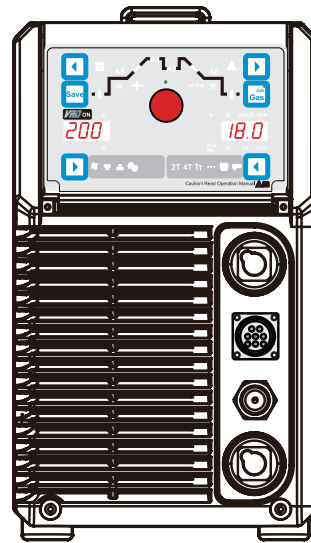


220AC/DC 300AC/DC

TRANSTIG WELDING MACHINE



Art # A-12276

Service Manual

Revision: AB
Operating Features:

Issue Date: March 4, 2014

Manual No: 0-5292

220AC/DC

300AC/DC

240 V	1 PHASE	220 AMP
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415 V	3 PHASE	300 AMP
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WE APPRECIATE YOUR BUSINESS!

Congratulations on your new CIGWELD product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and world-wide service network. To locate your nearest distributor or Accredited Service Provider call +1300 654 674, or visit us on the web at www.cigweld.com.au

This Service Manual has been designed to instruct you on the correct use and operation of your CIGWELD product. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

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The Brand of Choice for Contractors and Fabricators Worldwide.

CIGWELD is the Market Leading Brand of Arc Welding Products for Victor Technologies Inc. We are a mainline supplier to major welding industry sectors in the Asia Pacific and emerging global markets including; Manufacturing, Construction, Mining, Automotive, Engineering, Rural and DIY.

We distinguish ourselves from our competition through market-leading, dependable products that have stood the test of time. We pride ourselves on technical innovation, competitive prices, excellent delivery, superior customer service and technical support, together with excellence in sales and marketing expertise.

Above all, we are committed to develop technologically advanced products to achieve a safer working environment for industry operators.



WARNINGS

Read and understand this entire Manual and your employer's safety practices before installing, operating, or servicing the equipment.

While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use.

Welding Power Supply
Service Manual Number 0-5292 for:

Cigweld Transtig 220AC/DC Inverter Plant	Part Number W1007220
Cigweld Transtig 220AC/DC Power Source (Packed)	Part Number W1007221
Cigweld Transtig 300AC/DC Power Source (Packed)	Part Number W1007301

Published by:
CIGWELD Pty Ltd
71 Gower Street
Preston, Victoria, Australia, 3072

www.cigweld.com.au

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Publication Date: October 17, 2013
Revision AB Date: March 4, 2014

Record the following information for Warranty purposes:

Where Purchased: _____

Purchase Date: _____

Equipment Serial #: _____

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SECTION 1: ARC WELDING SAFETY INSTRUCTIONS AND WARNINGS



WARNING

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS KEEP AWAY UNTIL CONSULTING YOUR DOCTOR. DO NOT LOSE THESE INSTRUCTIONS. READ OPERATING/INSTRUCTION MANUAL BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

Welding products and welding processes can cause serious injury or death, or damage to other equipment or property, if the operator does not strictly observe all safety rules and take precautionary actions.

Safe practices have developed from past experience in the use of welding and cutting. These practices must be learned through study and training before using this equipment. Some of these practices apply to equipment connected to power lines; other practices apply to engine driven equipment. Anyone not having extensive training in welding and cutting practices should not attempt to weld.

Safe practices are outlined in the Australian Standard AS1674.2-2007 entitled: Safety in welding and allied processes Part 2: Electrical. This publication and other guides to what you should learn before operating this equipment are listed at the end of these safety precautions. **HAVE ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR WORK PERFORMED ONLY BY QUALIFIED PEOPLE.**

1.01 Arc Welding Hazards



WARNING

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.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Insulate yourself from work and ground using dry insulating mats or covers.
4. Disconnect input power or stop engine before installing or servicing this equipment. Lock input power disconnect switch open, or remove line fuses so power cannot be turned on accidentally.
5. Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
6. Turn off all equipment when not in use. Disconnect power to equipment if it will be left unattended or out of service.
7. Use fully insulated electrode holders. Never dip holder in water to cool it or lay it down on the ground or the work surface. Do not touch holders connected to two welding machines at the same time or touch other people with the holder or electrode.
8. Do not use worn, damaged, undersized, or poorly spliced cables.
9. Do not wrap cables around your body.
10. Ground the workpiece to a good electrical (earth) ground.
11. Do not touch electrode while in contact with the work (ground) circuit.
12. Use only well-maintained equipment. Repair or replace damaged parts at once.
13. In confined spaces or damp locations, do not use a welder with AC output unless it is equipped with a voltage reducer. Use equipment with DC output.
14. Wear a safety harness to prevent falling if working above floor level.
15. Keep all panels and covers securely in place.

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WARNING

ARC RAYS can burn eyes and skin; NOISE can damage hearing.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Noise from some processes can damage hearing.

1. Use a Welding Helmet or Welding Faceshield fitted with a proper shade of filter (see ANSI Z49.1 and AS 1674 listed in Safety Standards) to protect your face and eyes when welding or watching.
2. Wear approved safety glasses. Side shields recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.
5. Use approved ear plugs or ear muffs if noise level is high.
6. Never wear contact lenses while welding.

Recommended Protective Filters for Electric Welding		
Description of Process	Approximate Range of Welding Current in Amps	Minimum Shade Number of Filter(s)
Manual Metal Arc Welding - covered electrodes (MMAW)	Less than or equal to 100	8
	100 to 200	10
	200 to 300	11
	300 to 400	12
	Greater than 400	13
Gas Metal Arc Welding (GMAW) (MIG) other than Aluminium and Stainless Steel	Less than or equal to 150	10
	150 to 250	11
	250 to 300	12
	300 to 400	13
Gas Metal Arc Welding (GMAW) (MIG) Aluminium and Stainless Steel	Less than or equal to 250	12
	250 to 350	13
Gas Tungsten Arc Welding (GTAW) (TIG)	Less than or equal to 100	10
	100 to 200	11
	200 to 250	12
	250 to 350	13
Flux-cored Arc Welding (FCAW) -with or without shielding gas.	Less than or equal to 300	11
	300 to 400	12
	400 to 500	13
	Greater than 500	14
Air - Arc Gouging	Less than or equal to 400	12
Plasma - Arc Cutting	50 to 100	10
	100 to 400	12
	400 to 800	14
Plasma - Arc Spraying	—	15
Plasma - Arc Welding	Less than or equal to 20	8
	20 to 100	10
	100 to 400	12
	400 to 800	14
Submerged - Arc Welding	—	2(5)
Resistance Welding	—	Safety Spectacles or eye shield

Refer to standard AS/NZS 1338.1:1992 for comprehensive information regarding the above table.



