



OM-287504A

2020-05

Processes



MIG (GMAW) Welding

Flux Cored (FCAW) Welding

Description

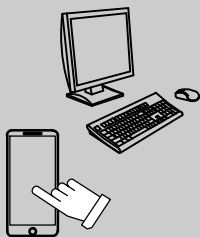
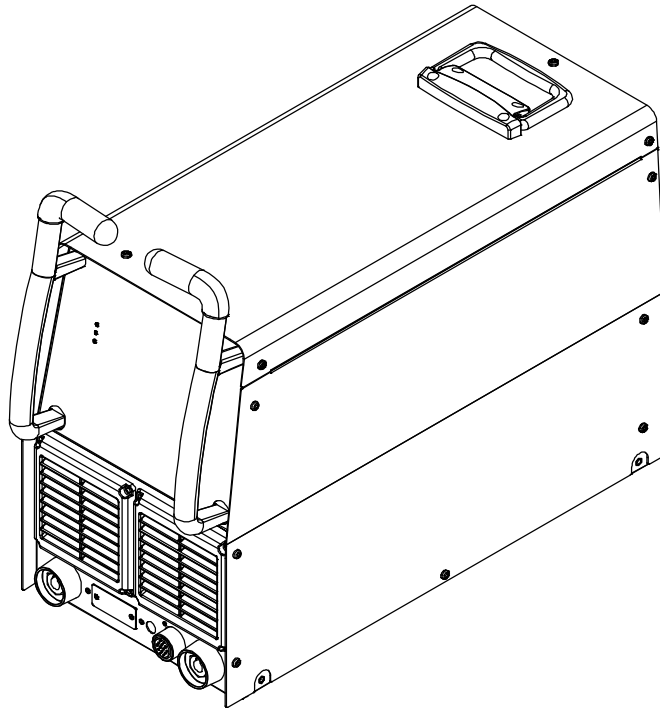


Arc Welding Power Source
Wire Feeder

MigMatic[®]

S400i/S400iP/S500i

CE



For product information,
Owner's Manual translations,
and more, visit

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, and our extensive service network is there to help fix the problem. Warranty and maintenance 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 Products B.V. Edisonstraat 10, 3261 LD Oud-Beijerland, Netherlands, 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 S400i	059015054
MIGMATIC S400iP	059015055
MIGMATIC S500i	059015056

Council Directives:

- 2014/35/EU Low Voltage
- 2014/30/EU 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 60974-10:2014+A1:2015 Arc Welding Equipment – Part 10: Electromagnetic Compatibility Requirements

EU Signatory:

Pieter Keultjes

November 4th, 2019

Date of Declaration

Equipment Technical Manager - EMEAR

956172370

EMF DATA SHEET FOR ARC WELDING POWER SOURCE



Product/Apparatus Identification

Product	Stock Number
MigMatic S500i	059015056
MigMatic S400iP	059015055
Migmatic S400i	059015054

Compliance Information Summary

Applicable regulation Directive 2014/35/EU

Reference limits Directive 2013/35/EU, Recommendation 1999/519/EC

Applicable standards IEC 62822-1:2016, IEC 62822-2:2016

Intended use for occupational use for use by laymen

Non-thermal effects need to be considered for workplace assessment YES NO

Thermal effects need to be considered for workplace assessment YES NO

Data is based on maximum power source capability (valid unless firmware/hardware is changed)

Data is based on worst case setting/program (only valid until setting options/welding programs are changed)

Data is based on multiple settings/programs (only valid until setting options/welding programs are changed)

Occupational exposure is below the Exposure Limit Values (ELVs) for health effects at the standardized configurations YES NO
(if NO, specific required minimum distances apply)

Occupational exposure is below the Exposure Limit Values (ELVs) for sensory effects at the standardized configurations n.a YES NO
(if applicable and NO, specific measures are needed)

Occupational exposure is below the Action Levels (ALs) at the standardized configurations n.a YES NO
(if applicable and NO, specific signage is needed)

EMF Data for Non-thermal Effects

Exposure Indices (EIs) and distances to welding circuit (for each operation mode, as applicable)

	Head		Trunk	Limb (hand)	Limb (thigh)
	Sensory Effects	Health Effects			
Standardized distance	10 cm	10 cm	10 cm	3 cm	3 cm
ELV EI @ standardized distance	0.08	0.06	0.09	0.05	0.11
Required minimum distance	1 cm	1 cm	1 cm	1 cm	1 cm

Distance where all occupational ELV Exposure Indices fall below 0.20 (20%) 2 cm

Distance where all general public ELV Exposure Indices fall below 1.00 (100%) 82 cm

Tested by: Joe Krueger Date tested: 2019-12-06

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SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

som 2020-02

 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.

 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 these hazards.

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 Principal Safety Standards listed in Section 1-5. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this equipment. A qualified person is defined as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project and has received safety training to recognize and avoid the hazards involved.



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 weld output in damp, wet, or confined spaces, 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 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 unit, disconnect input power, and discharge input capacitors according to instructions in Manual 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.
- Ventilate the work 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 watchperson 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.

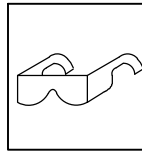


WELDING can cause fire or explosion.

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 cut or weld on tire rims or wheels. Tires can explode if heated. Repaired rims and wheels can fail. See OSHA 29 CFR 1910.177 listed in Safety Standards.
- 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 can 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.



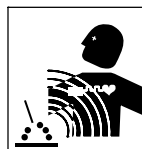
FLYING METAL or DIRT can injure eyes.

- 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.



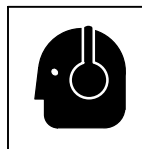
BUILDUP OF GAS can injure or kill.

- 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.

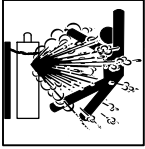
- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.



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 proper equipment, correct procedures, and sufficient number of persons to lift, move, and transport 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 Hazards For Installation, Operation, And Maintenance



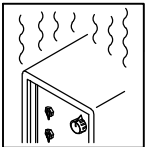
FIRE OR EXPLOSION hazard.

- 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.



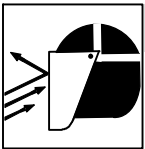
FALLING EQUIPMENT can injure.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use correct procedures and 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.



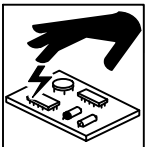
OVERUSE can cause OVERHEATING

- 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.



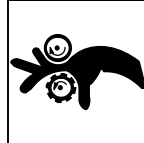
FLYING SPARKS can injure.

- 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.



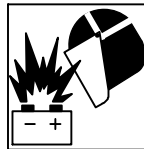
MOVING PARTS can injure.

- 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.



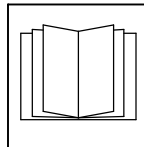
BATTERY EXPLOSION can injure.

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



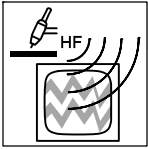
MOVING PARTS can injure.

- 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.



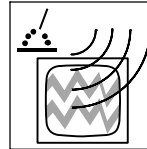
READ INSTRUCTIONS.

- 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 installation, 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

⚠ WARNING: This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm.

For more information, go to www.P65Warnings.ca.gov.

1-5. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: www.aws.org.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1 from American National Standards Institute. Website: www.ansi.org.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1 from Global Engineering Documents. 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. Website: www.global.ihs.com.

National Electrical Code, NFPA Standard 70 from National Fire Protection Association. Website: www.nfpa.org and www.sparky.org.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: www.csagroup.org.

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B from National Fire Protection Association. Website: www.nfpa.org.

OSHA *Occupational Safety and Health Standards for General Industry*, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: www.osha.gov.

OSHA *Important Note Regarding the ACGIH TLV, Policy Statement on the Uses of TLVs and BEIs*. Website: www.osha.gov.

Applications Manual for the Revised NIOSH Lifting Equation from the National Institute for Occupational Safety and Health (NIOSH). 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 can 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.




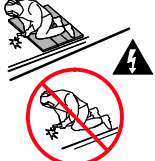
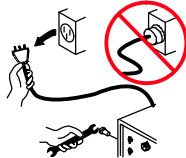

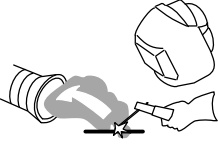
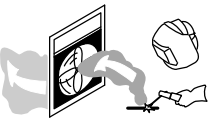
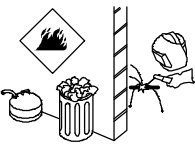

About Implanted Medical Devices:



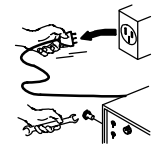

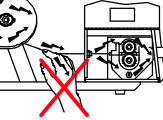
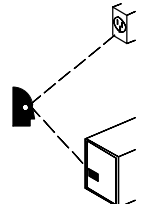
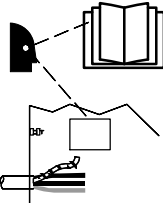
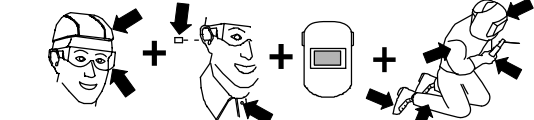
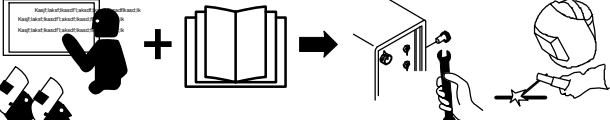
Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

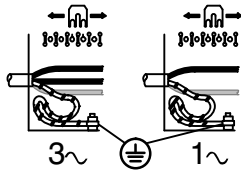
SECTION 2 – DEFINITIONS

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 2017-04</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 2017-04</p>
	<p>Protect yourself from electric shock by insulating yourself from work and ground.</p> <p style="text-align: right;">Safe3 2017-04</p>
	<p>Disconnect input plug or power before working on machine.</p> <p style="text-align: right;">Safe5 2017-04</p>
	<p>Keep your head out of the fumes.</p> <p style="text-align: right;">Safe6 2017-04</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 2017-04</p>
	<p>Do not remove or paint over (cover) the label.</p> <p style="text-align: right;">Safe20 2017-04</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 2017-04</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



< 10°

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

Safe53 2017-04

2-2. Miscellaneous Symbols And Definitions

A	Amperage
V	Volts
~	Alternating Current (AC)
==	Direct Current (DC)
	Remote
	On
○	Off
	Protective Earth (Ground)
	Line Connection
3~	Three Phase

	Gas Metal Arc Welding (GMAW)
	Tungsten Inert Gas (TIG) Welding
	MMA Welding
I_{1max}	Rated Maximum Supply Current
I_{1eff}	Maximum Effective Supply Current
U₂	Conventional Load Voltage
U₁	Primary Voltage
I₂	Rated Welding Current
	Circuit Breaker
	Three Phase Static Frequency Converter Transformer-Rectifier

	Output
1~	Single Phase
	Flat Characteristic (Constant Voltage)
X	Duty Cycle
%	Percent
IP	Degree Of Protection
+	Positive
-	Negative
	Voltage Input
	Temperature Indication

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. Software Licensing Agreement

The End User License Agreement and any third-party notices and terms and conditions pertaining to third-party software can be found at <https://www.millerwelds.com/eula> and are incorporated by reference herein.

3-3. Information About Default Weld Parameters And Settings

NOTICE – Each welding application is unique. Although certain Miller Electric products are designed to determine and default to certain typical welding parameters and settings based upon specific and relatively limited application variables input by the end user, such default settings are for reference purposes only; and final weld results can be affected by other variables and application-specific circumstances. The appropriateness of all parameters and settings should be evaluated and modified by the end user as necessary based upon application-specific requirements. The end user is solely responsible for selection and coordination of appropriate equipment, adoption or adjustment of default weld parameters and settings, and ultimate quality and durability of all resultant welds. Miller Electric expressly disclaims any and all implied warranties including any implied warranty of fitness for a particular purpose.

3-4. Specifications

☞ Do not use information in unit specifications table to determine electrical service requirements. See Sections 4-12 and 4-13 for information on connecting input power.

