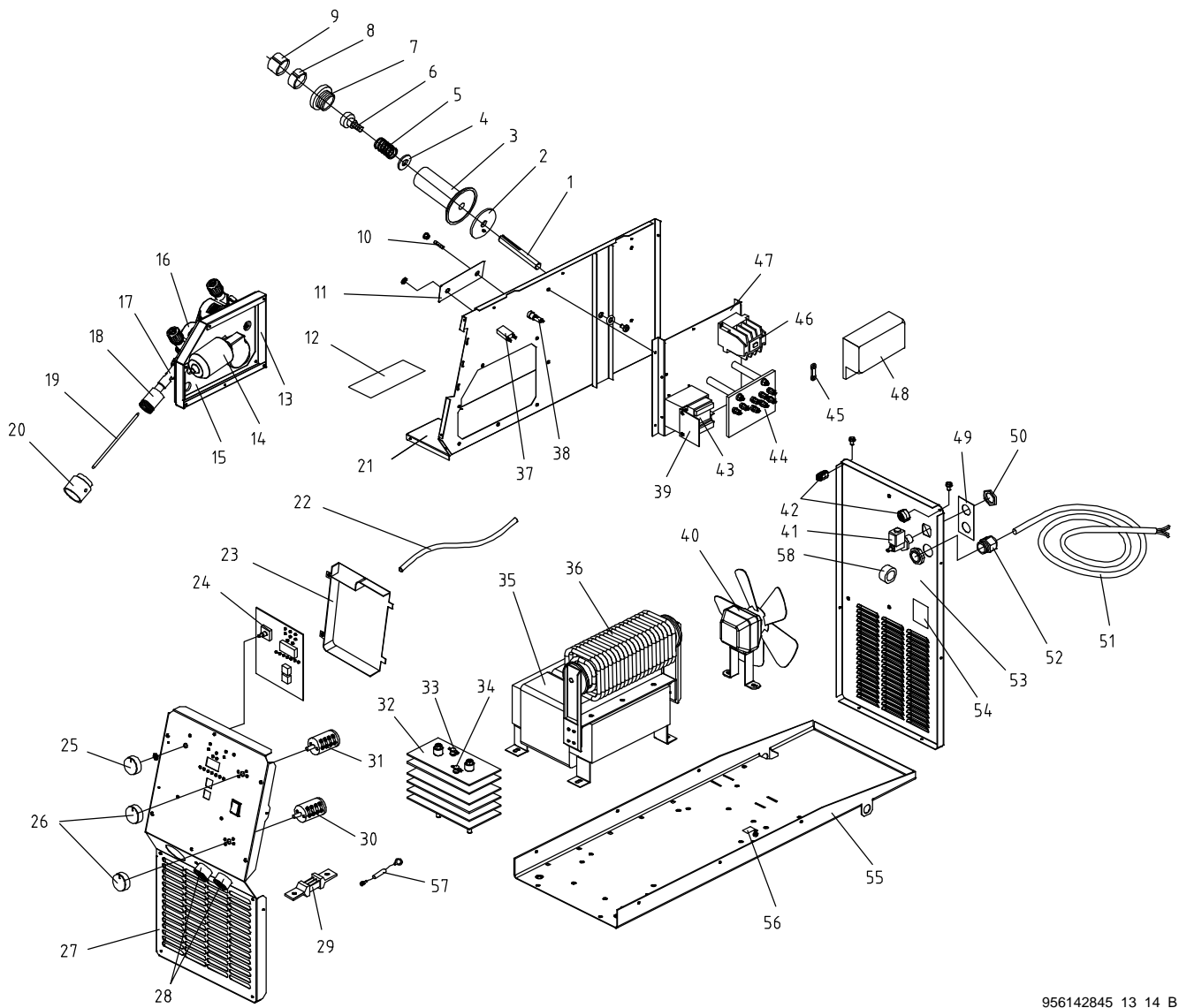
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

| Item No. | Part No. | Description | Quantity | |
|---|------------|---|----------|-----|
| | | | 300 | 380 |
| Figure 8-1. Wrapper Assembly, MigMatic 300/380 | | | 300 | 380 |
| ... 11 | 156012152 | .. Axle, Wheel Rear D.20 L.471 | 1 | 1 |
| ... 12 | 000207233 | .. Label, General Precautionary | 2 | 2 |
| ... 13 | +156122087 | .. Cover, Right Side | 1 | 1 |
| ... 14 | 056054058 | .. Wheel, Caster D.100, M.12 | 2 | 2 |
| ... 15 | 229616 | .. Bezel, Front | 1 | 1 |
| ... 16 | 656088002 | .. Cover, Plastic | 1 | 1 |
| ... 17 | 231553 | .. Handle, RH | 1 | 1 |
| ... 18 | 231554 | .. Handle, LH | 1 | 1 |
| ... 19 | 356029242 | .. Nameplate, Front, Lower MigMatic 300/300DX | 1 | 1 |
| ... 19 | 356029243 | .. Nameplate, Front, Lower MigMatic 380/380DX | 1 | 1 |
| ... 20 | 056067267 | .. Switch, Power | 1 | 1 |
| ... 21 | 356029235 | .. Nameplate, Front, Upper MigMatic 300 | 1 | 1 |
| ... 21 | 356029237 | .. Nameplate, Front, Upper MigMatic 380 | 1 | 1 |
| ... 22 | +156122088 | .. Side Panel, Left Side, Lower | 1 | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Notes



956142845_13_14_B

Figure 8-2. Main Assembly, MigMatic 300

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|----------|------------|----------|-------------|----------|-----|
| | | | | Model | 400 |
| | | | | 230/400 | 400 |

Figure 8-2. Main Assembly, MigMatic 300

| | | | | | | |
|--------|-----|------------|--------------------------------------|---|-----|---|
| ... 1 | ... | 156012138 | .. Spool Holder, Shaft | 1 | ... | 1 |
| ... 2 | ... | 656009004 | .. Washer, 17 x 70, Plastic | 1 | ... | 1 |
| ... 3 | ... | 656102007 | .. Hub | 1 | ... | 1 |
| ... 4 | ... | 156009134 | .. Washer, Flat | 1 | ... | 1 |
| ... 5 | ... | 156032140 | .. Spring, 17 x 2.6 x 6 L.40 | 1 | ... | 1 |
| ... 6 | ... | 056020072 | .. Handwheel Reel, w/Ring | 1 | ... | 1 |
| ... 7 | ... | 156015027 | .. Spool Nut, Plastic | 1 | ... | 1 |
| ... 8 | ... | 156023170 | .. Spacer, Spool Holder D.50 H.18 | 1 | ... | 1 |
| ... 9 | ... | 156023171 | .. Spacer, Spool Holder D.50 H.30 | 1 | ... | 1 |
| ... 10 | F1 | *056092097 | .. Fuse, 2A 250V 5 x 20 T | 1 | ... | 1 |
| ... 11 | ... | 356029240 | .. Nameplate, Fuse, MigMatic 300/380 | 1 | ... | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