WARNING

FUMES AND GASES can be hazardous to your health.

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

1. Keep your head out of the fumes. Do not breathe the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction for metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapours to form highly toxic and irritating gases.
7. 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 if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



WARNING

WELDING can cause fire or explosion.

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.

3. Remove all flammables within 10M of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire, and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Do not weld on closed containers such as tanks or drums.
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from travelling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use welder to thaw frozen pipes.
10. Remove stick electrode from holder or cut off welding wire at contact tip when not in use.



WARNING

FLYING SPARKS AND HOT METAL can cause injury.

Chipping and grinding cause flying metal. As welds cool, they can throw off slag.

1. Wear approved face shield or safety goggles. Side shields recommended.
2. Wear proper body protection to protect skin.



WARNING

CYLINDERS can explode if damaged.

Shielding 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.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.

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5. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
6. Turn face away from valve outlet when opening cylinder valve.
7. Keep protective cap in place over valve except when cylinder is in use or connected for use.
8. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.



WARNING

MOVING PARTS can cause injury.

Moving parts, such as fans, rotors, and belts can cut fingers and hands and catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and securely in place.
2. Stop engine before installing or connecting unit.
3. Have only qualified people remove guards or covers for maintenance and troubleshooting as necessary.
4. To prevent accidental starting during servicing, disconnect negative (-) battery cable from battery.
5. Keep hands, hair, loose clothing, and tools away from moving parts.
6. Reinstall panels or guards and close doors when servicing is finished and before starting engine.



WARNING

This product, when used for welding or cutting, produces fumes or gases which contain chemicals know to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety code Sec. 25249.5 et seq.)

NOTE

Considerations About Welding And The Effects of Low Frequency Electric and Magnetic Fields

The following is a quotation from the General Conclusions Section of the U.S. Congress, Office of Technology Assessment, Biological Effects of Power Frequency Electric & Magnetic Fields - Background Paper, OTA-BP-E-63 (Washington, DC: U.S. Government Printing Office, May 1989): "...there is now

a very large volume of scientific findings based on experiments at the cellular level and from studies with animals and people which clearly establish that low frequency magnetic fields and interact with, and produce changes in, biological systems. While most of this work is of very high quality, the results are complex. Current scientific understanding does not yet allow us to interpret the evidence in a single coherent framework. Even more frustrating, it does not yet allow us to draw definite conclusions about questions of possible risk or to offer clear science-based advice on strategies to minimize or avoid potential risks."

To reduce magnetic fields in the workplace, use the following procedures.

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cable around the body.
4. Keep welding power source and cables as far away from body as practical.



ABOUT PACEMAKERS:

The above procedures are among those also normally recommended for pacemaker wearers. Consult your doctor for complete information.

1.02 Principal Safety Standards

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices for Occupation and Educational Eye and Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting and Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safety in welding and allied processes Part 1: Fire Precautions, AS 1674.1-1997 from SAI Global Limited, www.saiglobal.com.

Safety in welding and allied processes Part 2: Electrical, AS 1674.2-2007 from SAI Global Limited, www.saiglobal.com.

Filters for eye protectors - Filters for protection against radiation generated in welding and allied operations AS/NZS 1338.1:1992 from SAI Global Limited, www.saiglobal.com.

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1.03 Servicing Hazards



WARNING

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.

Only qualified persons should test, maintain, and repair this unit.

Only qualified persons should test, maintain, and repair this unit.



WARNING

ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn Off welding power source and wire feeder and disconnect and lockout input power using line disconnect switch, circuit breakers, or by removing plug from receptacle, or stop engine before servicing unless the procedure specifically requires an energized unit.
- Insulate yourself from ground by standing or working on dry insulating mats big enough to prevent contact with the ground.
- Do not leave live unit unattended.
- If this procedure requires an energized unit, have only personnel familiar with and following standard safety practices do the job.
- When testing a live unit, use the one-hand method. Do not put both hands inside unit. Keep one hand free.
- Disconnect input power conductors from de-energized supply line BEFORE moving a welding power source.

SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters.

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



WARNING

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.



WARNING

FIRE OR EXPLOSION hazard.

- Do not place unit on, over, or near combustible surfaces.
- Do not service unit near flammables.



WARNING

FLYING METAL or DIRT can injure eyes.

- Wear safety glasses with side shields or face shield during servicing.
- Be careful not to short metal tools, parts, or wires together during testing and servicing.



WARNING

HOT PARTS can cause severe burns.

- 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.



WARNING

EXPLODING PARTS can cause injury.

- Failed parts can explode or cause other parts to explode when power is applied to inverters.
- Always wear a face shield and long sleeves when servicing inverters.



WARNING

SHOCK HAZARD from testing.

- Turn Off welding power source and wire feeder or stop engine before making or changing meter lead connections.
- Use at least one meter lead that has a self-retaining spring clip such as an alligator clip.
- Read instructions for test equipment.



WARNING

FALLING UNIT can cause injury.

- 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.



WARNING

MOVING PARTS can cause injury,

- Keep away from moving parts such as fans.
- Keep away from pinch points such as drive rolls.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance as necessary.
- Keep hands, hair, loose clothing, and tools away from moving parts.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



WARNING

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.



WARNING

READ INSTRUCTIONS.

- Use Testing Booklet (Part No. 150 853) when servicing this unit.
- Consult the Owner's Manual for welding safety precautions.
- Use only genuine replacement parts from the manufacturer.

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1.04 EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: "The body of evidence, in the committee's judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard." However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.



WARNING

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 install, test, and service H.F. producing units.
- 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.