☞ This equipment will deliver rated output at an ambient air temperature up to 104 °F (40 °C).

Model	Rated Output			Max. Open Circuit Voltage	Amperage Range DC	KVA	KW
	100%	80%	50%				
S400i 400 VAC 3-Phase 50/60 Hz	350 A 31.5 V	400 A 34 V	–	70.0 V	15-400 A	17.92	15.61
S400iP 400 VAC 3-Phase 50/60 Hz	350 A 31.5 V	400 A 34 V	–	70.0 V	15-400 A	17.92	15.61
S500i 400 VAC 3-Phase 50/60 Hz	400 A 34 V	–	500 A 39 V	70.0 V	15-500 A	25.09	22.73

Wire feed speed range: 1.4 mpm to 20 mpm.

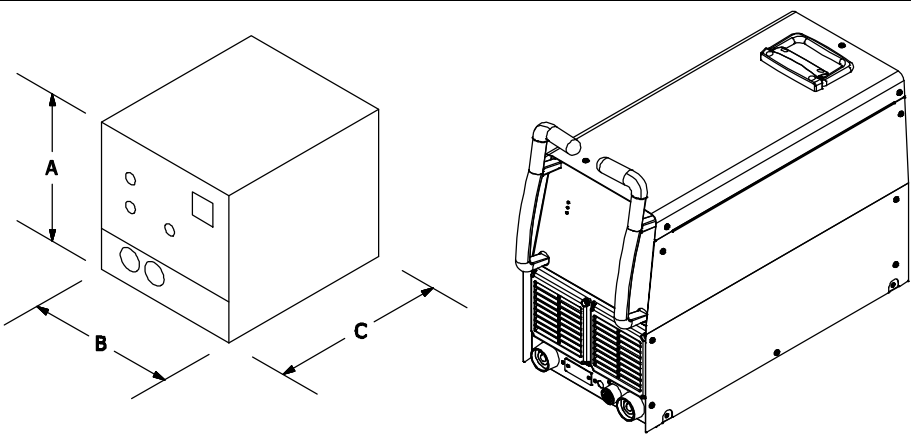
☞ See section 3-7 for duty cycle rating.

3-5. Dimensions And Weight

☞ Overall dimensions (A, B, and C) include lifting eye, handles, hardware, etc.

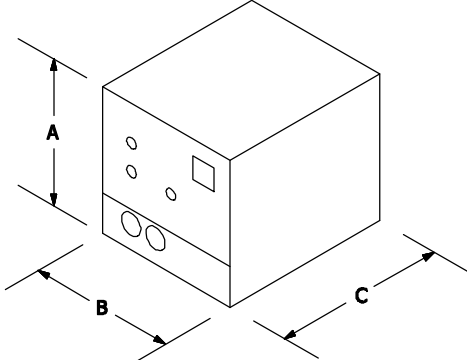
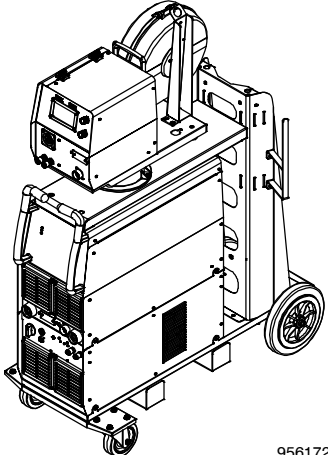
A. Welding Power Source

Dimensions	
A	20.9 in. (530 mm)
B	12 in. (305 mm)
C	28.7 in. (730 mm)
Weight	
Net - 116.8 lb (53 kg) Ship - 123.5 lb (56 kg)	



956172374_2-A

B. Welding Power Source With Cart And Cooler

Dimensions			
A	58.5 in. (1485 mm)		
B	20.9 in. (530 mm)		
C	43.9 in. (1115 mm)		
Weight			
Net - 280 lb (127 kg)			956172375_3-A

3-6. Environmental Specifications

A. IP Rating

IP Rating
IP23S
This equipment is designed for outdoor use. It may be stored, but is not intended to be used outside during precipitation unless sheltered.
<small>IP23S 2014-06</small>

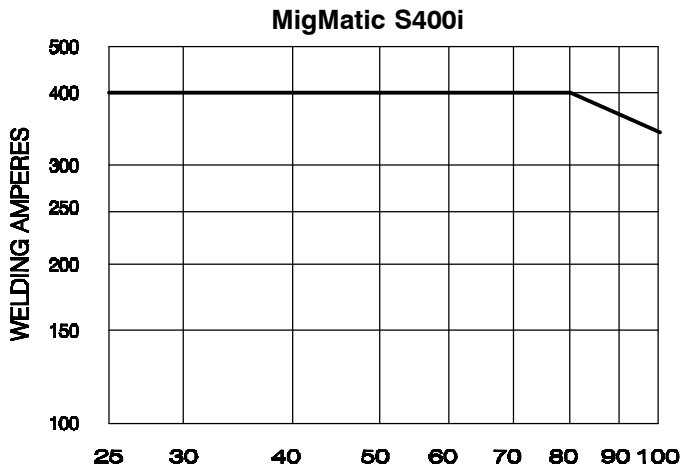
B. Temperature Specifications

Operating Temperature Range*	Storage/Transportation Temperature Range
-10 to 40°C (14 to 104°F)	-20 to 55°C (-4 to 131°F)
*Output is derated at temperatures above 40°C (104°F).	<small>Temp_2016-07</small>

C. Information On Electromagnetic Compatibility (EMC)

<p>⚠ 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.</p> <p>This equipment does not comply with IEC 61000-3-12. If it is connected to a public low voltage system, 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 equipment can be connected. IEC/TS 61000-3-4 can be used to guide parties concerned by the installation of arc welding equipment with an input current greater than 16 A in a low voltage network.</p>	<small>ce-emc 2 2014-07</small>
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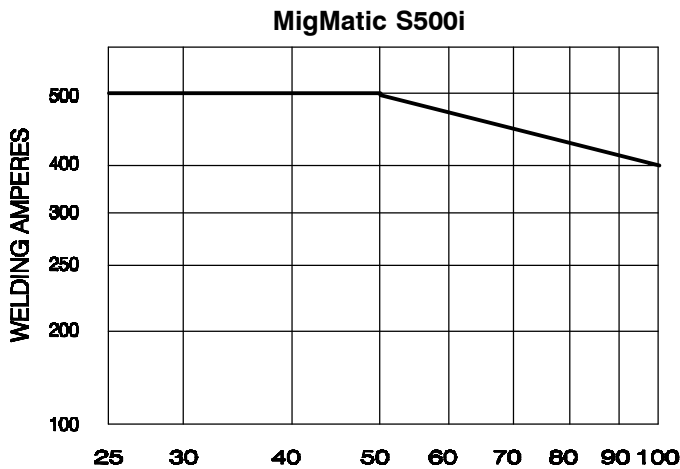
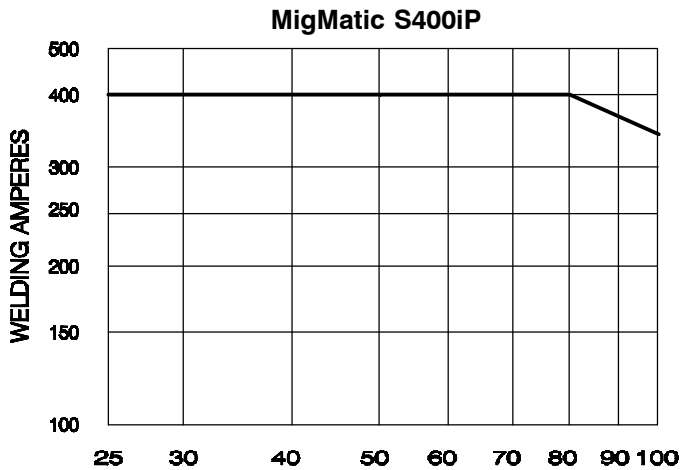
3-7. Duty Cycle And Overheating



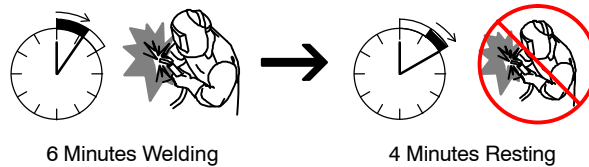
Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

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.

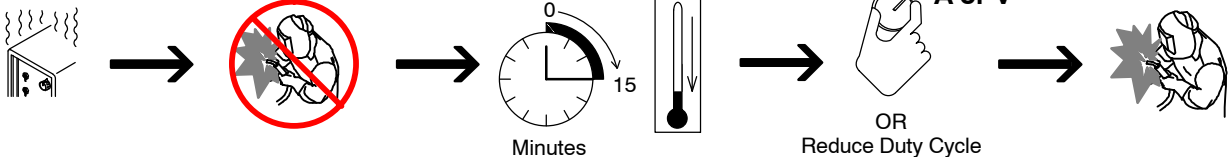
NOTICE – Exceeding duty cycle can damage unit and void warranty.



60% Duty Cycle

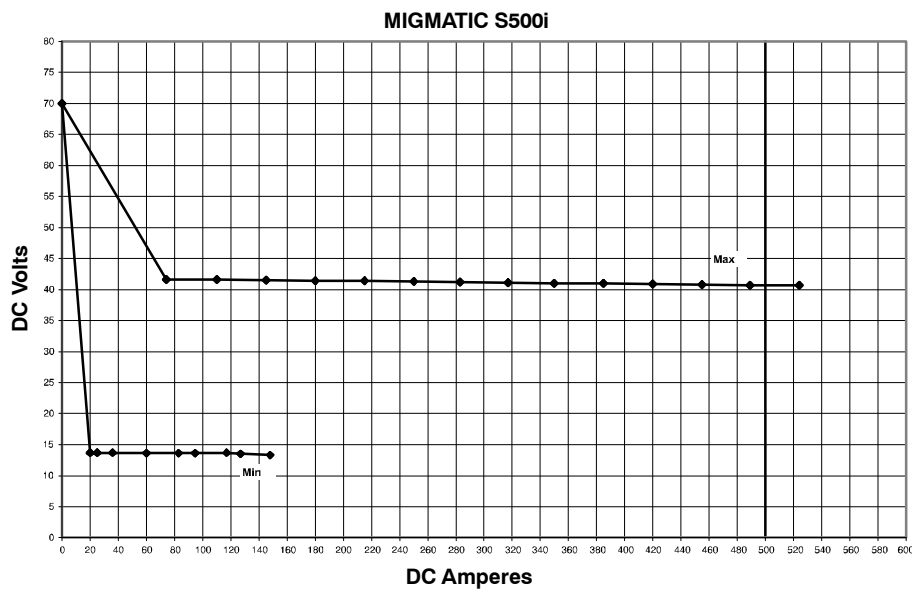
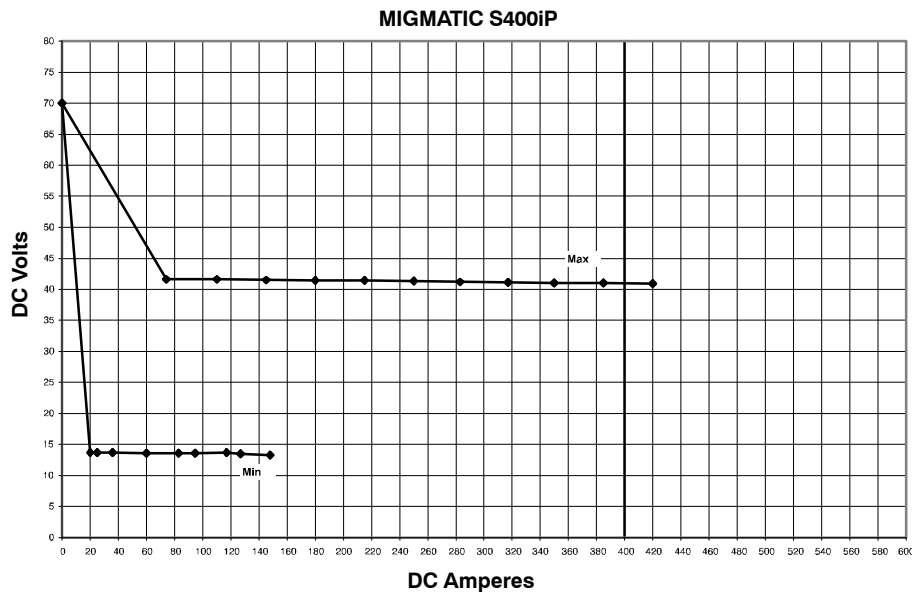
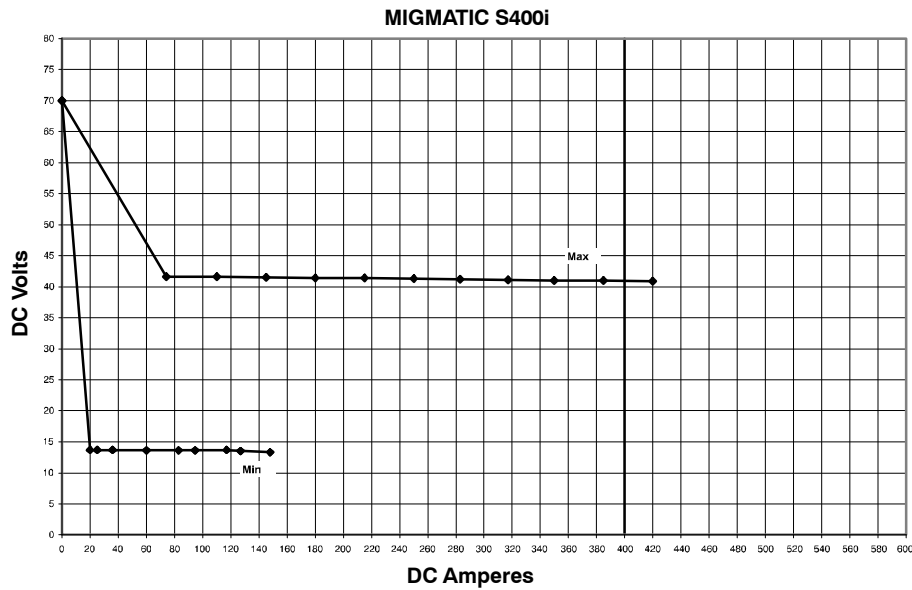