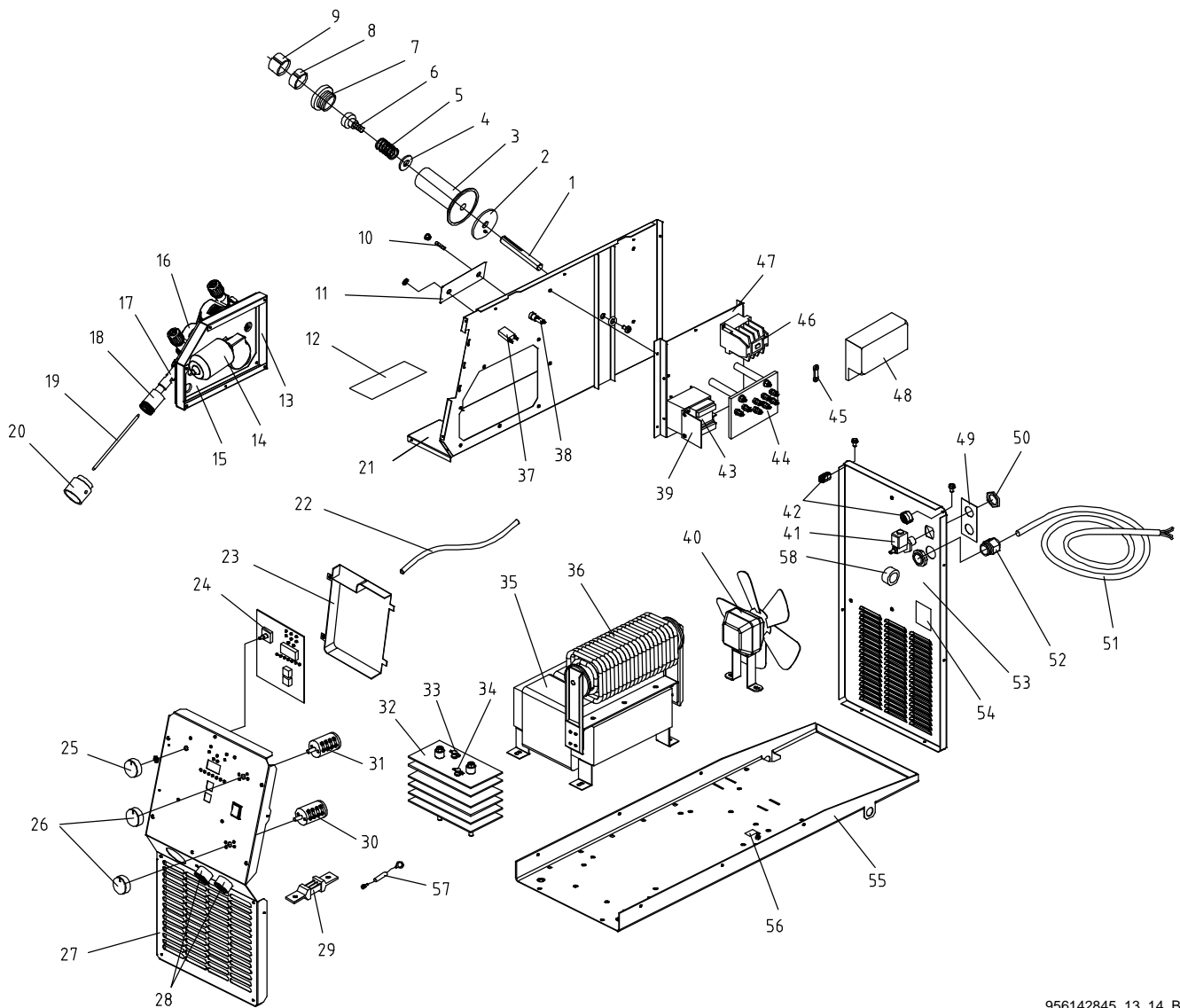
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|--|------------|------------|--|----------|-----|
| | | | | Model | |
| | | | | 230/400 | 400 |
| Figure 8-2. Main Assembly, MigMatic 300 | | | | | |
| 12 | | +178937 | Label, Warning Electric Shock | 1 | 1 |
| 13 | | 156005166 | Housing, Motor Drive | 1 | 1 |
| 14 | M | 057010052 | Motor, Gear 24VDC 60W | 1 | 1 |
| 15 | | 656005031 | Insulator, Plate | 1 | 1 |
| 16 | | 028033032 | Wire Drive System, 2 Rolls | 1 | 1 |
| 17 | | 156008042 | Spacer, D.19 L.52, Mini-Euro Connector | 1 | 1 |
| 18 | | 057052050 | Connector, Mini-Euro, Quick Female | 1 | 1 |
| 19 | | 156090028 | Wire Guide, 2 x 5, L.143,5 Outlet | 1 | 1 |
| 20 | | 656014014 | Plastic, Euro | 1 | 1 |
| 21 | | +156122089 | Plate, Baffle | 1 | 1 |
| 22 | | 656026127 | Hose, Gas Braided, D.5 x 9, Black | 1 | 1 |
| 23 | | 116039030 | Box Protection, PCB | 1 | 1 |
| 24 | PC1 | 057084166 | Circuit Board, Motor Control & Display Meter | 1 | 1 |
| 25 | | 000207075 | Knob, Pointer, D.6 | 1 | 1 |
| 26 | | 056020069 | Knob, Pointer, D.7 | 2 | 2 |
| 27 | | +156118076 | Panel, Front | 1 | 1 |
| 28 | | 056076260 | Dinse, Socket, Female, 50MMQ | 1 | 1 |
| 29 | | 056059291 | Shunt, 300A 60MV | 1 | 1 |
| 30 | S2 | 056067269 | Switch, 20A SCH9813 10 Pos | 1 | 1 |
| 31 | S3 | 056067278 | Switch, 20A SCH966 2 Pos | 1 | 1 |
| 32 | SR1 | 056050162 | Rectifier, PTS 24/6/2 + C + R | 1 | 1 |
| 33 | TP4 | 056159029 | Thermostat, 70, 5MA | 1 | 1 |
| 34 | TP1 | 056159026 | Thermostat, 100, 10A | 1 | 1 |
| 35 | T1 | 058021156 | Transformer, 400V, 60 x 70 x 150, AL | 1 | 1 |
| 36 | Z | 057098023 | Choke, MigMatic 380, D.8.50 L.305 | | |
| 37 | CB1 | 056067283 | Circuit Breaker, 5A | 1 | 1 |
| 38 | | 056092098 | Holder, Fuse | 1 | 1 |
| 39 | PC2 | 057084167 | Circuit Board, F.O.D | 1 | 1 |
| 40 | FM1 | 057035021 | Fan, 230VAC | 1 | 1 |
| 41 | GSV | 056061068 | Solenoid, Gas Valve, 24VAC | 1 | 1 |
| 42 | | 156005146 | Corner Seal, Plastic | 2 | 2 |
| 43 | T2 | 058021157 | Transformer, Auxiliary | 1 | 1 |
| 44 | | 057024026 | Primary Power Terminal Board | 1 | |
| 45 | | 556070015 | Link, Primary Power Terminal Board | 7 | |
| 46 | W | 057079040 | Contact, 24V 25A CN-18 | | 1 |
| 46 | W | 057079042 | Contact, 24V CU-32R | 1 | |
| 47 | | 156005167 | Plate, Support, Black | 1 | 1 |
| 48 | | 116014052 | Protection, Primary Power Terminal Board | 1 | |
| 49 | | 356029239 | Nameplate, Rear, MigMatic 300/380 Base/DX | 1 | 1 |
| 50 | | 000220805 | Nut, Plastic | 1 | 1 |
| 51 | | 256071011 | Line Cable, Neoprene, 4 x 2,5, MT. 3,3 | | 1 |
| 51 | | 256071012 | Line Cable, Neoprene, 4 x 4 MT. 3,3 | 1 | |
| 52 | | 656089041 | Clamp | 1 | 1 |
| 53 | | +156118077 | Panel, Rear | 1 | 1 |
| 54 | | 956142629 | Label, Fan | 1 | 1 |
| 55 | | +156006071 | Base | 1 | 1 |
| 56 | | 000155436 | Label, Ground | 1 | 1 |
| 57 | C4,C5 | 056082102 | Capacitor, MPW 0,1MF 10% 1000VCC | 2 | 2 |
| 58 | LF | 156160003 | Core, Toroidal, 13x26x28,5 | 1 | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.