About Implanted Medical Device



WARNING

MAGNETIC FIELDS can affect Implanted Medical Devices.

- Wearers of Pacemakers and other Implanted Medical Devices should keep away from servicing areas until consulting their doctor and the device manufacturer.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

**SECTION 2:
INTRODUCTION****2.01 How To Use This Manual**

To ensure safe operation, read the entire manual, including the chapter on safety instructions and warnings.

Throughout this manual, the words **WARNING**, **CAUTION**, and **NOTE** may appear. Pay particular attention to the information provided under these headings. These special annotations are easily recognized as follows:

**WARNING**

*A **WARNING** gives information regarding possible personal injury.*

**CAUTION**

*A **CAUTION** refers to possible equipment damage.*

NOTE

*A **NOTE** offers helpful information concerning certain operating procedures.*

Additional copies of this manual may be purchased by contacting CIGWELD at the address and phone number for your location listed in the inside back cover of this manual. Include the Owner's Manual number and equipment identification numbers.

2.02 Equipment Identification

The unit's identification number (specification or part number), model, and serial number usually appear on a nameplate attached to the control panel. In some cases, the nameplate may be attached to the rear panel. Equipment which does not have a control panel such as gun and cable assemblies is identified only by the specification or part number printed on the shipping container. Record these numbers on the bottom of page ii for future reference.

2.03 Receipt of Equipment

When you receive the equipment, check it against the invoice to make sure it is complete and inspect the equipment for possible damage due to shipping. If there is any damage, notify the carrier immediately to file a claim. Furnish complete information concerning damage claims or shipping errors to the location in your area listed in the inside back cover of this manual.























Include all equipment identification numbers as described above along with a full description of the parts in error.

Move the equipment to the installation site before un-crating the unit. Use care to avoid damaging the equipment when using bars, hammers, etc., to uncrate the unit.

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2.04 Symbol Chart

Note that only some of these symbols will appear on your model.

	On		Single Phase		Wire Feed Function
	Off		Three Phase		Wire Feed Towards Workpiece With Output Voltage Off.
	Dangerous Voltage		Three Phase Static Frequency Converter-Transformer-Rectifier		Welding Gun
	Increase/Decrease		Remote		Purging Of Gas
	Circuit Breaker		Duty Cycle		Continuous Weld Mode
	AC Auxiliary Power		Percentage		Spot Weld Mode
	Fuse		Panel/Local		Spot Time
	Amperage		Shielded Metal Arc Welding (SMAW)		Preflow Time
	Voltage		Gas Metal Arc Welding (GMAW)		Postflow Time
	Hertz (cycles/sec)		Gas Tungsten Arc Welding (GTAW)		2 Step Trigger Operation Press to initiate wirefeed and welding, release to stop.
	Frequency		Air Carbon Arc Cutting (CAC-A)		4 Step Trigger Operation Press and hold for preflow, release to start arc. Press to stop arc, and hold for preflow.
	Negative		Constant Current		Burnback Time
	Positive		Constant Voltage Or Constant Potential		Disturbance In Ground System
	Direct Current (DC)		High Temperature		Inches Per Minute
	Protective Earth (Ground)		Fault Indication		Meters Per Minute
	Line		Arc Force		
	Line Connection		Touch Start (GTAW)		
	Auxiliary Power		Variable Inductance		
	Receptacle Rating-Auxiliary Power		Voltage Input		

Art # A-04937

2.05 Description

The CIGWELD TRANSTIG 220AC/DC and 300AC/DC are light weight constant current welding power sources incorporating the latest digital inverter technology to provide exceptional AC/DC arc characteristics. TIG welding features include torch trigger latch, pre & post flow gas control, pulse control, spot weld control, hot start control, up & down slope control. Lift TIG and HF TIG operating modes are available.

These units also have outstanding arc characteristics across a wide range of Manual Metal Arc Welding (MMAW) electrodes. MMAW welding features include a built in VRD, hot start control and arc force control. The units are equipped with digital amperage and voltage meters. The unit are also fully compliant to Australian Standard AS 60974.1 and IEC 60974.1.

The TRANSTIG 220AC/DC and TRANSTIG 300AC/DC provides excellent welding performance across a broad range of applications when used with the correct welding consumables and procedures. The following instructions detail how to correctly and safely set up the machine and give guidelines on gaining the best efficiency and quality from the Power Source. Please read these instructions thoroughly before using the unit.

2.06 User Responsibility

This equipment will perform as per the information contained herein when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Defective equipment (including welding leads) should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated, should be replaced immediately. Should such repairs or replacements become necessary, it is recommended that such repairs be carried out by appropriately qualified persons approved by CIGWELD. Advice in this regard can be obtained by contacting an Accredited CIGWELD Distributor.

This equipment or any of its parts should not be altered from standard specification without prior written approval of CIGWELD. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use or unauthorized modification from standard specification, faulty maintenance, damage or improper repair by anyone other than appropriately qualified persons approved by CIGWELD.

2.07 Transporting Methods

This unit is equipped with a handle for carrying purposes.



WARNING

ELECTRIC SHOCK can kill. DO NOT TOUCH live electrical parts. Disconnect input power conductors from de-energized supply line before moving the welding power source.



WARNING

FALLING EQUIPMENT can cause serious personal injury and equipment damage.

Lift unit with handle on top of case.

Use handcart or similar device of adequate capacity.

If using a fork lift vehicle, place and secure unit on a proper skid before transporting.