Overheating



3-8. 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.



4-2. Selecting Cable Sizes*

NOTICE – The Total Cable Length in Weld Circuit (see table below) is the combined length of both weld cables. For example, if the power source is 30 m (100 ft) from the workpiece, the total cable length in the weld circuit is 60 m (2 cables x 30 m). Use the 60 m (200 ft) column to determine cable size.

Welding Amperes	Weld Cable Size** and Total Cable (Copper) Length in Weld Circuit Not Exceeding***							
	30 m (100 ft) or Less		45 m (150 ft)	60 m (200 ft)	70 m (250 ft)	90 m (300 ft)	105 m (350 ft)	120 m (400 ft)
	10 – 60% Duty Cycle mm ² (AWG)	60 – 100% Duty Cycle mm ² (AWG)	10 – 100% Duty Cycle mm ² (AWG)					
100	20 (4)	20 (4)	20 (4)	30 (3)	35 (2)	50 (1)	60 (1/0)	60 (1/0)
150	30 (3)	30 (3)	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	95 (3/0)
200	30 (3)	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	120 (4/0)
250	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x70 (2x2/0)
300	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x95 (2x3/0)	2x95 (2x3/0)
350	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x95 (2x3/0)	2x95 (2x3/0)	2x120 (2x4/0)
400	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x95 (2x3/0)	2x120 (2x4/0)	2x120 (2x4/0)
500	70 (2/0)	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x95 (2x3/0)	2x120 (2x4/0)	3x95 (3x3/0)	3x95 (3x3/0)
600	95 (3/0)	120 (4/0)	2x70 (2x2/0)	2x95 (2x3/0)	2x120 (2x4/0)	3x95 (3x3/0)	3x120 (3x4/0)	3x120 (3x4/0)

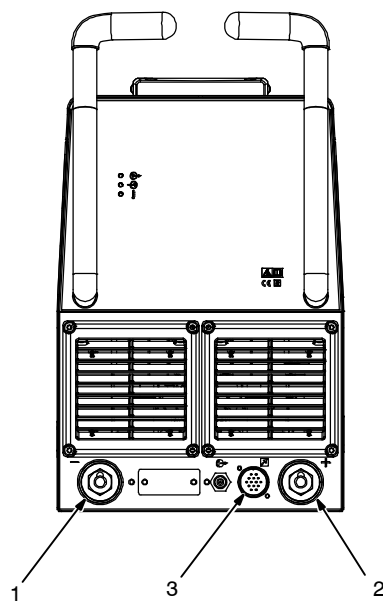
* This chart is a general guideline and may not suit all applications. If cable overheats, use next size larger cable.

**Weld cable size is based on either a 4 volts or less drop or a current density of at least 300 circular mils per ampere.

***For distances longer than those shown in this guide, see AWS Fact Sheet No. 39, Welding Cables, available from the American Welding Society at <http://www.aws.org>.

Milan Ref. S-0007-M 2017-08

4-3. Weld Output Terminals



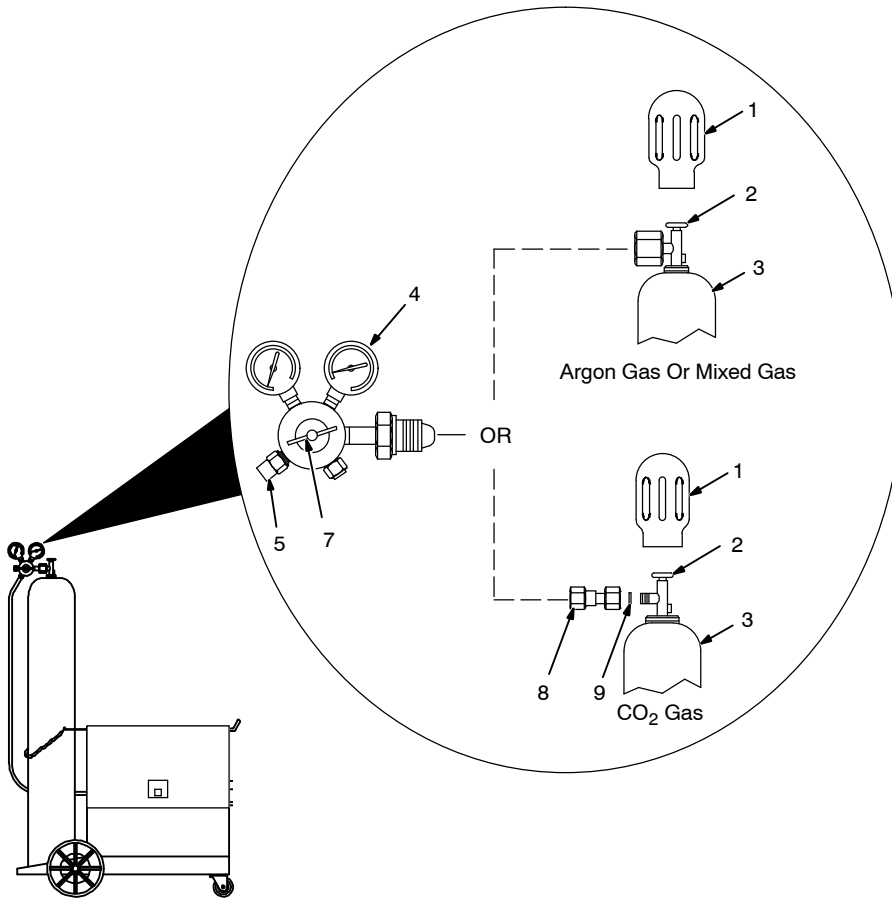
⚠ Turn off power before connecting to weld output terminals.

⚠ Do not use worn, damaged, undersized, or repaired cables.

- 1 Electrode Weld Output Terminal (-) Negative Weld Output Terminal
- 2 Work Weld Output Terminal (+) Positive Weld Output Terminal
- 3 Remote 14 Receptacle

Ref. 956172374_4_A

4-4. Installing Gas Supply



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.

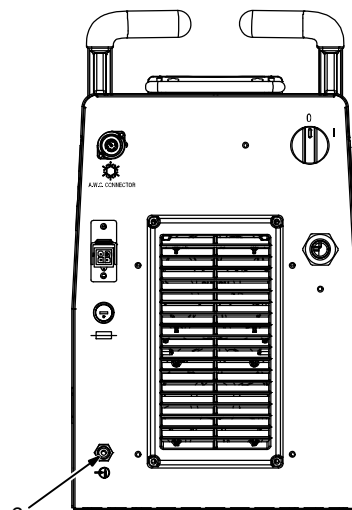
- 7 Flow Adjust

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

- 8 CO₂ Adapter (Customer Supplied)

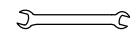
- 9 O-Ring (Customer Supplied)

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



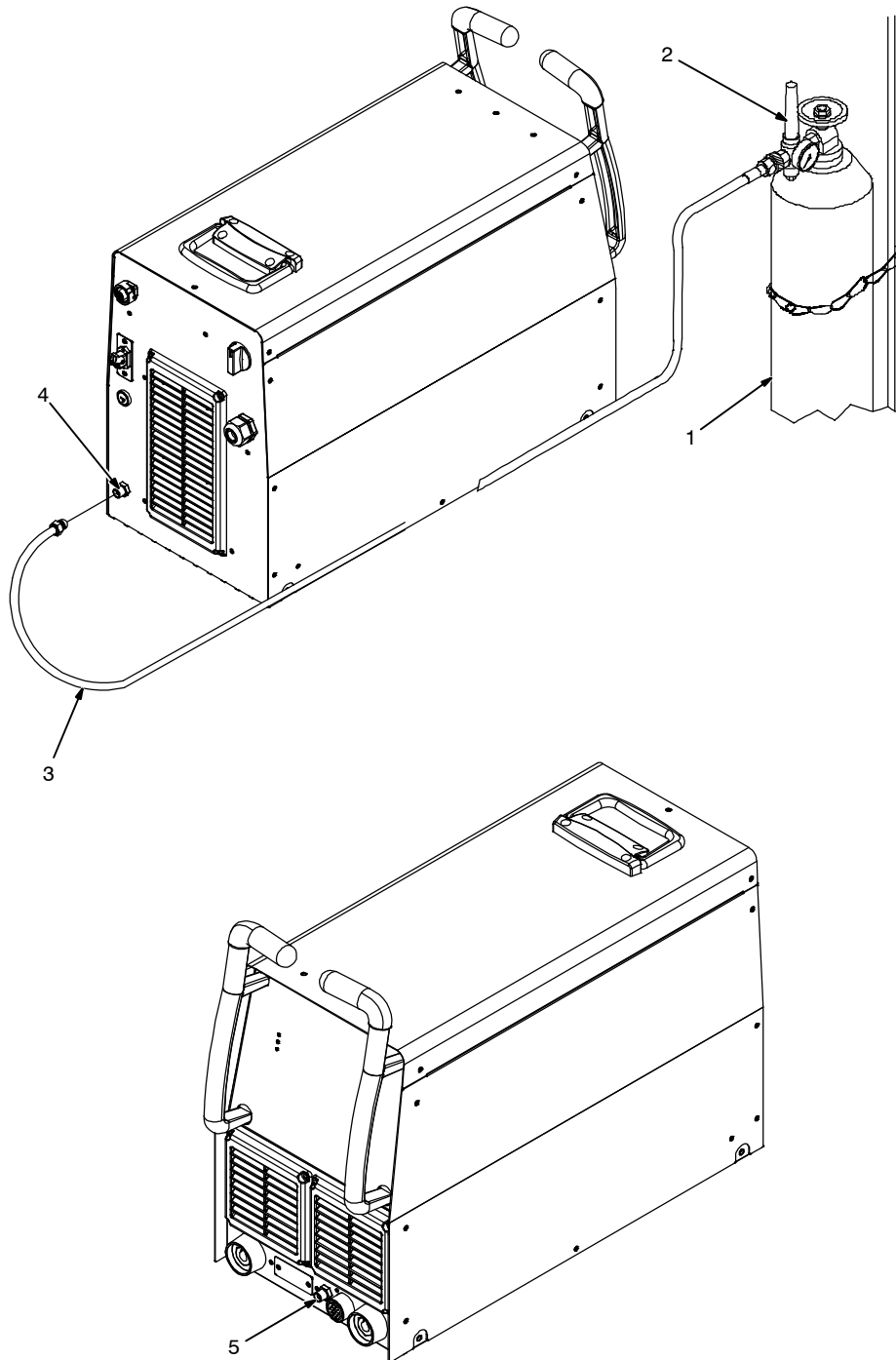
Rear Panel

Tools Needed:



19/32 in (15 mm)

4-5. Shielding Gas Connection



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

1 Cylinder

2 Regulator/Flowmeter

Install so face is vertical.