956142845_13_14_B

Figure 8-3. Main Assembly, MigMatic 380

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|----------|------------|----------|-------------|----------|-----|
| | | | | Model | 400 |
| | | | | 230/400 | 400 |

Figure 8-3. Main Assembly, MigMatic 380

| | | | | | | |
|-----|----|-----------|---|---|-----|---|
| ... | 1 | 156012138 | .. Spool Holder, Shaft | 1 | ... | 1 |
| ... | 2 | 656009004 | .. Washer, 17 x 70, Plastic | 1 | ... | 1 |
| ... | 3 | 656102007 | .. Hub | 1 | ... | 1 |
| ... | 4 | 156009134 | .. Washer, Flat | 1 | ... | 1 |
| ... | 5 | 156032140 | .. Spring, 17 x 2.6 x 6 L.40 | 1 | ... | 1 |
| ... | 6 | 056020072 | .. Handwheel Reel, w/Ring | 1 | ... | 1 |
| ... | 7 | 156015027 | .. Spool Nut, Plastic | 1 | ... | 1 |
| ... | 8 | 156023170 | .. Spacer, Spool Holder D.50 H.18 | 1 | ... | 1 |
| ... | 9 | 156023171 | .. Spacer, Spool Holder D.50 H.30 | 1 | ... | 1 |
| ... | 10 | F1 | .. *056092097 .. Fuse, 2A 250V 5 x 20 T | 1 | ... | 1 |
| ... | 11 | 356029240 | .. Nameplate, Fuse, MigMatic 300/380 | 1 | ... | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

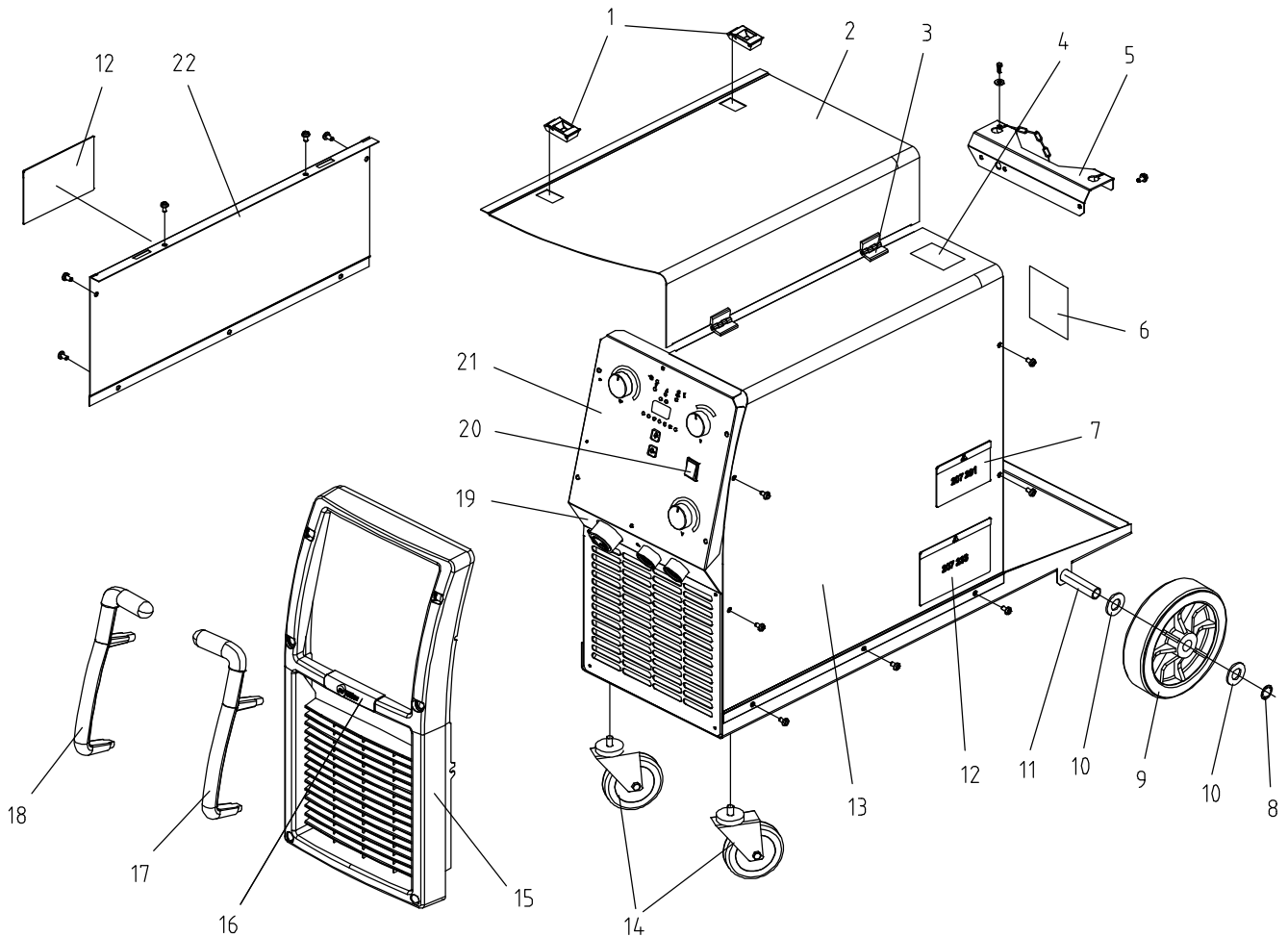
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|--|------------|------------|--|----------|-----|
| | | | | Model | |
| | | | | 230/400 | 400 |
| Figure 8-3. Main Assembly, MigMatic 380 | | | | | |
| 12 | | +178937 | Label, Warning Electric Shock | 1 | 1 |
| 13 | | 156005166 | Housing, Motor Drive | 1 | 1 |
| 14 | M | 057010052 | Motor, Gear 24VDC 60W | 1 | 1 |
| 15 | | 656005032 | Insulator, Plate | 1 | 1 |
| 16 | | 028033033 | Wire Drive System, 4 Rolls | 1 | 1 |
| 17 | | 156008043 | Spacer, D.19 L.72, Mini-Euro Connector | 1 | 1 |
| 18 | | 057052050 | Connector, Mini-Euro, Quick Female | 1 | 1 |
| 19 | | 156090029 | Wire Guide, 2 x 5, L.155,5 Outlet | 1 | 1 |
| 20 | | 656014014 | Plastic, Euro | 1 | 1 |
| 21 | | +156122089 | Plate, Baffle | 1 | 1 |
| 22 | | 656026127 | Hose, Gas Braided, D.5 x 9, Black | 1 | 1 |
| 23 | | 116039030 | Box Protection, PCB | 1 | 1 |
| 24 | PC1 | 057084166 | Circuit Board, Motor Control & Display Meter | 1 | 1 |
| 25 | | 000207075 | Knob, Pointer, D.6 | 1 | 1 |
| 26 | | 056020069 | Knob, Pointer, D.7 | 2 | 2 |
| 27 | | +156118076 | Panel, Front | 1 | 1 |
| 28 | | 056076260 | Dinse, Socket, Female, 50MMQ | 2 | 2 |
| 29 | | 056059291 | Shunt, 300A 60MV | 1 | 1 |
| 30 | S2 | 056067269 | Switch, 20A SCH9813 10 Pos | 1 | 1 |
| 31 | S3 | 056067272 | Switch, 20A SCH966 3 Pos | 1 | 1 |
| 32 | SR1 | 056050163 | Rectifier, PTS 30/6/2 + C + R | 1 | 1 |
| 33 | TP4 | 056159029 | Thermostat, 70, 5MA | 1 | 1 |
| 34 | TP1 | 056159026 | Thermostat, 100, 10A | 1 | 1 |
| 35 | T1 | 058021158 | Transformer, 400V, 50 x 100 x 150, AL | 1 | 1 |
| 36 | Z | 057098023 | Choke, MigMatic 380, D.8.50 L.305 | 1 | 1 |
| 37 | CB1 | 056067283 | Circuit Breaker, 5A | 1 | 1 |
| 38 | | 056092098 | Holder, Fuse | 1 | 1 |
| 39 | PC2 | 057084167 | Circuit Board, F.O.D | 1 | 1 |
| 40 | FM1 | 057035021 | Fan, 230VAC | 1 | 1 |
| 41 | GSV | 056061068 | Solenoid, Gas Valve, 24VAC | 1 | 1 |
| 42 | | 156005146 | Corner Seal, Plastic | 2 | 2 |
| 43 | T2 | 058021157 | Transformer, Auxiliary | 1 | 1 |
| 44 | | 057024026 | Primary Power Terminal Board | 1 | |
| 45 | | 556070015 | Link, Primary Power Terminal Board | 7 | |
| 46 | W | 057079041 | Contact, 24V CU-38 | | 1 |
| 46 | W | 057079043 | Contact, 24V CU-40 | 1 | |
| 47 | | 156005167 | Plate, Support, Black | 1 | 1 |
| 48 | | 116014052 | Protection, Primary Power Terminal Board | 1 | |
| 49 | | 356029239 | Nameplate, Rear, MigMatic 300/380 Base/DX | 1 | 1 |
| 50 | | 000220805 | Nut, Plastic | 1 | 1 |
| 51 | | 256071012 | Line Cable, Neoprene, 4 x 4, MT. 3,3 | | 1 |
| 51 | | 256071013 | Line Cable, Neoprene, 4 x 6 MT. 3,3 | 1 | |
| 52 | | 656089041 | Clamp | 1 | 1 |
| 53 | | +156118077 | Panel, Rear | 1 | 1 |
| 54 | | 000176106 | Label, Fan | 1 | 1 |
| 55 | | +156006071 | Base | 1 | 1 |
| 56 | | 000155436 | Label, Ground | 1 | 1 |
| 57 | C4,C5 | 056082102 | Capacitor, MPW 0,1MF 10% 1000VCC | 2 | 2 |
| 58 | LF | 156160003 | Core, Toroidal, 13x26x28,5 | 1 | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