2.08 Packaged Items

Transtig 220AC/DC Inverter Plant (Part No. W1007220)

- Transtig 220 AC/DC Inverter Power Source
- Comet Professional Argon Regulator/Flowmeter
- Tig Torch type 26 with flex head, trigger switch and 8 pin remote control connection with 4m lead
- Tig Torch Accessory kit that includes 1.6mm and 2.4mm tungstens with collets, collet bodies and No. 4, 5 & 6 Alumina nozzles
- Electrode Holder with 5m lead
- Work Clamp with 5m lead
- Shielding Gas Hose Assembly
- Shoulder Strap
- Product Bag
- Operating Manual

Transtig 220AC/DC Inverter Power Source (Part No. W1007221)

- Transtig 220 AC/DC Inverter Power Source
- Shoulder Strap
- Operating Manual
- Shielding Gas Hose Assembly

Transtig 300AC/DC Inverter Power Source (Part No. W1007301)

- Transtig 300 AC/DC Inverter Power Source
- Shoulder Strap
- Operating Manual
- Shielding Gas Hose Assembly

**SECTION 3:
INSTALLATION, OPERATION AND SETUP**

3.01 Duty Cycle

The rated duty cycle of a Welding Power Source, is a statement of the time it may be operated at its rated welding current output without exceeding the temperature limits of the insulation of the component parts. To explain the 10 minute duty cycle period the following example is used. Suppose a Welding Power Source is designed to operate at a 40% duty cycle, 170 amperes at 26.8 volts. This means that it has been designed and built to provide the rated amperage (170A) for 4 minutes, i.e. arc welding time, out of every 10 minute period (40% of 10 minutes is 4 minutes). During the other 6 minutes of the 10 minute period the Welding Power Source must idle and be allowed to cool. The thermal cut out will operate if the duty cycle is exceeded.