3 Gas Hose Connection

Fitting has 1/4 right-hand BSP threads. Obtain and install gas hose.

4 Gas In Fitting

5 Gas Out Fitting

The Gas In and Gas Out fittings have 1/4 right-hand BSP male threads. Obtain proper size, type, and length hose and make connections as follows:

Connect hose from shielding gas supply regulator/flowmeter to Gas In fitting.

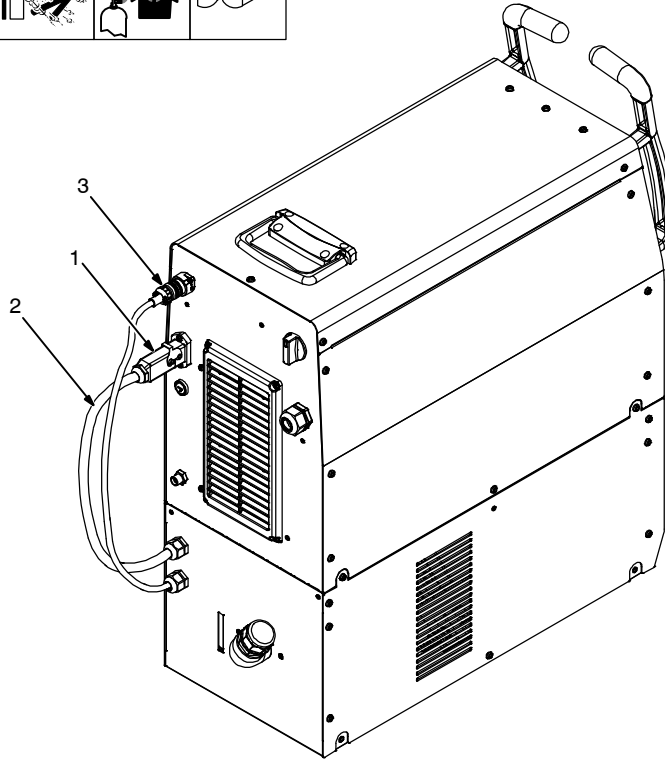
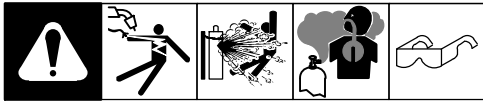
Connect hose coupler to torch. Connect one end of gas hose to hose coupler. Connect remaining end of gas hose to Gas Out fitting.

Tools Needed:



17 mm

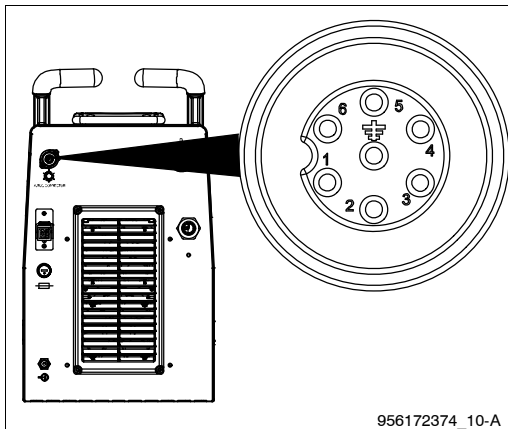
4-6. Cooler Connections




- 1 400 volts AC, 1 Amp Receptacle
 - 2 400 volts AC Cord
- Provides 400 volts AC to power cooler.
- 3 7-Pin Receptacle
- Provides signal to activate the cooler, checks the presence of the liquid flow, and checks the presence of the cooler.

956172374_6-A

4-7. 7-Pin Receptacle Information

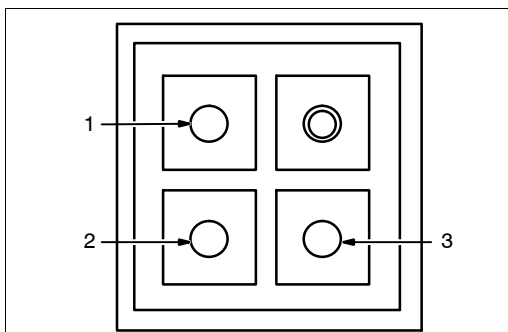


956172374_10-A

 REMOTE 7-PIN	Socket*	Socket Information
AWC CONTROL	1	Common
	2	Automatic Water Cooler Control
	3	Not Used
	4	Automatic Water Cooler Protection
	5	Common
	6	Not Used
	GND	Not Used

*The remaining sockets are not used.

4-8. Power Supply Receptacle Information




CONNECTOR ILME 4 WAY	Socket*	Socket Information
AWC SUPPLY	1	Power Supply 400 volts AC
	3	
	2	Not Used
	4	Earth Lead

*The remaining sockets are not used.

4-9. Wire Feeder Connections



- 1 Gas Cylinder (See Section 4-5)
- 2 Gas Fitting (See Section 4-5)
- 3 Wire Feeder

 *Welding power source can only be used with Mig Matic Feed wire feeder.*

- 4 14-Pin Cord (See Section 4-10)

Provides 42 volts AC to power wire feeder and signal communication to feeder.

- 5 Cable, Positive

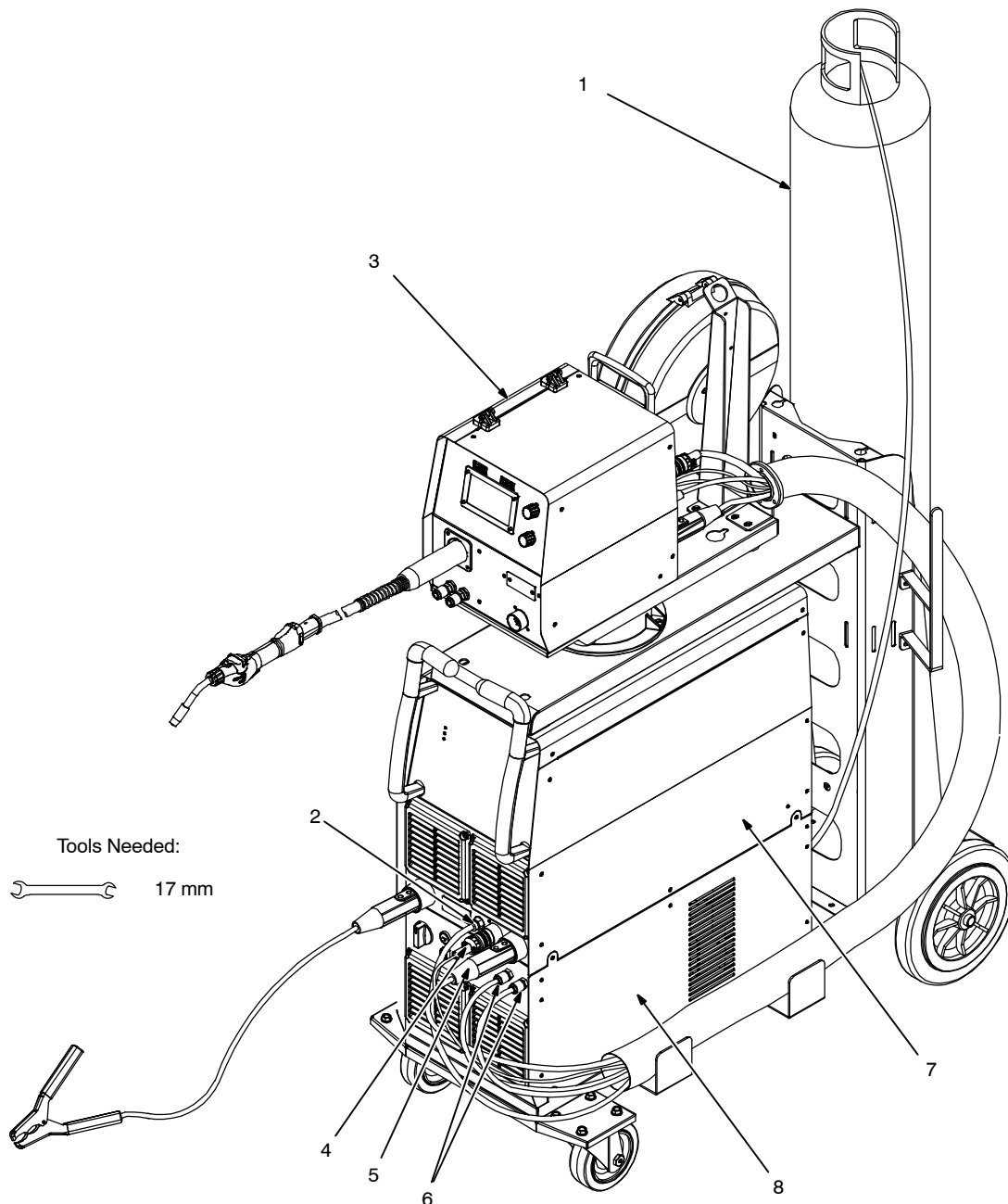
Connect to weld output terminal for MIG welding located on the rear panel of the welding power source.

- 6 Water In/Out Connections

Connect to water in/out quick connectors located on the rear panel of the cooler.

- 7 Welding Power Source

- 8 Cooler



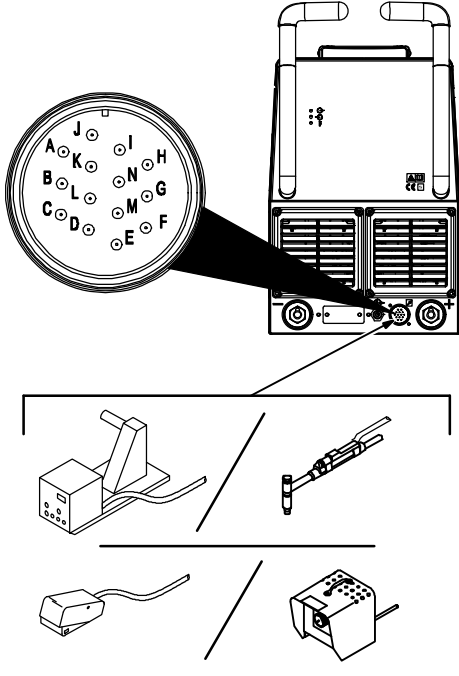

Tools Needed:



17 mm

4-10. Remote 14-Pin Receptacle Information

☞ 14-Pin front panel receptacle "X Rotation".

 <p style="text-align: center;">Ref. 956172374_13_A</p>	 REMOTE 14	Socket	Socket Information
	Power Supply	K	+42 volts AC output remote control
		L	+42 volts AC output remote control
		M	0 volts AC output remote control
		N	0 volts AC output remote control
	Communication	G	Chassis common
		A	Data reception serial gate
		B	Common communication serial gate
		C	Data transmissions serial gate
		D	Data transmissions serial gate speed motor
		E	Data reception serial gate speed motor
		H	Positive connection welding voltage
	I	Negative connection welding voltage	
	*The remaining sockets are not used.		