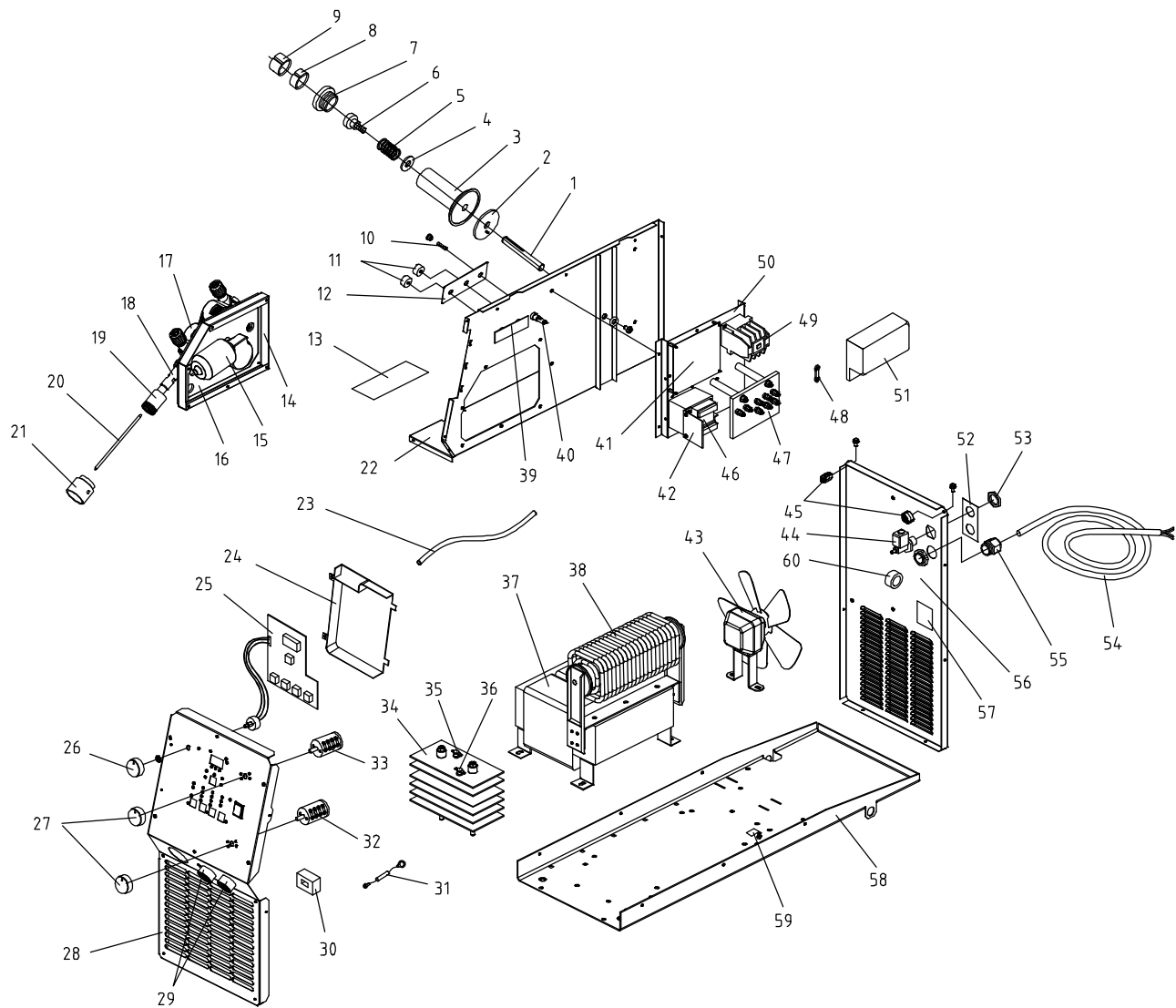


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Figure 8-4. Wrapper Assembly, MigMatic 300DX/380DX

| Item No. | Part No. | Description | Quantity | |
|---|-----------|--|-----------|-----------|
| | | | Model 300 | Model 380 |
| Figure 8-4. Wrapper Assembly, MigMatic 300DX/380DX | | | 300 | 380 |
| 1 | 156034005 | Latch, Side Panel | 2 | 2 |
| 2 | 156007043 | Side Panel, Hinged | 1 | 1 |
| 3 | 156034007 | Hinge | 2 | 2 |
| 4 | 000207235 | Label, Warning, Tilt | 1 | 1 |
| 5 | 156005156 | Cylinder Rack, Upper Support | 1 | 1 |
| 6 | 956142857 | Rating Plate, MigMatic 300DX V.400 | 1 | |
| 6 | 956142861 | Rating Plate, MigMatic 300DX V.230/400 | 1 | |
| 6 | 956142859 | Rating Plate, MigMatic 380DX V.400 | | 1 |
| 6 | 956142863 | Rating Plate, MigMatic 380DX V.230/400 | | 1 |
| 7 | 000207291 | Label, Primary Power Connections | 1 | 1 |
| 8 | 156023157 | Wheel, Retaining Clip | 2 | 2 |
| 9 | 056054085 | Wheel, D.250, Hole D.20 | 2 | 2 |
| 10 | 156009132 | Washer | 4 | 4 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.



956142845_14_14_B

Figure 8-5. Main Assembly, MigMatic 300DX

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|----------|------------|----------|-------------|----------|-----|
| | | | | Model | 400 |
| | | | | 230/400 | 400 |

Figure 8-5. Main Assembly, MigMatic 300DX

| | | | | | | |
|-----|----|-----------|---|---|-----|---|
| ... | 1 | 156012138 | .. Spool Holder, Shaft | 1 | ... | 1 |
| ... | 2 | 656009004 | .. Washer, 17 x 70, Plastic | 1 | ... | 1 |
| ... | 3 | 656102007 | .. Hub | 1 | ... | 1 |
| ... | 4 | 156009134 | .. Washer, Flat | 1 | ... | 1 |
| ... | 5 | 156032140 | .. Spring, 17 x 2.6 x 6 L.40 | 1 | ... | 1 |
| ... | 6 | 056020072 | .. Handwheel Reel, w/Ring | 1 | ... | 1 |
| ... | 7 | 156015027 | .. Spool Nut, Plastic | 1 | ... | 1 |
| ... | 8 | 156023170 | .. Spacer, Spool Holder D.50 H.18 | 1 | ... | 1 |
| ... | 9 | 156023171 | .. Spacer, Spool Holder D.50 H.30 | 1 | ... | 1 |
| ... | 10 | F1 | .. *056092097 .. Fuse, 2A 250V 5 x 20 T | 1 | ... | 1 |
| ... | 11 | 000207076 | .. Knob, Pointer, D.22 | 2 | ... | 2 |
| ... | 12 | 356029213 | .. Nameplate, Inner | 1 | ... | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