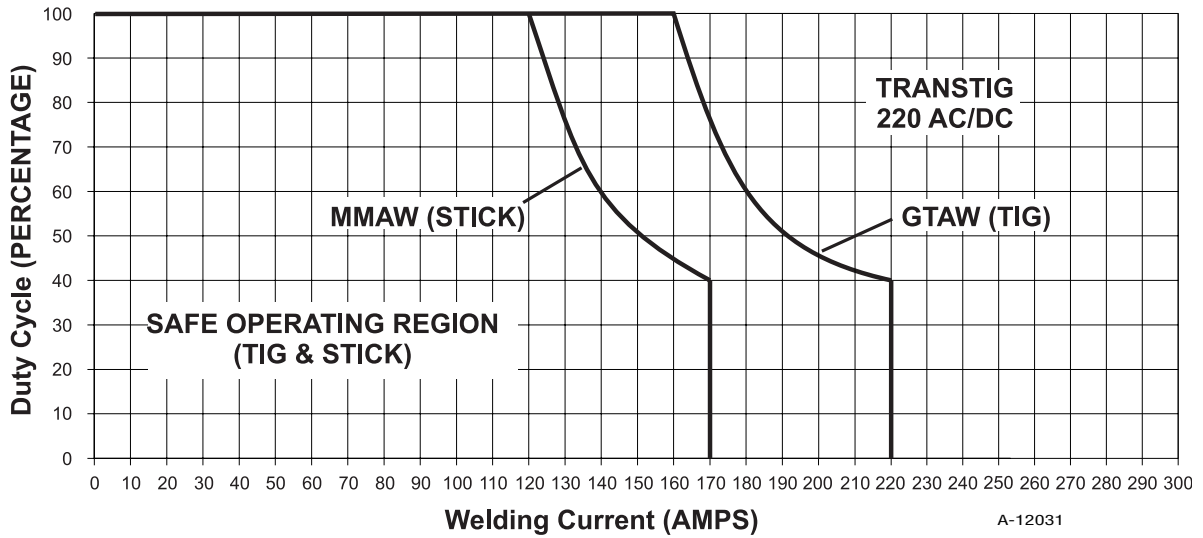


Figure 3-1: TRANSTIG 220AC/DC Duty Cycle

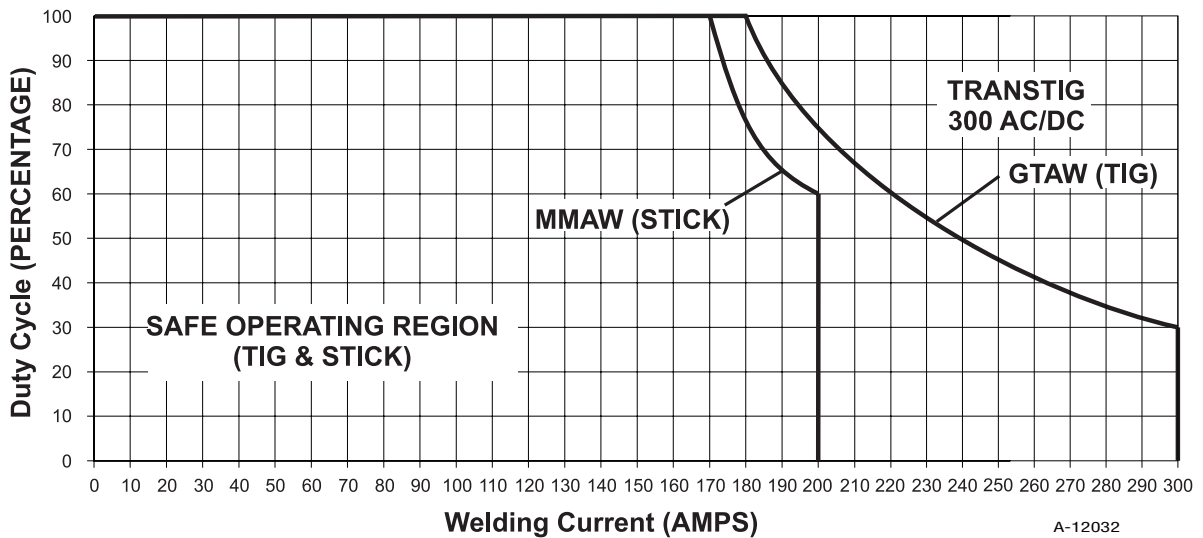


Figure 3-2: TRANSTIG 300AC/DC Duty Cycle

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

3.02 Specifications

Description	TRANSTIG 220 AC/DC	TRANSTIG 300 AC/DC
Packed Power Source Part Number	W1007221	W1007301
Power Source Mass	13.4 kg	16.3 kg
Power Source Dimensions	H 326mm x W 185mm x D 483mm	H 326mm x W 185mm x D 483mm
Power Source Part Number	W1007221	W1007301
Cooling	Fan Cooled	Fan Cooled
Welder Type	Inverter Power Source	Inverter Power Source
Australian Standards	AS 60974.1-2006 / IEC 60974-1	AS 60974.1-2006 / IEC 60974-1
Number of Phases	1	3
Nominal Supply Voltage	240V +/- 15%	415V +/- 15%
Nominal Supply Frequency	50/60Hz	50/60Hz
Welding Current Range (STICK Mode)	10 – 170A	10 – 200A
Welding Current Range (TIG Mode)	3 - 220A	5 - 300A
Factory Fitted Plug Rating	15A	Not applicable
Effective Input Current (I_{1eff}) (note2)	14.7A	11.6A
Maximum Input Current (I_{1max})	23.1A	17.1A
Generator Requirement (note4)	6kW (7.5 kVA @ 0.8PF)	13kW (16 kVA @ 0.8PF)
STICK (MMAW) Welding Output, 40°C, 10 min.	170A @ 40%, 26.8V 140A @ 60%, 25.6V 120A @ 100%, 24.8V	200A @ 60%, 28.0V 170A @ 100%, 26.8V
TIG (GTAW) Welding Output, 40°C, 10 min.	220A @ 40%, 18.8V 180A @ 60%, 17.2V 160A @ 100%, 16.4V	300A @ 30%, 22.0V 220A @ 60%, 18.8V 180A @ 100%, 17.2V
Open Circuit Voltage (VRD active)	<23V DC	<25V DC
Protection Class	IP23S	IP23S

Table 3-1: Power Source Specification

NOTE

Note 1: Due to variations that can occur in manufactured products, claimed performance, voltages, ratings, all capacities, measurements, dimensions and weights quoted are approximate only. Achievable capacities and ratings in use and operation will depend upon correct installation, use, applications, maintenance and service.

Note 2: The Effective Input Current should be used for the determination of cable size & supply requirements.

Note 3: Motor start fuses or thermal circuit breakers are recommended for this application. Check local requirements for your situation in this regard.

Note 4: Generator Requirements at the Maximum Output Duty Cycle.

Due to large variations in performance and specifications of different brands and types of generators, Cigweld cannot guarantee full welding output power or duty cycle on every brand or type of generator.

Some small generators incorporate low cost circuit breakers on their outputs. These circuit breakers usually will have a small reset button, and will trip much faster than a switchboard type circuit breaker. This may result in not being able to achieve full output or duty cycle from the power source / generator combination. For this reason we recommend a generator that incorporates switchboard type circuit breakers.

Cigweld recommends that when selecting a generator, that the particular power source / generator combination be adequately trialed to ensure the combination performs to the users expectations.

Note 5: CIGWELD reserves the right to change product performance and specifications without notice.

3.03 Environment

These units are designed for use in environments with increased hazard of electric shock as outlined in AS 60974.1 and AS 1674.2.

A. Examples of environments with increased hazard of electric shock are:

1. In locations in which freedom of movement is restricted, so that the operator is forced to perform the work in a cramped (kneeling, sitting or lying) position with physical contact with conductive parts.
2. In locations which are fully or partially limited by conductive elements, and in which there is a high risk of unavoidable or accidental contact by the operator.
3. In wet or damp hot locations where humidity or perspiration considerable reduces the skin resistance of the human body and the insulation properties of accessories.

B. Environments with increased hazard of electric shock do not include places where electrically conductive parts in the near vicinity of the operator, which can cause increased hazard, have been insulated.

3.04 Location

Be sure to locate the welder according to the following guidelines:

- A. In areas, free from moisture and dust.
- B. Ambient temperature between 0° C to 40° C.
- C. In areas, free from oil, steam and corrosive gases.
- D. In areas, not subjected to abnormal vibration or shock.
- E. In areas, not exposed to direct sunlight or rain.
- F. Place at a distance of 300mm or more from walls or similar that could restrict natural air flow for cooling.
- G. The enclosure design of this power source meets the requirements of IP23S as outlined in AS60529. This provides adequate protection against solid objects (greater than 12mm), and direct protection from vertical drops. Under no circumstances should the unit be operated or connected in a micro environment that will exceed the stated conditions. For further information please refer to AS 60529.
- H. Precautions must be taken against the power source toppling over. The power source must be located on a suitable horizontal surface in the upright position when in use.

3.05 Ventilation

Since the inhalation of welding fumes can be harmful, ensure that the welding area is effectively ventilated.

3.06 Mains Supply Voltage Requirements

The Mains supply voltage should be within $\pm 15\%$ of the rated mains supply voltage. Too low a voltage may cause poor welding performance. Too high a supply voltage will cause components to overheat and possibly fail.

The Welding Power Source must be:

- Correctly installed, if necessary, by a qualified electrician.
- Correctly earthed (electrically) in accordance with local regulations.
- Connected to the correct size power point and fuse as per the Specifications on page 3-2.



Any electrical work must be carried out by a qualified Electrical Tradesperson.

3.07 Electromagnetic Compatibility



WARNING

Extra precautions for Electromagnetic Compatibility may be required when this Welding Power Source is used in a domestic situation.

A. Installation and Use - Users Responsibility

The user is responsible for installing and using the welding equipment according to the manufacturer's instructions. If electromagnetic disturbances are detected then it shall be the responsibility of the user of the welding equipment to resolve the situation with the technical assistance of the manufacturer. In some cases this remedial action may be as simple as earthing the welding circuit, see NOTE below. In other cases it could involve constructing an electromagnetic screen enclosing the Welding Power Source and the work, complete with associated input filters. In all cases, electromagnetic disturbances shall be reduced to the point where they are no longer troublesome.

NOTE

The welding circuit may or may not be earthed for safety reasons. Changing the earthing arrangements should only be authorised by a person who is competent to assess whether the changes will increase the risk of injury, e.g. by allowing parallel welding current return paths which may damage the earth circuits of other equipment. Further guidance is given in IEC 60974-13 Arc Welding Equipment - Installation and use (under preparation).

B. Assessment of Area

Before installing welding equipment, the user shall make an assessment of potential electromagnetic problems in the surrounding area. The following shall be taken into account

1. Other supply cables, control cables, signalling and telephone cables; above, below and adjacent to the welding equipment.
2. Radio and television transmitters and receivers.
3. Computer and other control equipment.
4. Safety critical equipment, e.g. guarding of industrial equipment.
5. The health of people around, e.g. the use of pacemakers and hearing aids.
6. Equipment used for calibration and measurement.
7. The time of day that welding or other activities are to be carried out.
8. The immunity of other equipment in the environment: the user shall ensure that other equipment being used in the environment is compatible: this may require additional protection measures.