Notes

4-11. MIG Connections



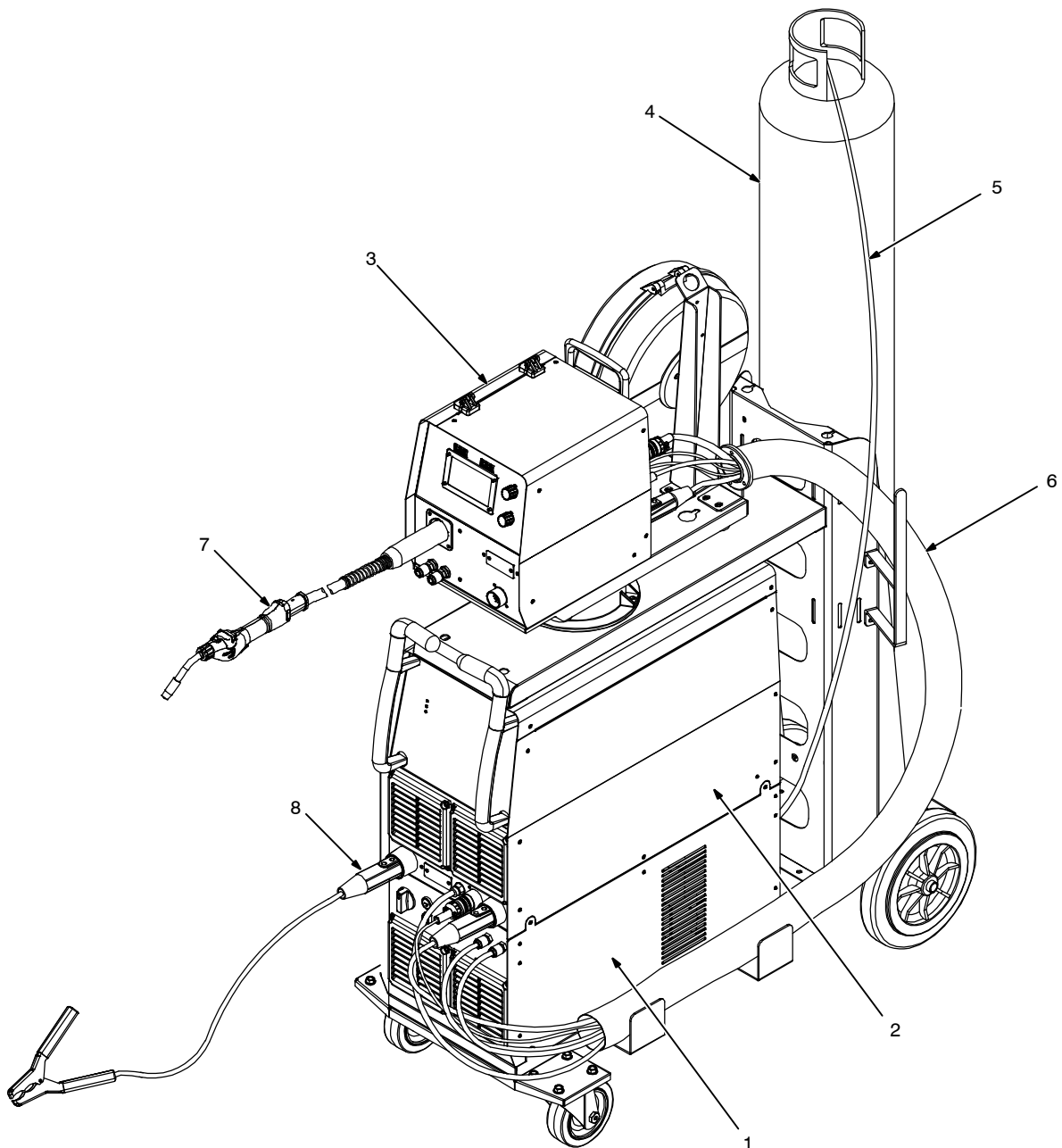
- 1 Cooler
 - 2 Welding Power Source
 - 3 Wire Feeder
 - 4 Gas Cylinder
 - 5 Gas Hose
 - 6 Wire Feeder Cable
- See Section 4-9.

7 Welding Gun

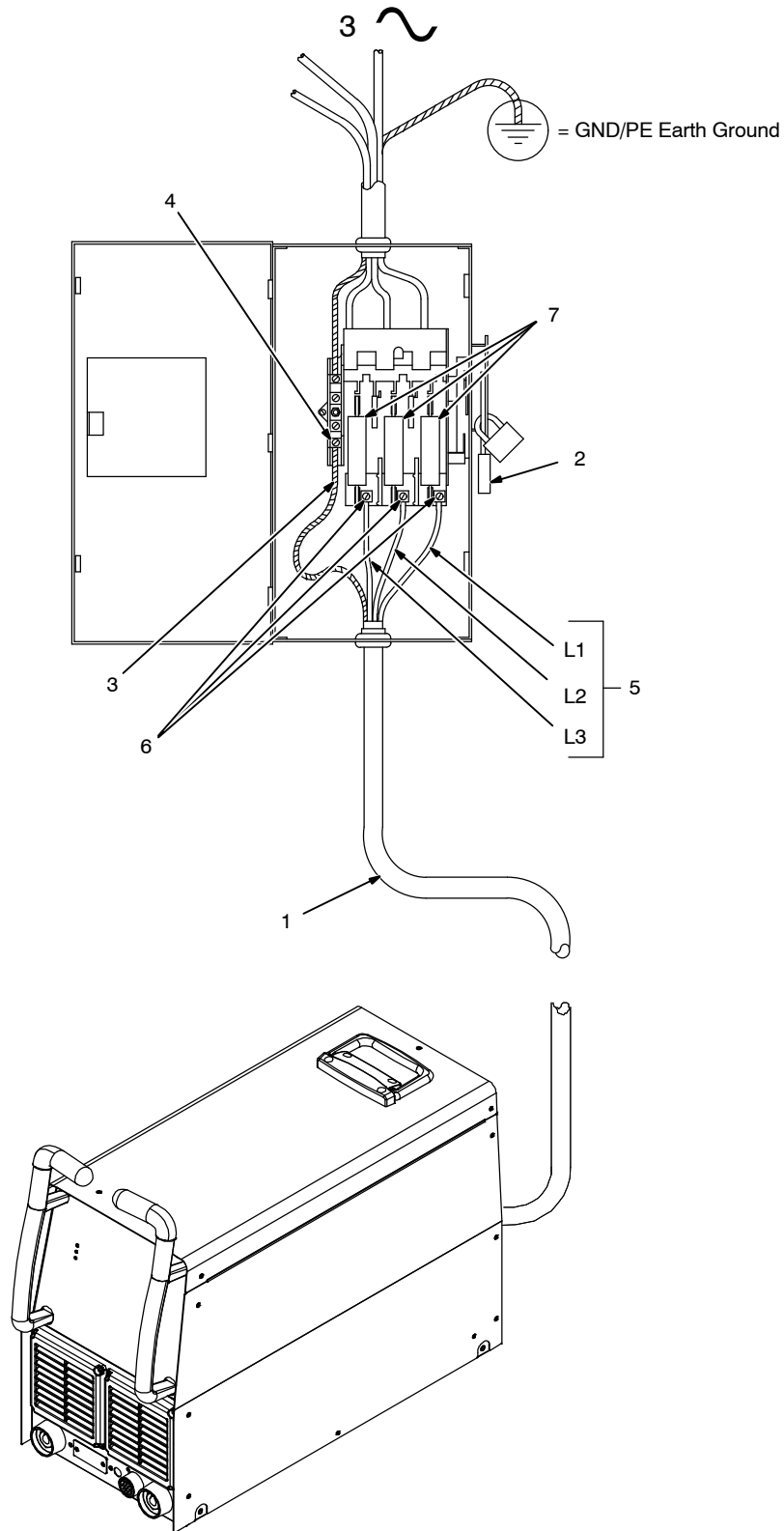
Connect to welding torch connector in wire feeder.

8 Work Lead

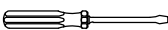
Connect work lead to negative weld output terminal.



4-13. Connecting 3-Phase Input Power

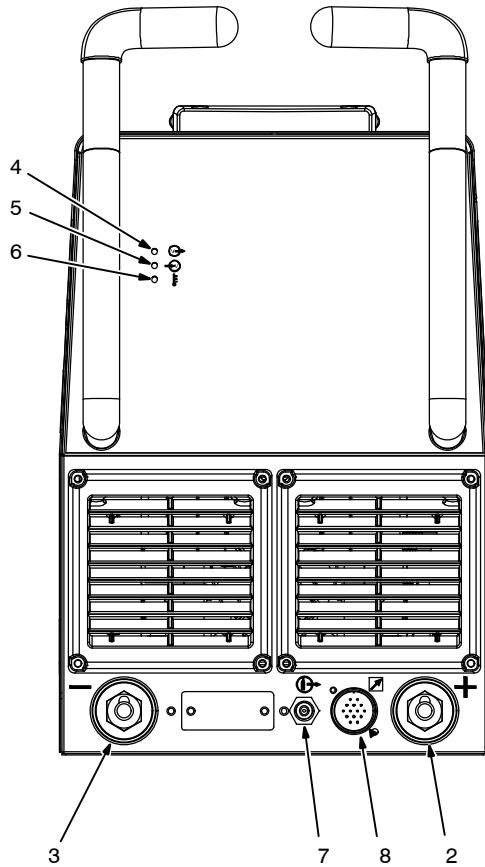
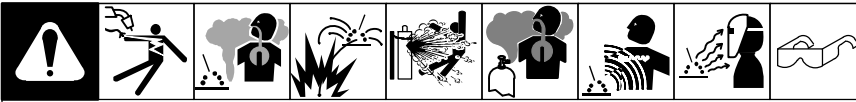


Tools Needed:

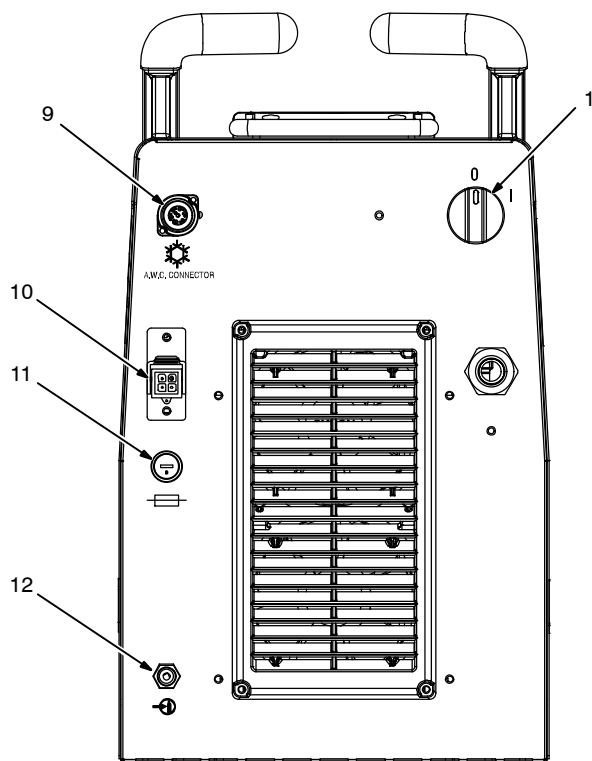


SECTION 5 – OPERATION

5-1. Front And Rear Panel Controls



Front of Machine



Back of Machine

- 1 Power Switch S1
Use switch to turn power on and off.
- 2 Positive Weld Output Terminal
- 3 Negative Weld Output Terminal
- 4 Weld Output Indicator Light
LED illuminates when output power is on.
- 5 Power Indicator Light

- 6 High Temperature Light
Light comes on if unit overheats. Welding can resume when unit has cooled (see Section 5-2).
- 7 Gas Out 1/4 BSP Fitting
- 8 14-Pin Panel Receptacle (see Section 4-10).