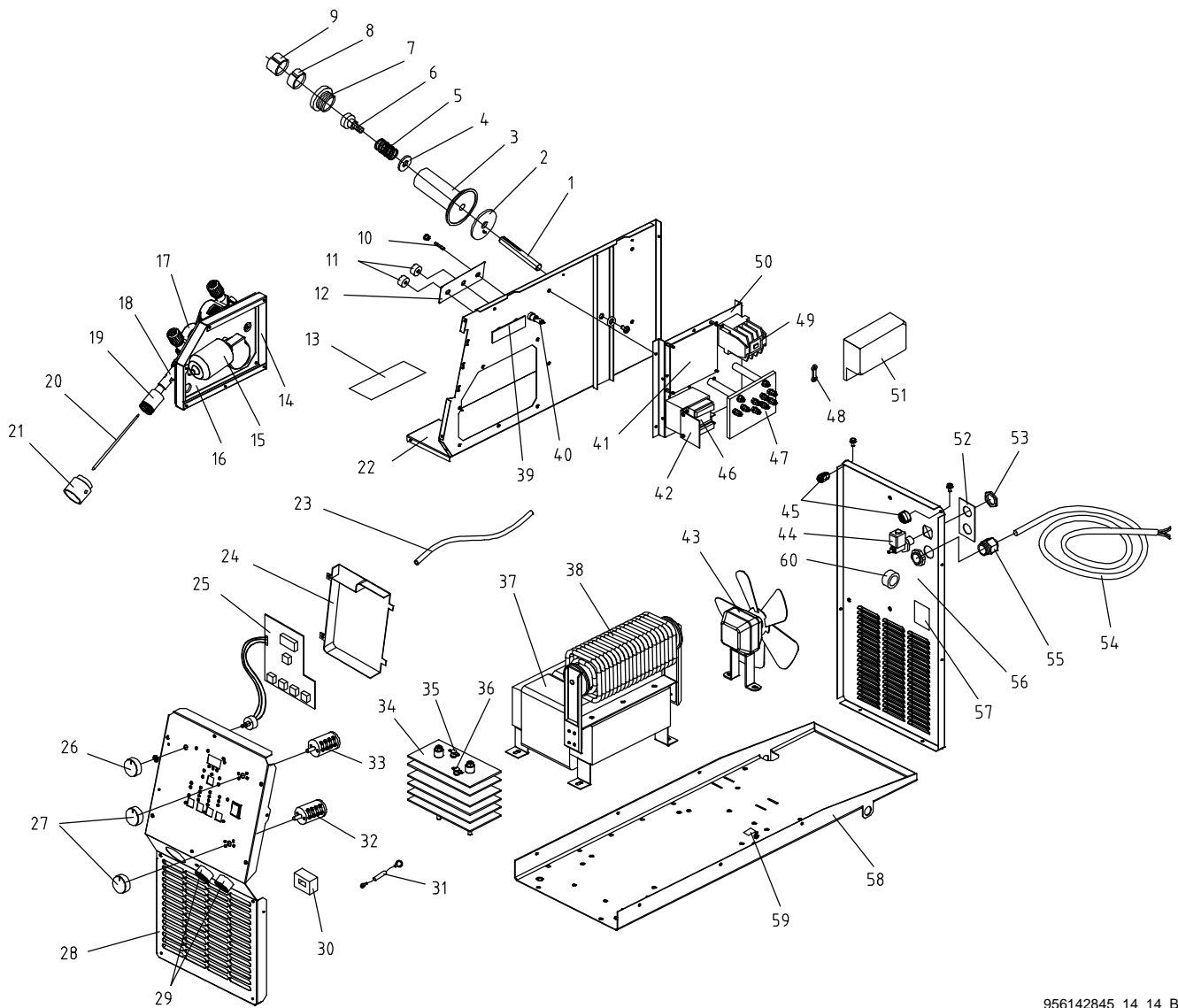
To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|--|------------|------------|--|----------|-----|
| | | | | Model | |
| | | | | 230/400 | 400 |
| Figure 8-5. Main Assembly, MigMatic 300DX | | | | | |
| 13 | | +178937 | Label, Warning Electric Shock | 1 | 1 |
| 14 | | 156005166 | Housing, Motor Drive | 1 | 1 |
| 15 | M | 057010052 | Motor, Gear 24VDC 60W | 1 | 1 |
| 16 | | 656005031 | Insulator, Plate | 1 | 1 |
| 17 | | 028033032 | Wire Drive System, 2 Rolls | 1 | 1 |
| 18 | | 156008042 | Spacer, D.19 L.52, Mini-Euro Connector | 1 | 1 |
| 19 | | 057052050 | Connector, Mini-Euro, Quick Female | 1 | 1 |
| 20 | | 156090028 | Wire Guide, 2 x 5, L.143,5 Outlet | 1 | 1 |
| 21 | | 656014014 | Plastic, Euro | 1 | 1 |
| 22 | | +156122089 | Plate, Baffle | 1 | 1 |
| 23 | | 656062127 | Hose, Gas Braided, D.5 x 9, Black | 1 | 1 |
| 24 | | 116039030 | Box Protection, PCB | 1 | 1 |
| 25 | PC2 | 057084168 | Circuit Board, Digital Volt/Amp/Wire Speed Display | 1 | 1 |
| 26 | | 207075 | Knob, Pointer, D.6 | 1 | 1 |
| 27 | | 056020069 | Knob, Pointer, D.7 | 2 | 2 |
| 28 | | +156118078 | Panel, Front | 1 | 1 |
| 29 | | 056076260 | Dinse, Socket, Female, 50MMQ | 1 | 1 |
| 30 | HP | 056167009 | Transducer, Current 400A | 1 | 1 |
| 31 | C4,C5 | 056082102 | Capacitor, MPW 0,1MF 10% 100VCC | 2 | 2 |
| 32 | S2 | 056067271 | Switch, 20A SCH9899 10 Pos | 1 | 1 |
| 33 | S3 | 056067279 | Switch, 20A SCH966 2 Pos | 1 | 1 |
| 34 | SR1 | 056050162 | Rectifier, PTS 24/6/2 + C + R | 1 | 1 |
| 35 | TP4 | 056159029 | Thermostat, 70, 5MA | 1 | 1 |
| 36 | TP1 | 056159026 | Thermostat, 100, 10A | 1 | 1 |
| 37 | T1 | 058021156 | Transformer, 400V, 60 x 70 x 150, AL | 1 | 1 |
| 38 | Z | 057098023 | Choke, MigMatic 380, D.8.50 L.305 | | |
| 39 | PC3 | 057084169 | Circuit Board, Burnback Time Slope Adjustment | 1 | 1 |
| 40 | | 056092098 | Holder, Fuse | 1 | 1 |
| 41 | PC1 | 057084170 | Circuit Board, Control | 1 | 1 |
| 42 | PC4 | 057084167 | Circuit Board, F.O.D | 1 | 1 |
| 43 | FM1 | 057035021 | Fan, 230VAC | 1 | 1 |
| 44 | GSV | 056061068 | Solenoid, Gas Valve, 24VAC | 1 | 1 |
| 45 | | 156005146 | Corner Seal, Plastic | 2 | 2 |
| 46 | T2 | 058021157 | Transformer, Auxiliary | 1 | 1 |
| 47 | | 057024026 | Primary Power Terminal Board | 1 | |
| 48 | | 556070015 | Link, Primary Power Terminal Board | 7 | |
| 49 | W | 057079040 | Contact, 24V 25A CN-18 | | 1 |
| 49 | W | 057079042 | Contact, 24V CU-32R | 1 | |
| 50 | | 156005167 | Plate, Support, Black | 1 | 1 |
| 51 | | 116014052 | Protection, Primary Power Terminal Board | 1 | |
| 52 | | 356029239 | Nameplate, Rear, MigMatic 300/380 Base/DX | 1 | 1 |
| 53 | | 000220805 | Nut, Plastic | 1 | 1 |
| 54 | | 256071011 | Line Cable, Neoprene, 4 x 2,5, MT. 3,3 | | 1 |
| 54 | | 256071012 | Line Cable, Neoprene, 4 x 4 MT. 3,3 | 1 | |
| 55 | | 656089041 | Clamp | 1 | 1 |
| 56 | | +156118077 | Panel, Rear | 1 | 1 |
| 57 | | 000176106 | Label, Fan | 1 | 1 |
| 58 | | +156006071 | Base | 1 | 1 |
| 59 | | 000155436 | Label, Ground | 1 | 1 |
| 60 | LF | 156160003 | Core, Toroidal, 13x26x28,5 | 1 | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.