The size of the surrounding area to be considered will depend on the structure of the building and other activities that are taking place. The surrounding area may extend beyond the boundaries of the premises.

C. Methods of Reducing Electromagnetic Emissions

1. Mains Supply

Welding equipment should be connected to the mains supply according to the manufacturer's recommendations. If interference occurs, it may be necessary to take additional precautions such as filtering of the mains supply. Consideration should be given to shielding the supply cable of permanently installed welding equipment in metallic conduit or equivalent. Shielding should be electrically continuous throughout its length. The shielding should be connected to the Welding Power Source so that good electrical contact is maintained between the conduit and the Welding Power Source enclosure.

2. Maintenance of Welding Equipment

The welding equipment should be routinely maintained according to the manufacturer's recommendations. All access and service doors and covers should be closed and properly fastened when the welding equipment is in operation. The welding equipment should not be modified in any way except for those changes and adjustments covered in the manufacturer's instructions. In particular, the spark gaps of arc striking and stabilising devices should be adjusted and maintained according to the manufacturer's recommendations.

3. Welding Cables

The welding cables should be kept as short as possible and should be positioned close together, running at or close to the floor level.

4. Equipotential Bonding

Bonding of all metallic components in the welding installation and adjacent to it should be considered. However, metallic components bonded to the work piece will increase the risk that the operator could receive a shock by touching the metallic components and the electrode at the same time. The operator should be insulated from all such bonded metallic components.

5. Earthing of the Workpiece

Where the workpiece is not bonded to earth for electrical safety, nor connected to earth because of its size and position, e.g. ship's hull or building steelwork, a connection bonding the workpiece to earth may reduce emissions in some, but not all instances. Care should be taken to prevent the earthing of the workpiece increasing the risk of injury to users, or damage to other electrical equipment. Where necessary, the connection of the workpiece to earth should be made by direct connection to the workpiece, but in some countries where direct connection is not permitted, the bonding should be achieved by suitable capacitance, selected according to national regulations.

6. Screening and Shielding

Selective screening and shielding of other cables and equipment in the surrounding area may alleviate problems of interference. Screening the entire welding installation may be considered for special applications.

SECTION 4:
OPERATION

4.01 TRANSTIG 220AC/DC and 300AC/DC Power Source Controls, Indicators and Features

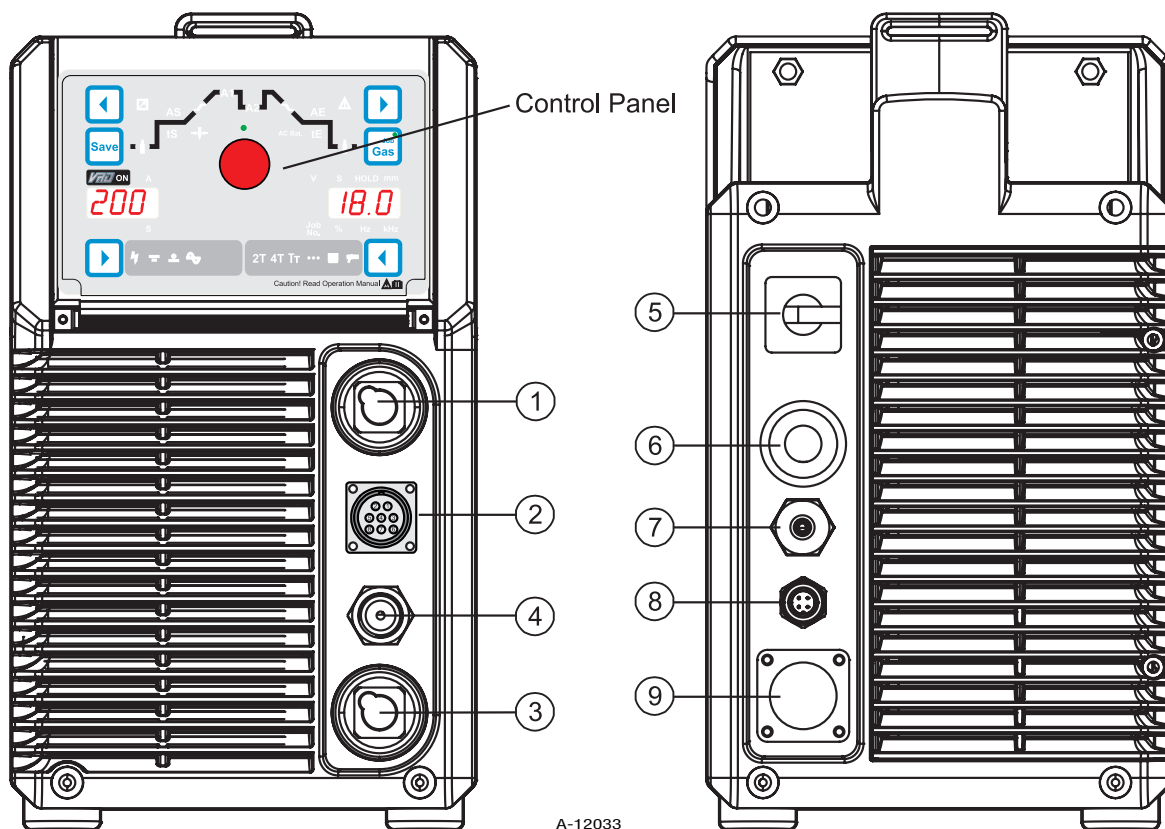


Figure 4-1: Controls on Front and Rear Panel

1. Electrode Welding Terminal

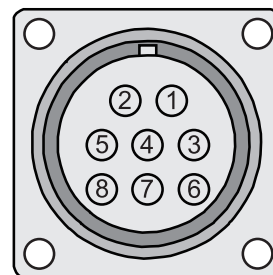
Electrode Welding Terminal. Welding current flows from the Power Source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.

2. 8 Pin Control Socket

The 8 pin receptacle is used to connect a trigger switch or remote control to the welding Power Source circuitry:

To make connections, align keyway, insert plug, and rotate threaded collar fully clockwise. The socket information is included in the event the supplied cable is not suitable and it is necessary to wire a plug or cable to interface with the 8 pin receptacle.