- 9 7-Pin Panel Receptacle (see Section 4-7).
- 10 400 volts AC Cooler Supply Power Receptacle (see Section 4-6).
- 11 2A Fuse
Protects wire feeder aux transformer from overload.
- 12 Gas In 1/4 BSP Fitting

SECTION 6 – MAINTENANCE & TROUBLESHOOTING

6-1. Routine Maintenance

				⚠ Disconnect power before maintaining.		Maintain more often during severe conditions.
	✓ = Check * To be done by Factory Authorized Service Agent	◇ = Change	● = Clean	Δ = Repair	☆ = Replace	
Every 3 Months	 ✓☆:Labels	 ✓Δ☆Repair Or Replace Cracked Cables	 ☆ Replace Cracked Torch Body			
Every 3 Months		 ✓Δ☆:Cables And Cords				
Every 3 Months		 ✓Δ●:Clean And Tighten Weld Connections				
Every 6 Months			 ●:Blow Out Inside			

6-2. Blowing Out Inside Of Unit

			⚠ Do not remove case when blowing out inside of unit. To blow out unit, direct airflow through front and back louvers as shown.

SECTION 7 – ELECTRICAL DIAGRAMS

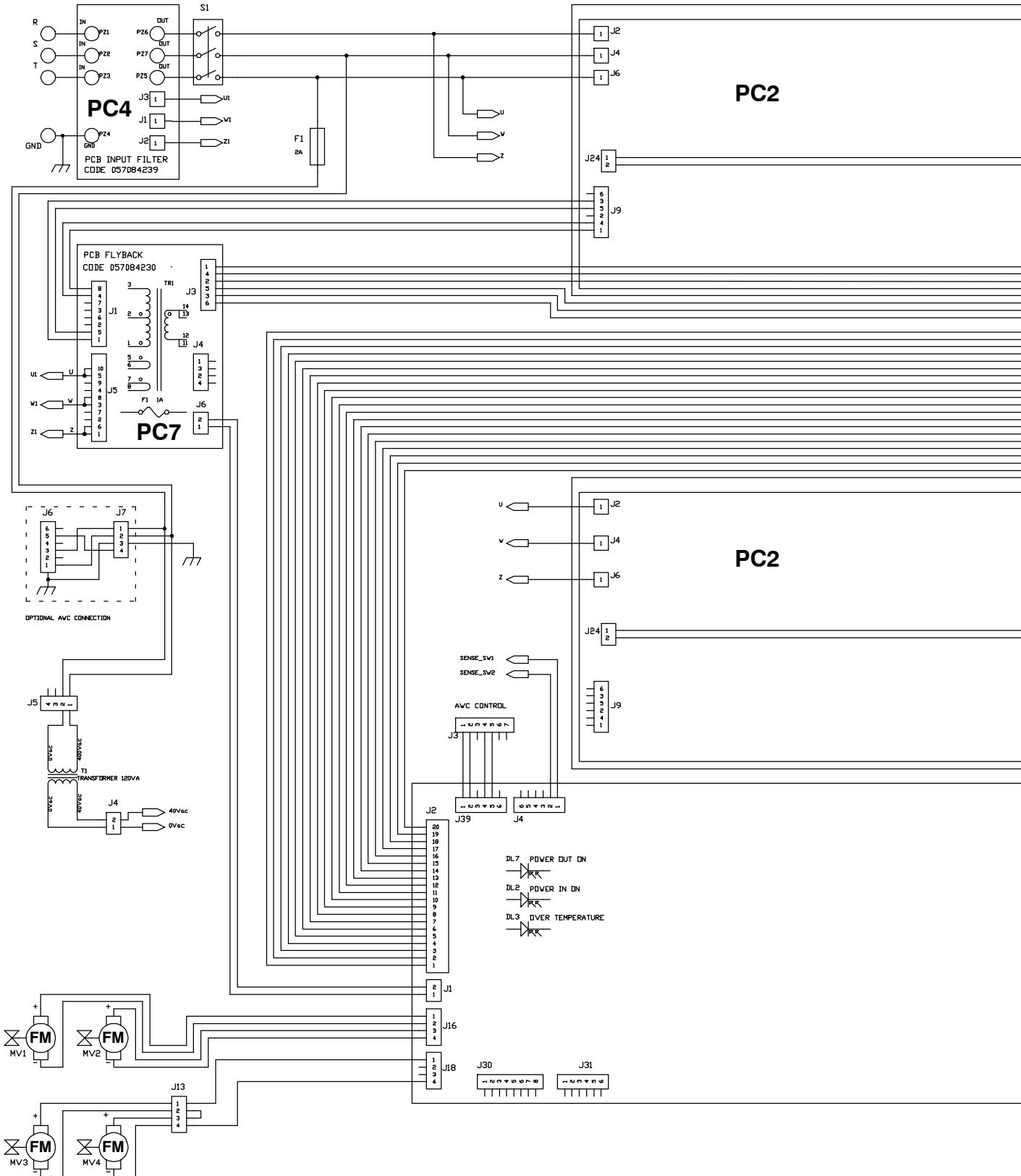
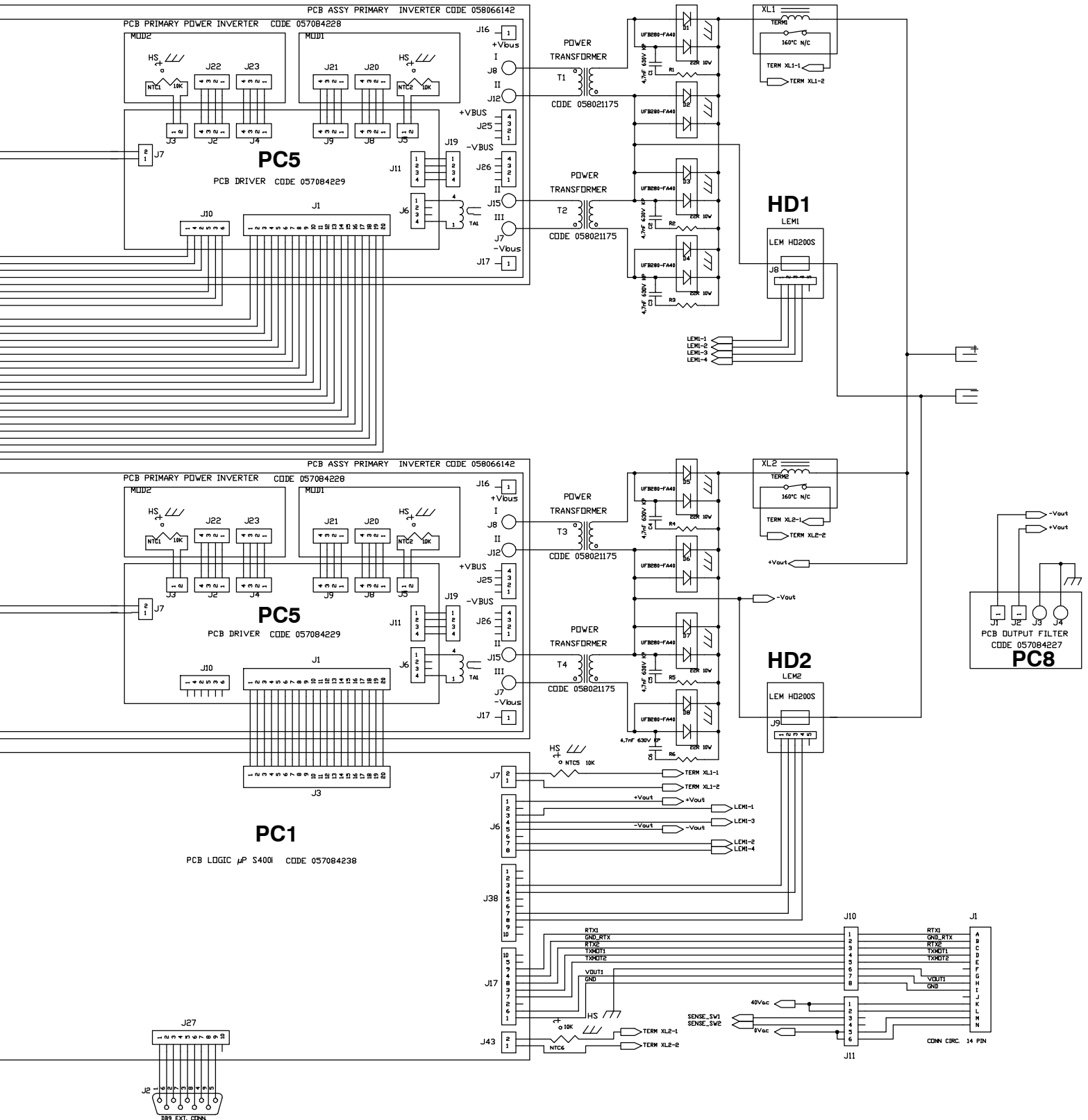