956142845_14_14_B

Figure 8-6. Main Assembly, MigMatic 380DX

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|----------|------------|----------|-------------|----------|-----|
| | | | | Model | 400 |
| | | | | 230/400 | 400 |

Figure 8-6. Main Assembly, MigMatic 380DX

| | | | | | | |
|-----|----|-----------|---|---|-----|---|
| ... | 1 | 156012138 | .. Spool Holder, Shaft | 1 | ... | 1 |
| ... | 2 | 656009004 | .. Washer, 17 x 70, Plastic | 1 | ... | 1 |
| ... | 3 | 656102007 | .. Hub | 1 | ... | 1 |
| ... | 4 | 156009134 | .. Washer, Flat | 1 | ... | 1 |
| ... | 5 | 156032140 | .. Spring, 17 x 2.6 x 6 L.40 | 1 | ... | 1 |
| ... | 6 | 056020072 | .. Handwheel Reel, w/Ring | 1 | ... | 1 |
| ... | 7 | 156015027 | .. Spool Nut, Plastic | 1 | ... | 1 |
| ... | 8 | 156023170 | .. Spacer, Spool Holder D.50 H.18 | 1 | ... | 1 |
| ... | 9 | 156023171 | .. Spacer, Spool Holder D.50 H.30 | 1 | ... | 1 |
| ... | 10 | F1 | .. *056092097 .. Fuse, 2A 250V 5 x 20 T | 1 | ... | 1 |
| ... | 11 | 000207076 | .. Knob, Pointer, D.22 | 2 | ... | 2 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity | |
|--|------------|------------|--|----------|-----|
| | | | | Model | |
| | | | | 230/400 | 400 |
| Figure 8-6. Main Assembly, MigMatic 380DX | | | | | |
| 12 | | 356029213 | Nameplate, Inner | 1 | 1 |
| 13 | | +178937 | Label, Warning Electric Shock | 1 | 1 |
| 14 | | 156005166 | Housing, Motor Drive | 1 | 1 |
| 15 | M | 057010052 | Motor, Gear 24VDC 60W | 1 | 1 |
| 16 | | 656005032 | Insulator, Plate | 1 | 1 |
| 17 | | 028033033 | Wire Drive System, 4 Rolls | 1 | 1 |
| 18 | | 156008043 | Spacer, D.19 L.72, Mini-Euro Connector | 1 | 1 |
| 19 | | 057052050 | Connector, Mini-Euro, Quick Female | 1 | 1 |
| 20 | | 156090029 | Wire Guide, 2 x 5, L.155,5 Outlet | 1 | 1 |
| 21 | | 656014014 | Plastic, Euro | 1 | 1 |
| 22 | | +156122089 | Plate, Baffle | 1 | 1 |
| 23 | | 656026127 | Hose, Gas Braided, D.5 x 9, Black | 1 | 1 |
| 24 | | 116039030 | Box Protection, PCB | 1 | 1 |
| 25 | PC2 | 057084171 | Circuit Board, Digital Volt/Amp/Wire Speed Display | 1 | 1 |
| 26 | | 207075 | Knob, Pointer, D.6 | 1 | 1 |
| 27 | | 056020069 | Knob, Pointer, D.7 | 2 | 2 |
| 28 | | +156118078 | Panel, Front | 1 | 1 |
| 29 | | 056076260 | Dinse, Socket, Female, 50MMQ | 2 | 2 |
| 30 | HP | 056167009 | Transducer, Current 400A | 1 | 1 |
| 31 | C4,C5 | 056082102 | Capacitor, MPW 0,1MF 10% 100VCC | 2 | 2 |
| 32 | S2 | 056067271 | Switch, 20A SCH9899 10 Pos | 1 | 1 |
| 33 | S3 | 056067280 | Switch, 20A 3 Pos | 1 | 1 |
| 34 | SR1 | 056050163 | Rectifier, PTS 30/6/2 + C + R | 1 | 1 |
| 35 | TP4 | 056159029 | Thermostat, 70, 5MA | 1 | 1 |
| 36 | TP1 | 056159026 | Thermostat, 100, 10A | 1 | 1 |
| 37 | T1 | 058021158 | Transformer, 400V, 50 x 100 x 150, AL | 1 | 1 |
| 38 | Z | 057098023 | Choke, MigMatic 380, D.8.50 L.305 | 1 | 1 |
| 39 | PC3 | 057084169 | Circuit Board, Burnback Time Slope Adjustment | 1 | 1 |
| 40 | | 056092098 | Holder, Fuse | 1 | 1 |
| 41 | PC1 | 057084172 | Circuit Board, Control | 1 | 1 |
| 42 | PC2 | 057084167 | Circuit Board, F.O.D | 1 | 1 |
| 43 | FM1 | 057035021 | Fan, 230VAC | 1 | 1 |
| 44 | GSV | 056061068 | Solenoid, Gas Valve, 24VAC | 1 | 1 |
| 45 | | 156005146 | Corner Seal, Plastic | 2 | 2 |
| 46 | T2 | 058021157 | Transformer, Auxiliary | 1 | 1 |
| 47 | | 057024026 | Primary Power Terminal Board | 1 | |
| 48 | | 556070015 | Link, Primary Power Terminal Board | 7 | |
| 49 | W | 057079041 | Contact, 24V CU-38 | 1 | 1 |
| 49 | W | 057079043 | Contact, 24V CU-40 | 1 | |
| 50 | | 156005167 | Plate, Support, Black | 1 | 1 |
| 51 | | 116014052 | Protection, Primary Power Terminal Board | 1 | |
| 52 | | 356029239 | Nameplate, Rear, MigMatic 300/380 Base/DX | 1 | 1 |
| 53 | | 000220805 | Nut, Plastic | 1 | 1 |
| 54 | | 256071012 | Line Cable, Neoprene, 4 x 4, MT. 3,3 | 1 | |
| 54 | | 256071013 | Line Cable, Neoprene, 4 x 6 MT. 3,3 | 1 | |
| 55 | | 656089041 | Clamp | 1 | 1 |
| 56 | | +156118077 | Panel, Rear | 1 | 1 |
| 57 | | 000176106 | Label, Fan | 1 | 1 |
| 58 | | +156006071 | Base | 1 | 1 |
| 59 | | 000155436 | Label, Ground | 1 | 1 |
| 60 | LF | 156160003 | Core, Toroidal, 13x26x28,5 | 1 | 1 |