Socket Pin	Part Number / Description
1	Not used
2	Trigger Switch Input
3	Trigger Switch Input
4	Not used
5	Remote Control 5k ohm Potentiometers Maximum
6	Remote Control 5k ohm Potentiometers Minimum
7	Remote Control 5k ohm Potentiometer Wiper
8	Not used



A-12055

Table 4-1: 8 Pin Interconnection Control Plug Configuration

Figure 4-2: 8 Pin Control Socket

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

3. Worklead Welding Terminal

Worklead Welding Terminal. Welding current flows from the Power Source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection



CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal.

4. Shielding Gas Outlet

The Shielding Gas Outlet located on the front panel is a 5/8-18 UNF female gas fitting and is utilised for the connection of a suitable TIG Torch.

5. Main On/Off Switch

This Switch is located on the rear of the Power Source and turns mains power off and on.



WARNING

When the front digital displays are lit, the machine is connected to the Mains supply voltage and the internal electrical components are at Mains voltage potential.

6. Mains Supply Lead

The Transtig 220AC/DC is fitted with a heavy duty 15 Amp mains supply lead and plug.

The Transtig 300AC/DC is fitted with a heavy duty three phase mains supply lead.

7. Gas Inlet

The Shielding Gas Inlet connection is used to supply the appropriate shielding gas to the unit. The gas inlet is located on the rear of the Power Source.



WARNING

Only Inert Shielding Gases specifically designed for welding applications should be used.

8. Water Cooler Interface

The Water Cooler Interface is used to control a water cooler that may be attached to the unit. The Water Cooler Interface is located on the rear of the Power Source.

NOTE

Water Cooler is available for 300AC/DC only.

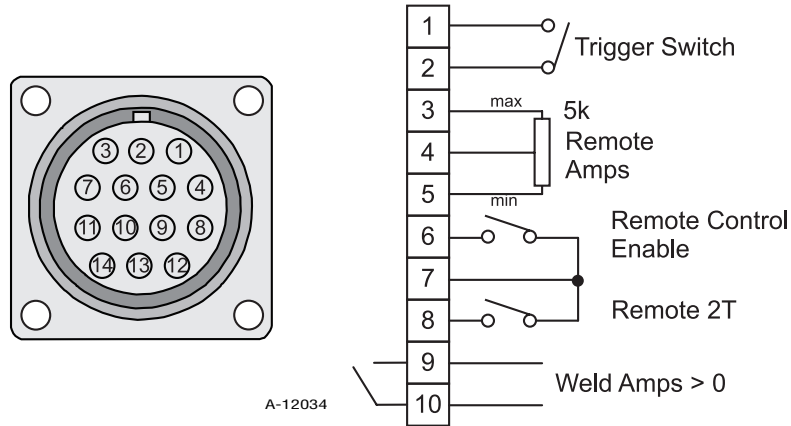
9. Remote Control Socket (Automation)

The 14 pin Automation Remote Control Socket is used to connect remote control devices to the welding power source.

To make connections, align keyway, insert plug, and rotate threaded collar fully clockwise.

The Automation Remote Control Socket is located on the rear of the Power Source.

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

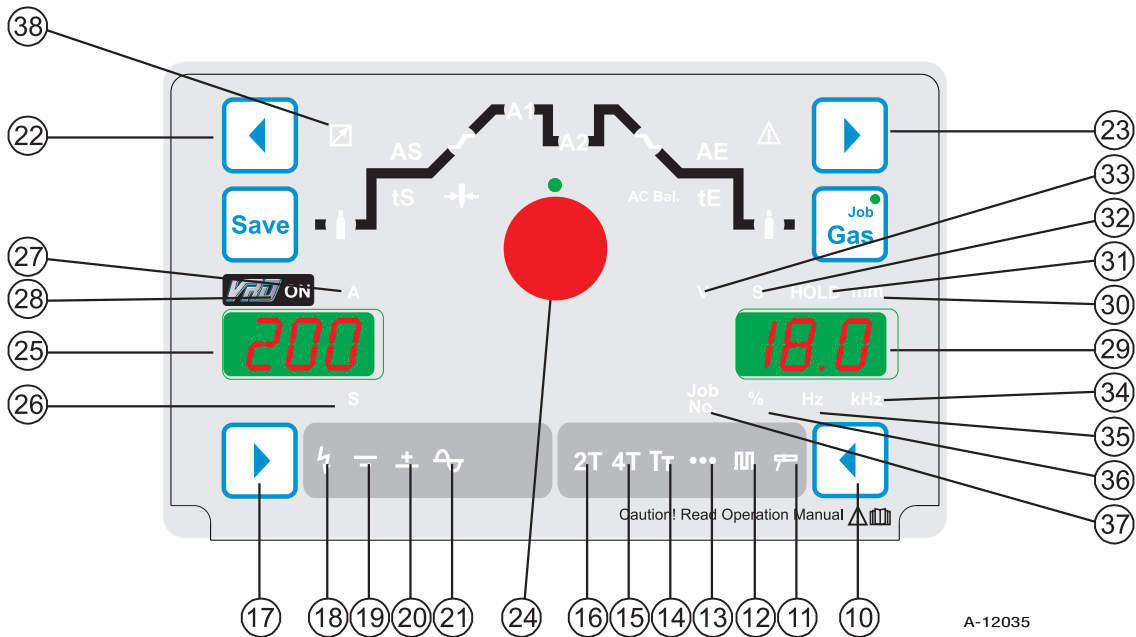


A-12034

Figure 4-3: 14 Pin Remote Control Socket

Socket Pin	Part Number / Description
1	Trigger Switch Input
2	Trigger Switch Input
3	Remote Control 5k ohm Potentiometers Maximum
4	Remote Control 5k ohm Potentiometers Wiper
5	Remote Control 5k ohm Potentiometers Minimum
6	Remote Control Enable (Short to common to enable remote control)
7	Common
8	Remote 2T (short to common to select remote control active in 2T operation mode only)
9	Volt free relay contact, Weld Amps > 0A
10	Volt free relay contact, Weld Amps > 0A
11	Not used
12	Not used
13	Not used
14	Not used

Table 4-2: 14 Pin Interconnection Control Plug Configuration



A-12035

Figure 4-4: Control Panel Weld Mode & Meter Displays

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

10. Welding Mode Button

Press the MODE button to select the Welding Process mode. Available modes are GTAW 2T, GTAW 4T, GTAW Spot, GTAW Pulse 2T, GTAW Pulse 4T, and MMAW.