Figure 7-1. Circuit Diagram for Migmatic S400i



 WARNING ELECTRIC SHOCK HAZARD	<ul style="list-style-type: none"> 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.
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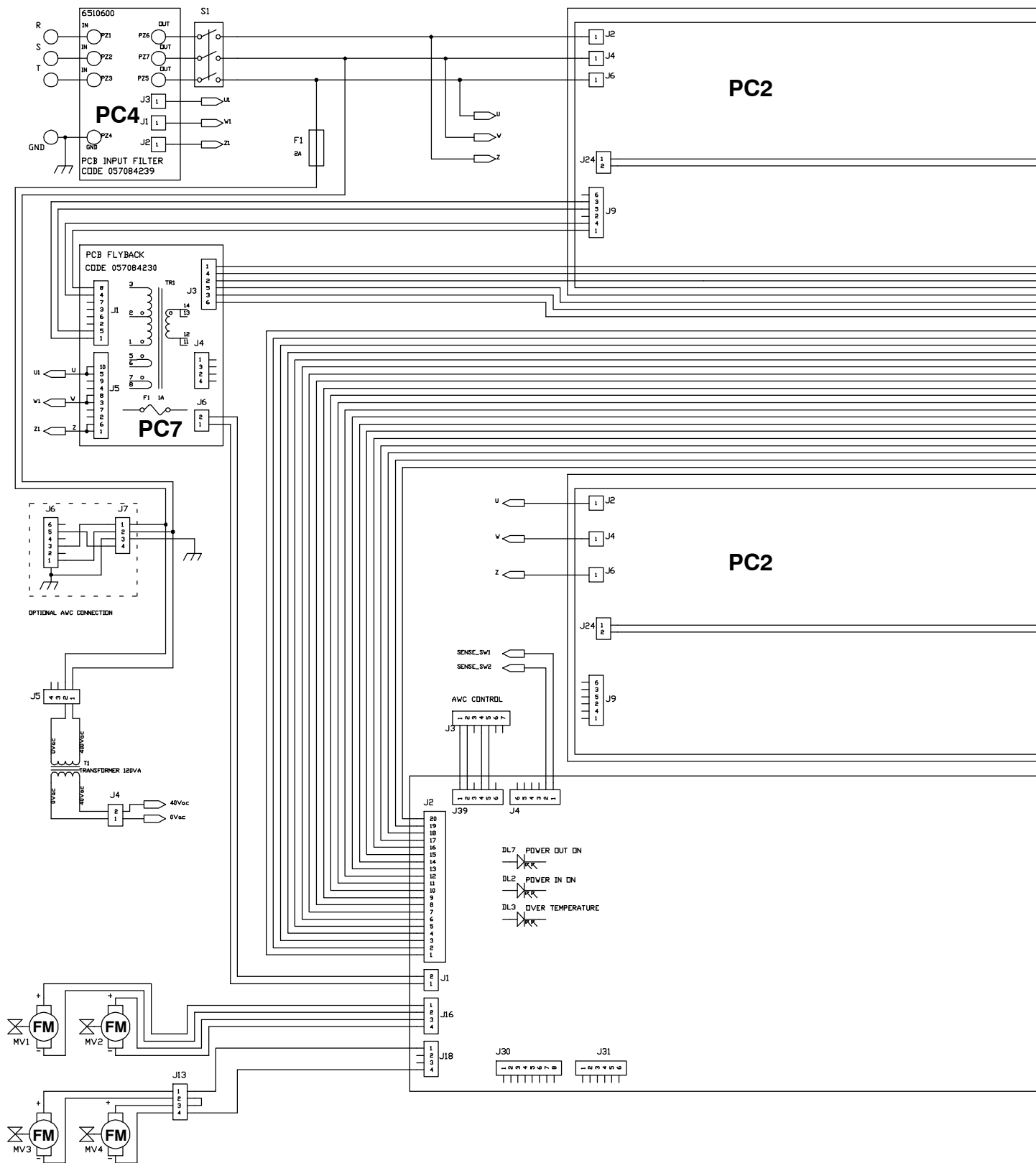
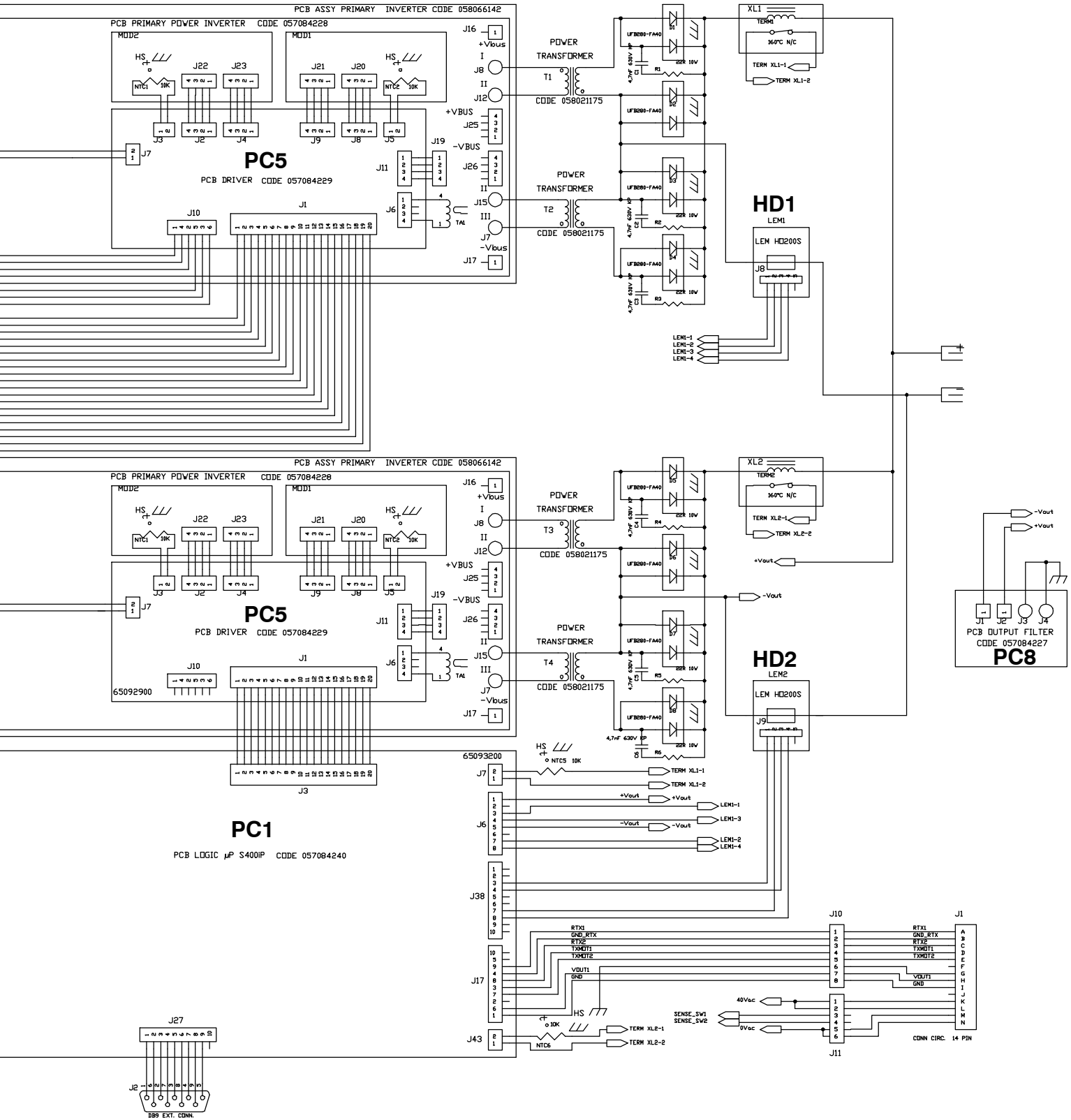



Figure 7-2. Circuit Diagram for Migmatic S400iP



	WARNING	<ul style="list-style-type: none"> 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.
	ELECTRIC SHOCK HAZARD	

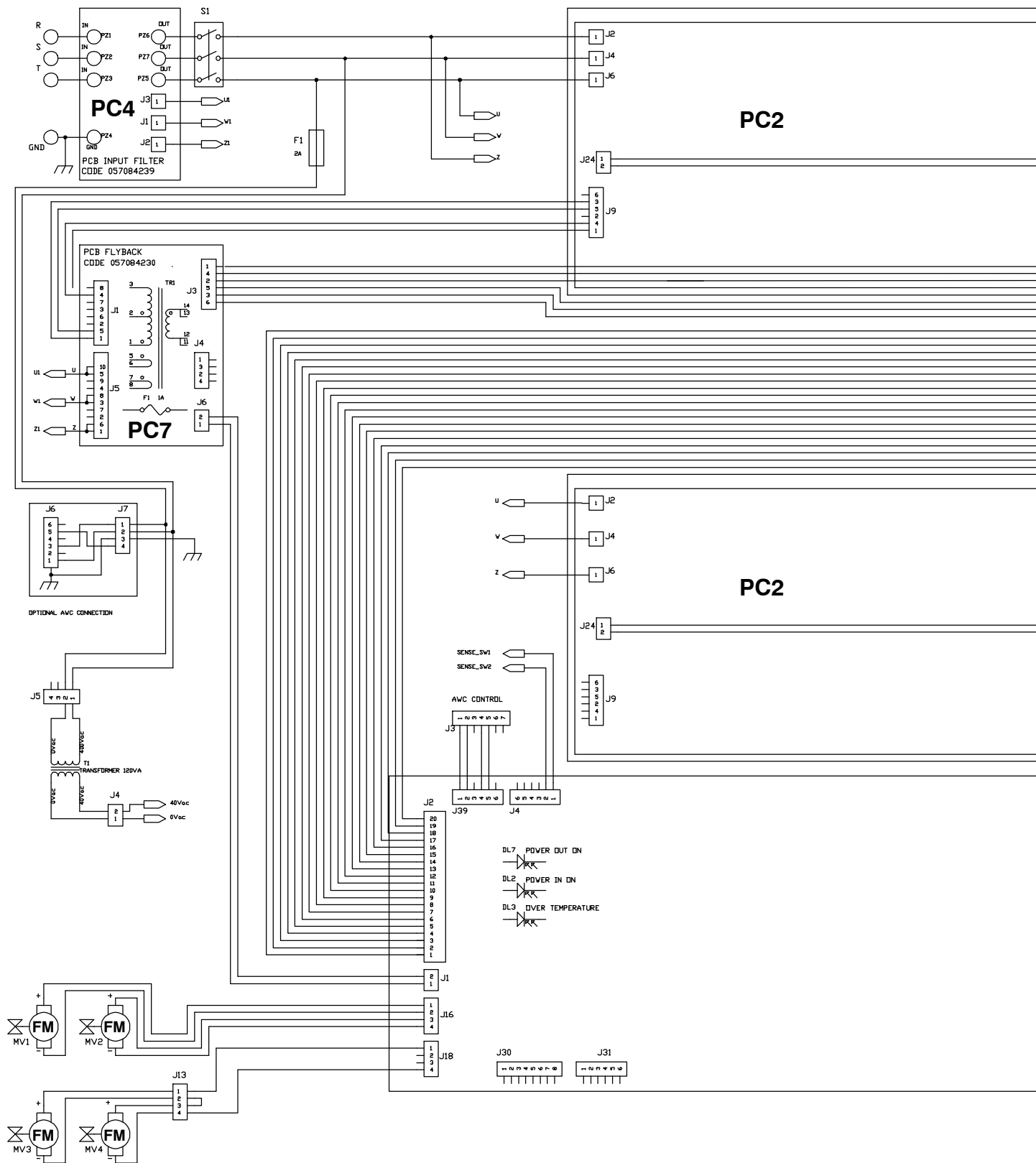
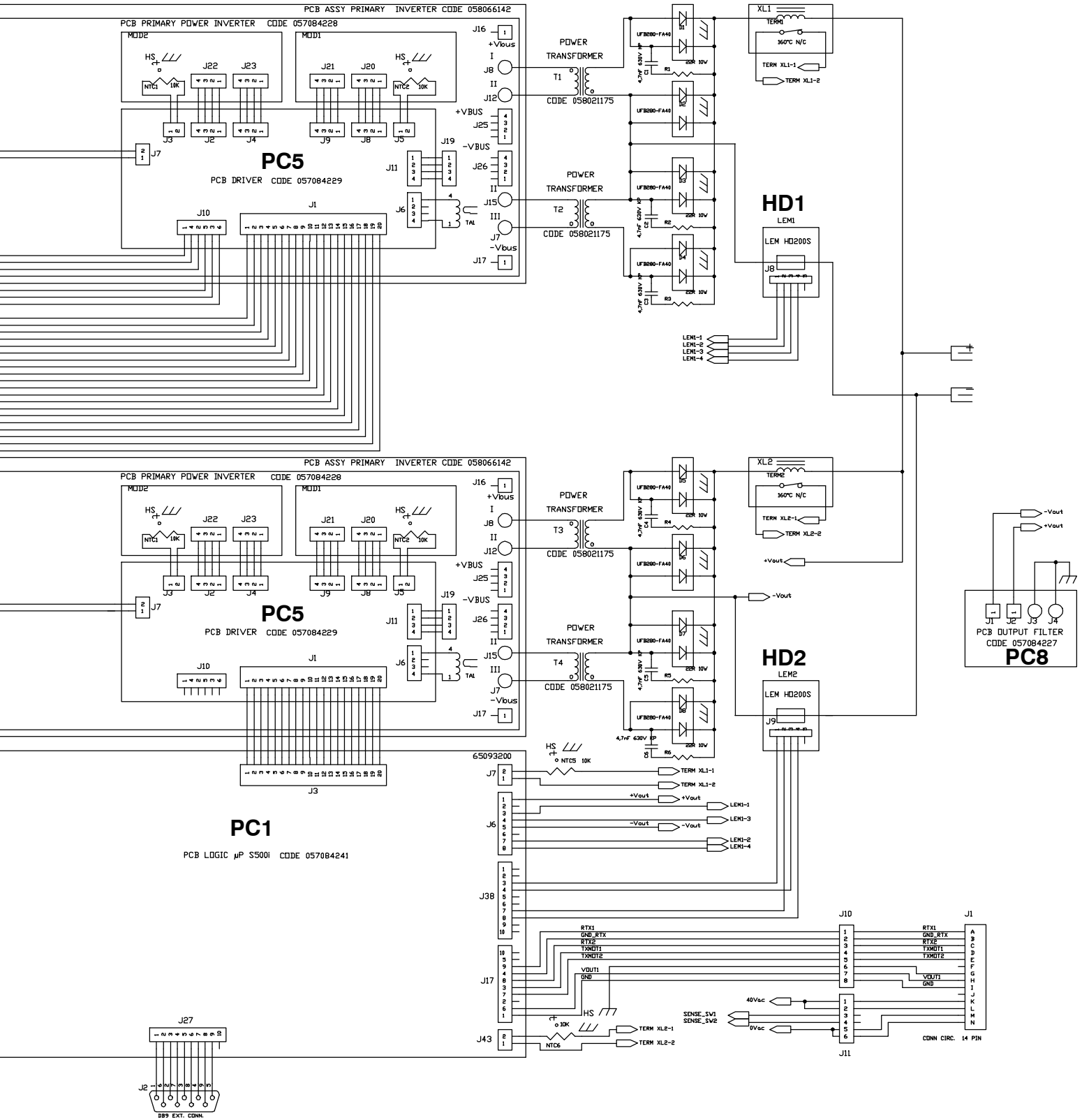