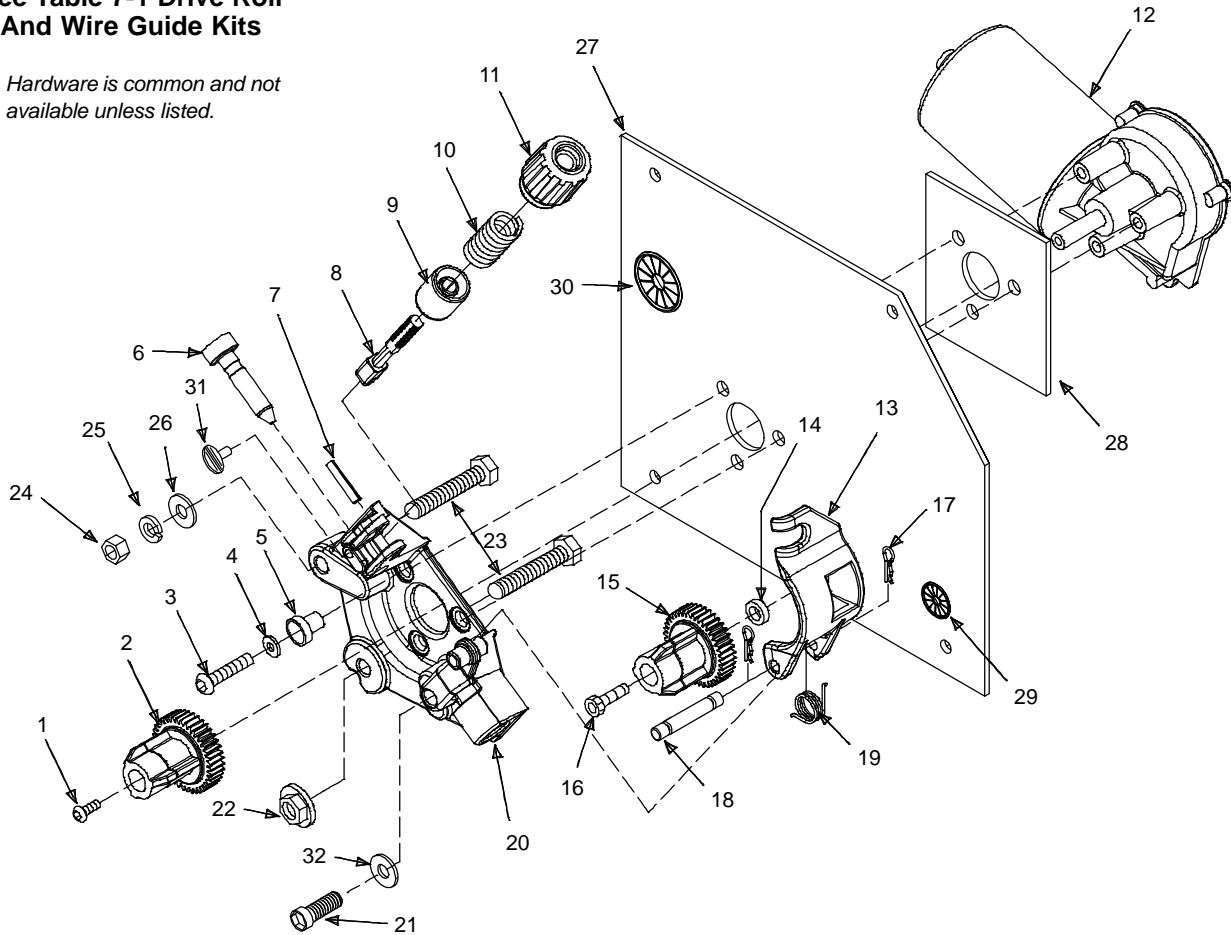
+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

**See Table 7-1 Drive Roll
And Wire Guide Kits**

☞ Hardware is common and not available unless listed.



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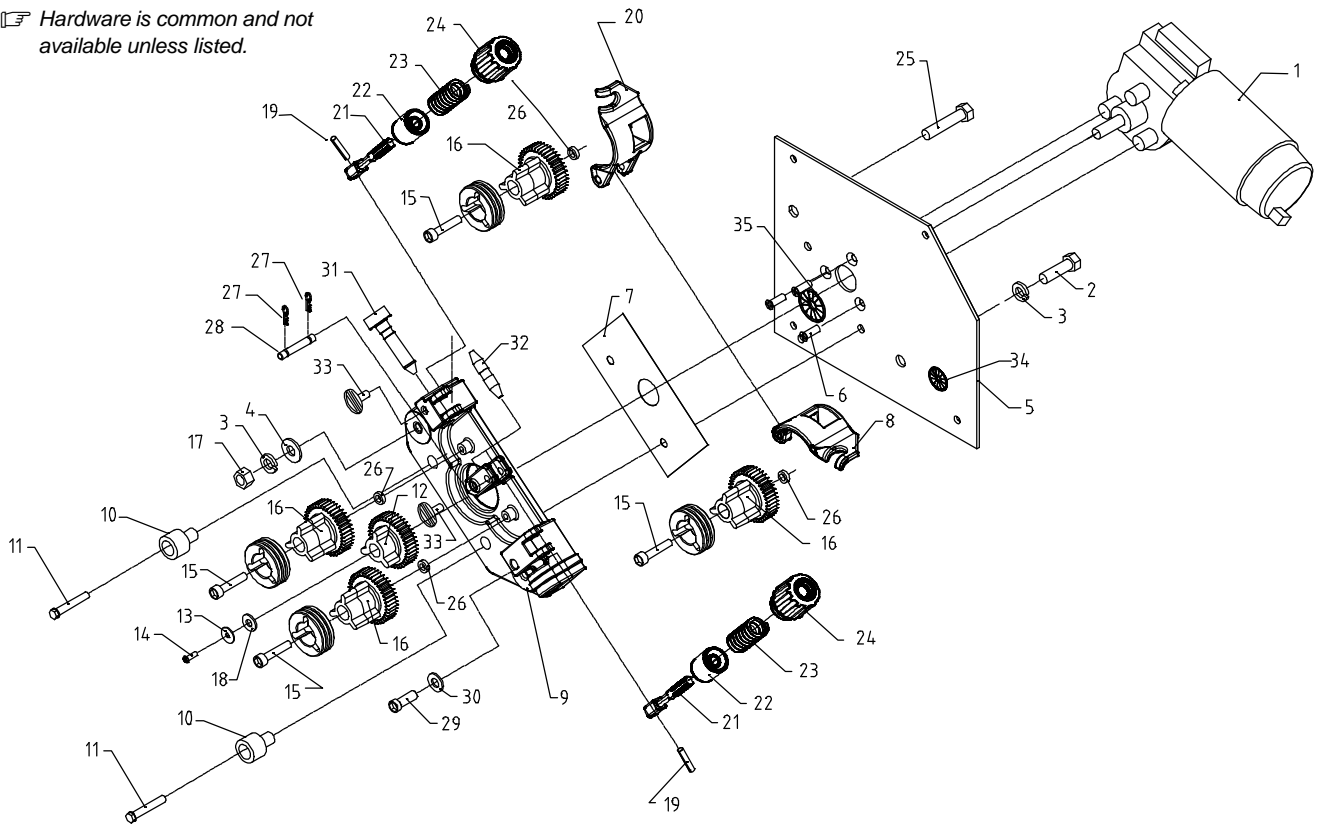
Figure 8-7. Drive Assembly, Wire (2 Roll)

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|--|------------|-----------|---|----------|
| Figure 8-7. Drive Assembly, Wire (2 Roll) | | | | |
| 1 | | 174609 | Screw, M4-.7 x 12 Cheese HD BLK DIN 84 | 1 |
| 2 | | 173619 | Carrier, Drive Roll w/Components 24 Pitch 10mm Shaf | 1 |
| 3 | | 156019695 | Screw, M6 | 3 |
| 4 | | 192029 | Washer, Flat .250 ID x 0.437 OD x 0.15T STL PLN | 3 |
| 5 | | 173620 | Bushing, MTG Motor | 3 |
| 6 | | 221912 | Guide, Wire Inlet Nylon .023 – .052 | 1 |
| 7 | | 010224 | Pin, Spring CS .187 x 1.000 | 1 |
| 8 | | 225718 | Fastener, Pinned | 1 |
| 9 | | 196896 | Cup Spring | 1 |
| 10 | | 196897 | Spring, CPRSN .695 OD x .95 Wire x 1.500 | 1 |
| 11 | | 196895 | Knob, Tension | 1 |
| 12 | M 0570 | 100052 | Motor, Gear 24VDC 60W | 1 |
| 13 | | 228828 | Lever, MTG Pressure Gear | 1 |
| 14 | | 166072 | Spacer, Gear | 1 |
| 15 | | 172075 | Carrier, Drive Roll w/Components 24 Pitch | 1 |
| 16 | | 602009 | Screw, 250–20 x 1.25 SOC HD–HEX Gr8 PLN | 1 |
| 17 | | 151828 | Pin, Cotter Hair .42 x .750 | 2 |

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

**See Table 7-2 Drive Roll
And Wire Guide Kits**

☞ Hardware is common and not available unless listed.



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Figure 8-8. Drive Assembly, Wire (4 Roll)

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|----------|------------|----------|-------------|----------|
|----------|------------|----------|-------------|----------|

Figure 8-8. Drive Assembly, Wire (4 Roll)

| | | | | |
|----|---|-----------|---|---|
| 1 | M | 057010052 | Motor, Gear 24VDC 60W | 1 |
| 2 | | 601966 | Screw | 1 |
| 3 | | 602213 | Washer, Lock | 2 |
| 4 | | 010910 | Washer, Flat | 1 |
| 5 | | 656005032 | Insulator Plate | 1 |
| 6 | | 156019746 | Screw, M6 x 16 | 3 |
| 7 | | 656005027 | Insulator, Motor | 1 |
| 8 | | 238728 | Lever, MTG Pressure Gear | 1 |
| 9 | | 238726 | Housing, Adapter Drive Motor | 1 |
| 10 | | 221654 | Washer, Shldr Insulating | 2 |
| 11 | | 156019200 | Screw, M6 x 35 | 2 |
| 12 | | 173618 | Carrier Drive, Gear | 1 |
| 13 | | 602200 | Washer, Medium Lock | 1 |
| 14 | | 124609 | Screw, M4 x 12 | 1 |
| 15 | | 602209 | Screw, 250-20 x 1.25 SOC HD-HEX Gr8 PLN | 1 |
| 16 | | 172075 | Carrier, Drive Roll w/Components 24 Pitch | 4 |
| 17 | | 601872 | Nut | 1 |
| 18 | | 156009124 | Washer, D5 x 15 x 1.2 | 1 |

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

☞ Base selection of drive rolls upon the following recommended usages:

1. V-Grooved rolls for hard wire.
2. U-Grooved rolls for soft and soft shelled cored wires.
3. U-Cogged rolls for extremely soft shelled wires (usually hard surfacing types).
4. V-Knurled rolls for hard shelled cored wires.
5. Drive roll types may be mixed to suit particular requirements (example: V-Knurled roll in combination with U-Grooved).

Table 7-1. Drive Roll And Wire Guide Kits (2 Roll Models)

| Wire Diameter | | | Kit No. | Drive Roll | | Wire Guide |
|---------------|-----------------|-----------------|---------|------------|-----------|------------|
| Metric | Fraction | Decimal | | Part No. | Type | Inlet |
| 0.6 mm | 0.023/0.025 in. | 0.023/0.025 in. | 087 132 | 087 130 | V-Grooved | 056 192 |
| 0.8/1.0 mm | 0.030/0.035 in. | 0.030/0.035 in. | 204 579 | 203 526 | V-Grooved | 056 192 |
| 0.8 mm | 0.030 in. | 0.030 in. | 079 594 | 053 695 | V-Grooved | 056 192 |
| 1.0 mm | 0.035 in. | 0.035 in. | 079 595 | 053 700 | V-Grooved | 056 193 |
| 1.0/1.2 mm | 0.035/0.045 in. | 0.035/0.045 in. | N/A | 189 285 | V-Grooved | 056 192 |
| 1.2 mm | 0.045 in. | 0.045 in. | 079 596 | 053 696 | V-Grooved | 056 193 |
| 1.0 mm | 0.035 in. | 0.035 in. | 044 749 | 072 000 | U-Grooved | 056 192 |
| 1.2 mm | 0.045 in. | 0.045 in. | 079 599 | 053 701 | U-Grooved | 056 193 |
| 1.0 mm | 0.035 in. | 0.035 in. | 079 606 | 132 958 | V-Knurled | 056 192 |
| 1.2 mm | 0.045 in. | 0.045 in. | 079 607 | 132 957 | V-Knurled | 056 193 |
| 1.2 mm | 0.045 in. | 0.045 in. | 083 318 | 083 489 | U-Cogged | 056 193 |

Table 7-2. Drive Roll And Wire Guide Kits (4 Roll Models)

| Wire Diameter | | | Kit No. | Drive Roll | | Wire Guide | |
|---------------|-----------------|-----------------|---------|------------|-----------|------------|--------------|
| Metric | Fraction | Decimal | | Part No. | Type | Inlet | Intermediate |
| 0.6 mm | 0.023/0.025 in. | 0.023/0.025 in. | 087 132 | 087 130 | V-Grooved | 056 192 | 056 206 |
| 0.8/1.0 mm | 0.030/0.035 in. | 0.030/0.035 in. | N/A | 203 526 | V-Grooved | 056 192 | 056 206 |
| 0.8 mm | 0.030 in. | 0.030 in. | 046 780 | 053 695 | V-Grooved | 056 192 | 056 206 |
| 1.0 mm | 0.035 in. | 0.035 in. | 046 781 | 053 700 | V-Grooved | 156 193 | 056 207 |
| 1.0/1.2 mm | 0.035/0.045 in. | 0.035/0.045 in. | N/A | 189 285 | V-Grooved | 156 193 | 056 207 |
| 1.2 mm | 0.045 in. | 0.045 in. | 046 782 | 053 697 | V-Grooved | 056 193 | 056 207 |
| 1.0 mm | 0.035 in. | 0.035 in. | 044 750 | 072 000 | U-Grooved | 156 192 | 056 206 |
| 1.2 mm | 0.045 in. | 0.045 in. | 044 750 | 072 000 | U-Grooved | 056 192 | 056 206 |
| 1.0 mm | 0.035 in. | 0.035 in. | 046 785 | 053 701 | V-Knurled | 056 192 | 056 206 |
| 1.2 mm | 0.045 in. | 0.045 in. | 046 792 | 132 958 | V-Knurled | 056 192 | 056 206 |
| 1.2 mm | 0.045 in. | 0.045 in. | 083 319 | 083 489 | U-Cogged | 056 193 | 056 207 |

TRUE BLUE[®]

WARRANTY

Effective January 1, 2015
(Equipment with a serial number preface of MF or newer)

This limited warranty supersedes all previous Miller warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY – Subject to the terms and conditions below, ITW Welding Products Italy warrants to its original retail purchaser that new Miller equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Miller. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Miller will provide instructions on the warranty claim procedures to be followed. If notification is submitted as an online warranty claim, the claim must include a detailed description of the fault and the troubleshooting steps taken to identify failed components and the cause of their failure.

Miller shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date the equipment was delivered to the original retail purchaser or one year after the equipment is shipped to a European distributor or twelve months after the equipment is shipped to an International distributor.

1. 5 Years Parts — 3 Years Labor
 - * Original main power rectifiers only to include SCRs, diodes, and discrete rectifier modules with exclusion of STR, Si, STI, STH and MPi series.
2. 3 Years — Parts and Labor
 - * Engine Driven Welding Generators
(NOTE: Engines are warranted separately by the engine manufacturer.)
 - * Inverter Power Sources (Unless Otherwise Stated)
 - * Process Controllers
 - * Semi-Automatic and Automatic Wire Feeders
 - * Transformer/Rectifier Power Sources
3. 2 Years — Parts
 - * Auto-Darkening Helmet Lenses (No Labor)
 - * Migmatic 175
 - * HF Units
4. 1 Year — Parts and Labor Unless Specified
 - * Automatic Motion Devices
 - * Field Options
(NOTE: Field options are covered under True Blue[®] for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
 - * Induction Heating Power Sources, Coolers, and Electronic Controls/Recorders
 - * Motor-Driven Guns (w/exception of Spoolmate Spoolguns)
 - * Positioners and Controllers
 - * Powered Air Purifying Respirator (PAPR) Blower Unit (No Labor)
 - * Racks
 - * Running Gear and Trailers
 - * Subarc Wire Drive Assemblies
 - * Water Coolant Systems
 - * Work Stations/Weld Tables (No Labor)
5. 6 Months — Parts
 - * Batteries

6. 90 Days — Parts
 - * Accessory (Kits)
 - * Canvas Covers
 - * Induction Heating Coils and Blankets
 - * MIG Guns
 - * Remote Controls
 - * Replacement Parts (No Labor)
 - * Spoolmate Spoolguns
 - * Cables and Non-Electronic Controls

Miller's True Blue[®] Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, switches, slip rings, relays or parts that fail due to normal wear.**
2. Items furnished by Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Miller's option: (1) repair; or (2) replacement; or, where authorized in writing by Miller in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. Miller's option of repair or replacement will be F.O.B., Factory at ITW Welding Products Group Europe or F.O.B. at a Miller authorized service facility as determined by Miller. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.





Owner's Record

Please complete and retain with your personal records.

Model Name

Serial/Style Number

Purchase Date

(Date which equipment was delivered to original customer.)

Distributor

Address

Country

Zip/Postal Code



For Service

Contact a *DISTRIBUTOR* or *SERVICE AGENCY* near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:

Welding Supplies and Consumables

Options and Accessories

Service and Repair

Replacement Parts

Owner's Manuals

Contact the Delivering Carrier to:

File a claim for loss or damage during shipment.

For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.

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