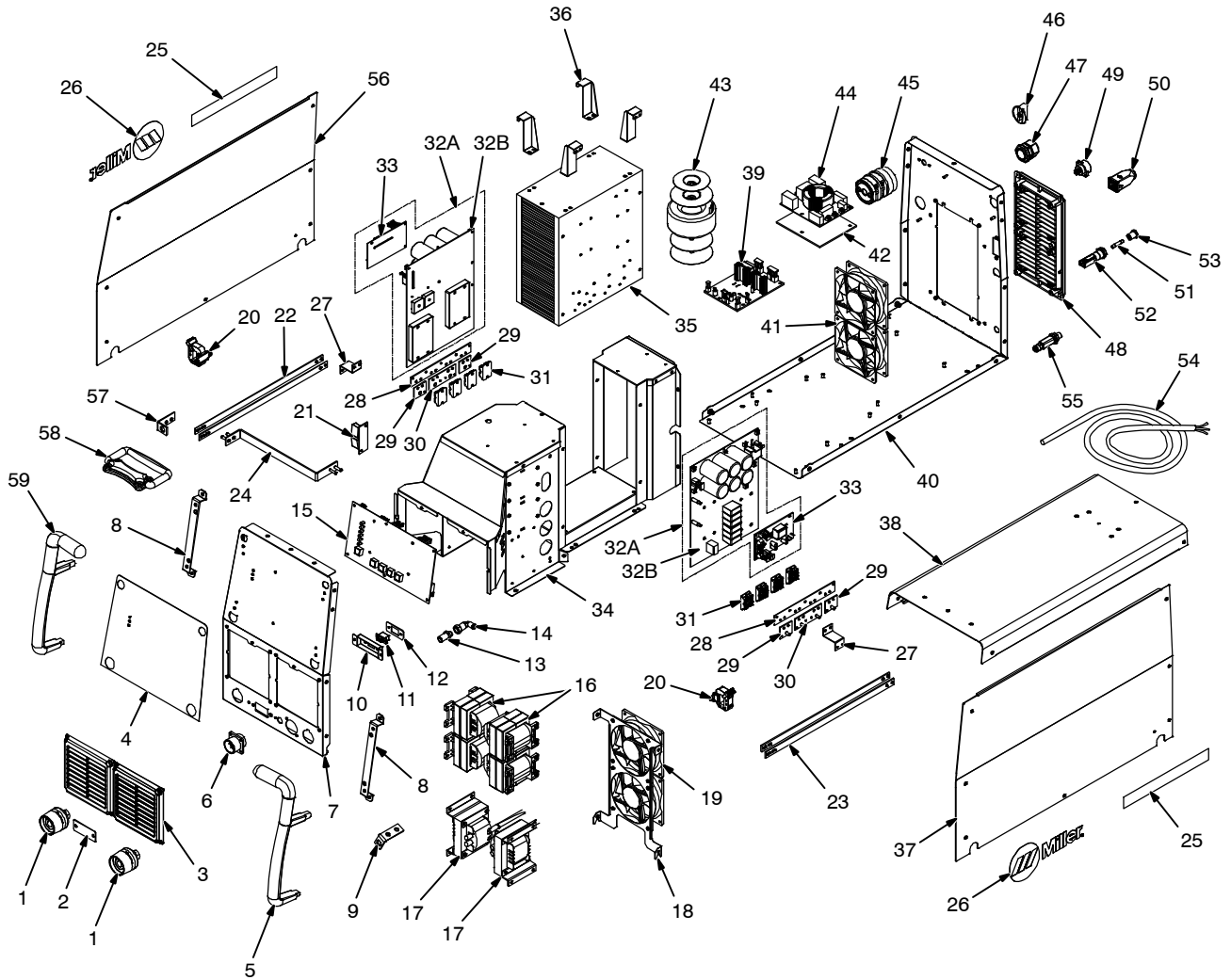
Figure 7-3. Circuit Diagram for Migmatic S500i



 WARNING ELECTRIC SHOCK HAZARD	<ul style="list-style-type: none"> 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.
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956172381-A

SECTION 8 – PARTS LIST



956172374_12_A

Figure 8-1. Main Assembly, MigMatic S400i/400iP/500i

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
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Figure 8-1. Main Assembly, MigMatic S400i/400iP/500i

...	1	056076323	Receptacle, Twist Lock Power	2
...	2	156007048	Cover, 65 x 27	1
...	3	116170004	Grid, Front	2
...	4	056052017	Instrument Plate, Front	1
...	5	231553	Handle, Right	1
...	6	056076324	Kit, Cable, 14-Pin Receptacle	1
...	7	156118109	Panel, Front	1
...	8	156005227	Support	2
...	9	216031081	Copper Connection, Positive	1
...	10	156005228	Connector, Support	1
...	11	556049431	Connector, Programming	1
...	12	156005229	Connector, Support	1
...	13	556049432	Connector, Gas	1
...	14	556049433	Joint, Gas	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
Figure 8-1. Main Assembly, MigMatic S400i/400iP/500i				
15	PC1	057084238	Logic μ P Board S400i	1
	PC1	057084240	Logic μ P Board S400iP	1
	PC1	057084241	Logic μ P Board S500i	1
16	T1,T2,T3,T4	058021175	Power Transformer	4
17	XL1	057098027	Output Inductance	2
18		156005232	Support, Fan	1
19	FM	056126088	Fan, Motor w/leads and plug	2
20	HD1,HD2	056167014	Probe, Lem	2
21	PC8	057084227	Circuit Board, Output Filter	1
22		216031082	Copper Connection	2
23		216031083	Copper Connection	2
24		216031084	Copper Connection	1
25		356029274	Nameplate, Side S400i	2
		356029275	Nameplate, Side S400iP	2
		356029276	Nameplate, Side S500i	2
26		119503	Label, Miller Logo 240mm	2
27		216031085	Copper Connection	2
28		216031086	Copper Connection	2
29		056076321	Copper Connection	4
30		216031087	Copper Connection	2
31		056068076	Diode, Secondary	8
32A	PC2,PC5	058066142	Kit, PCB Assy, Primary Power Inverter	2
32B	PC2	057084228	Circuit Board, Primary Power Inverter	2
33	PC5	057084229	Circuit Board, Driver	2
34		156005230	Support, Heatsink	1
35		056082110	Heatsink	1
36		156005231	Support, Circuit Board	4
37		156122104	Panel, Right Side	1
38		156121052	Cover	1
39	PC7	057084230	Circuit Board, Flyback	1
40		156006104	Base, Rear	1
41	FM	056126090	Fan, Motor w/leads and plug	2
42		656005037	Insulator, Filter	1
43		058021276	Transformer, Auxiliary	1
44	PC4	057084239	Circuit Board, Input Filter	1
45	S1	056067293	Switch, Power	1
46		056020081	Knob, Power Switch	1
47		656089039	Strain Relief	1
48		116170003	Grid, Rear Fan Support	1
49		056076325	7-Pin Receptacle, AWC Control	1
50		056076326	4-Pin Receptacle, AWC Power Supply	1
51	F1	056092103	Fuse 2A	1
52		056092104	Fuse Holder	1
53		156007049	Fuse Holder Cover	1
54		057014433	Cable, Power	1
55		556049432	Connector, Gas	1
56		156122105	Panel, Left Side	1
57		216031088	Copper Connection, Negative	1
58		208015	Handle	1
59		231554	Handle, Left	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.

TRUE BLUE[®]

WARRANTY

Effective January 1, 2020

(Equipment with a serial number preface of NA or newer)

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

Warranty Questions?
Call your ITW Welding
Regional Office.

LIMITED WARRANTY – Subject to the terms and conditions below, Miller Electric Mfg. LLC, Appleton, Wisconsin and ITW Welding (hereafter referred to as Miller) warrant to authorized distributors 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. Notifications submitted as online warranty claims must provide detailed descriptions of the fault and troubleshooting steps taken to diagnose failed parts. Warranty claims that lack the required information as defined in the Miller Service Operation Guide (SOG) may be denied by Miller.

Miller shall honor warranty claims on warranted equipment listed below in the event of a defect within the warranty coverage time periods listed below. Warranty time periods start on the delivery date of the equipment to the end-user purchaser, or 18 months after the equipment is shipped to an International distributor, whichever occurs first.

1. 5 Years Parts — 3 Years Labor
 - * Original Main Power Rectifiers Only to Include SCRs, Diodes, and Discrete Rectifier Modules
2. 3 Years — Parts and Labor Unless Specified
 - * Auto-Darkening Helmet Lenses (No Labor) (See Classic Series Exception Below)
 - * Engine Driven Welder/Generators
(NOTE: Engines are Warranted Separately by the Engine Manufacturer.)
 - * Insight Welding Intelligence Products (Except External Sensors)
 - * Inverter Power Sources
 - * Plasma Arc Cutting Power Sources
 - * Process Controllers
 - * Semi-Automatic and Automatic Wire Feeders
 - * Transformer/Rectifier Power Sources
3. 2 Years — Parts and Labor (No Labor)
 - * Auto-Darkening Helmet Lenses – Classic Series Only
 - * Auto-Darkening Weld Masks (No Labor)
 - * Fume Extractors – Capture 5, Filtair 400 and Industrial Collector Series
4. 1 Year — Parts and Labor Unless Specified
 - * ArcReach Heater
 - * AugmentedArc and LiveArc Welding Systems
 - * Automatic Motion Devices
 - * Bernard BTB Air-Cooled MIG Guns (No Labor)
 - * CoolBelt (No Labor)
 - * Desiccant Air Dryer System
 - * Field Options
(NOTE: Field options are covered for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
 - * RFCS Foot Controls (Except RFCS-RJ45)
 - * Fume Extractors – Filtair 130, MWX and SWX Series, ZoneFlow Extraction Arms and Motor Control Box HF Units
 - * ICE/XT Plasma Cutting Torches (No Labor)
 - * Induction Heating Power Sources, Coolers
(NOTE: Digital Recorders are Warranted Separately by the Manufacturer.)
 - * Load Banks
 - * Motor-Driven Guns (except Spoolmate Spoolguns)
 - * PAPR Blower Unit (No Labor)

- * Positioners and Controllers
 - * Racks (For Housing Multiple Power Sources)
 - * Running Gear/Trailers
 - * Subarc Wire Drive Assemblies
 - * Supplied Air Respirator (SAR) Boxes and Panels
 - * TIG Torches (No Labor)
 - * Tregaskiss Guns (No Labor)
 - * Water Cooling Systems
 - * Wireless Remote Foot/Hand Controls and Receivers
 - * Work Stations/Weld Tables (No Labor)
5. 6 Months — Parts
 - * Batteries
 6. 90 Days — Parts
 - * Accessories (Kits)
 - * ArcReach Heater Quick Wrap and Air Cooled Cables
 - * Canvas Covers
 - * Induction Heating Coils and Blankets, Cables, and Non-Electronic Controls
 - * MDX Series MIG Guns
 - * M-Guns
 - * MIG Guns, Subarc (SAW) Torches, and External Cladding Heads
 - * Remote Controls and RFCS-RJ45
 - * Replacement Parts (No labor)
 - * Spoolmate Spoolguns

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

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, relays, work station table tops and welding curtains, or parts that fail due to normal wear. (Exception: brushes and relays are covered on all engine-driven products.)**
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.
4. Defects caused by accident, unauthorized repair, or improper testing.

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

The exclusive remedies for warranty claims are, at Miller's option, either: (1) repair; or (2) replacement; or, if approved in writing by Miller, (3) the pre-approved 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 use). Products may not be returned without Miller's written approval. Return shipment shall be at customer's risk and expense.

The above remedies are F.O.B. Appleton, WI, or Miller's authorized service facility. Transportation and freight are the customer's responsibility. TO THE EXTENT PERMITTED BY LAW, THE REMEDIES HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES REGARDLESS OF THE LEGAL THEORY. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT) REGARDLESS OF THE LEGAL THEORY. ANY WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY, OR REPRESENTATION, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, ARE EXCLUDED AND DISCLAIMED BY MILLER.

This Limited Warranty provides specific legal rights, and other rights may be available, but may vary by country.



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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