11. MMAW indicator light

This light will illuminate when the power source is in MMAW welding mode.

12. Pulse indicator light

This light will illuminate when the power source is in GTAW Pulse 2T or 4T welding mode.

13. Spot indicator light

This light will illuminate when the power source is in GTAW SPOT welding mode.

14. Tiptronic indicator light (Refer to Section 4.05)

This light will illuminate when the power source is in TIPTRONIC welding mode and a saved job has been loaded.

15 4T (latch) indicator light

This light will illuminate when the power source is in GTAW 4T welding mode.

This mode of welding is mainly used for long welding runs to reduce operator fatigue. In this mode the operator can press and release the torch trigger and the output will remain active. To deactivate the power source, the trigger switch must again be depressed and released, thus eliminating the need for the operator to hold the torch trigger.

Note that when operating in GTAW (TIG mode), the power source will remain activated until the selected downslope time has elapsed.

16. 2T (normal) indicator light

This light will illuminate when the power source is in GTAW 2T welding mode.

In this mode, the torch trigger must remain depressed for the welding output to be active. Press and hold the torch trigger to activate the power source (weld). Release the torch trigger switch to cease welding.

17. Welding Type Button

Press the TYPE button to select the Welding Type mode.

In MMAW (Stick) mode, the available modes are Electrode DC-, Electrode DC+.

In GTAW (Tig) mode, the available modes are Electrode DC-, HF Electrode DC-, AC and HF AC.

18. HF (high frequency) indicator light

This light will illuminate when the power source is in GTAW 2T or 4T HF welding mode.

19. Electrode Negative indicator light

This light will illuminate when the power source is in Electrode Negative welding mode on the top welding terminal. (DC Output)

20. Electrode Positive indicator light

This light will illuminate when the power source is in Electrode Positive welding mode on the top welding terminal. (DC Output)

21. Electrode AC indicator light

This light will illuminate when the power source is in Electrode AC welding mode on the top welding terminal. (AC Output)

22. BACK Welding Parameter Button

Press the BACK welding parameter button to scroll left through the available welding parameters.

23. FORWARD Welding Parameter Button

Press the FORWARD welding parameter button to scroll right through the available welding parameters.

24. Multi Function Control

Turn the MULTI FUNCTION CONTROL to adjust the available welding parameters.

When not welding, the Multi Function Control is used to adjust all welding parameters, including welding amps. A short press on the Scroll Left or Scroll Right button will save the welding parameter value, then increment / decrement to the next available welding parameter. The welding parameter LED will illuminate and the Multi Function Control will then adjust the selected welding parameter. The parameter code and parameter value are shown on the meters and the LED's next to the meter indicate if the parameter is Amps, Seconds, mm, %, kHz or Hz.

During welding, adjustment of the Multi Function Control will adjust the selected parameter.

25. Digital Ammeter / Parameter Codes

The digital amperage meter is used to display both the pre-set current and actual output current of the power source. It is also used to display Welding Parameter Codes.

Depending on the Welding Parameter selected, the status indicator adjacent to the ammeter will illuminate to show the units of the welding parameter.

When welding, the amperage meter will display actual welding current.

At the completion of welding, the amperage meter will hold the last recorded amperage value for a period of approximately 10 seconds. The amperage meter will hold the value until; (1) any of the front panel controls are adjusted in which case the unit will revert to preview mode, (2) welding is recommenced, in which case actual welding amperage will be displayed, or (3) a period of 10 seconds elapses following the completion of welding in which case the unit will return to preview mode.

26. Seconds indicator light

This light will illuminate when Seconds are being shown on the Digital Ammeter Display.

27. Amps indicator light

This light will illuminate when Amps are being shown on the Digital Ammeter Display.

28. VRD (Voltage Reduction Device) indicator light

A VRD (voltage reduction device) is a hazard reducing device designed to reduce electric shock hazards present on the output of welding power source when operating in MMAW (stick) mode. Note that the presence of VRD should not be used as a substitute for the use of appropriate safety practices as indicated in section one of this manual.

The VRD indicator light only operates in MMAW (stick) mode.

The VRD light illuminates when the VRD function is active. Under this condition the open circuit voltage of the unit is limited to below 23V DC, thus reducing the potential of serious electric shock (such as when changing electrodes).

29. Digital Voltmeter / Parameter meter

The digital volt meter is used to display the actual output voltage of the power source. It is also used to display Welding Parameters.

Depending on the Programming Parameter selected, the status indicator adjacent to the volt meter will illuminate to show the units of the welding parameter.

When welding, the volt meter will display actual welding voltage.

At the completion of welding, the volt meter will hold the last recorded voltage value for a period of approximately 10 seconds. The volt meter will hold the value until; (1) any of the front panel controls are adjusted, (2) welding is recommenced, or (3) a period of 10 seconds elapses following the completion of welding.

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

30. mm indicator light

This light will illuminate when “mm” are being shown on the Digital Volt meter Display for electrode diameter size.

31. HOLD indicator light

This light will illuminate when the HOLD function is active on the Digital Display at the completion of welding.

32. Seconds indicator light

This light will illuminate when Seconds are being shown on the Digital Volt meter Display.

33. Volts indicator light

This light will illuminate when Volts are being shown on the Digital Volt meter Display.

34. kHz (frequency) indicator light

This light will illuminate when kHz (frequency) is being shown on the Digital Volt meter Display.

35. Hz (frequency) indicator light

This light will illuminate when Hz (frequency) is being shown on the Digital Volt meter Display.

36. % (percentage) indicator light

This light will illuminate when % (percentage) is being shown on the Digital Volt meter Display.

37. Job Number indicator light

This light will illuminate when Job Number is being shown on the Digital Volt meter Display.

38. Remote Control indicator light

This light will illuminate when the Remote Control is active.

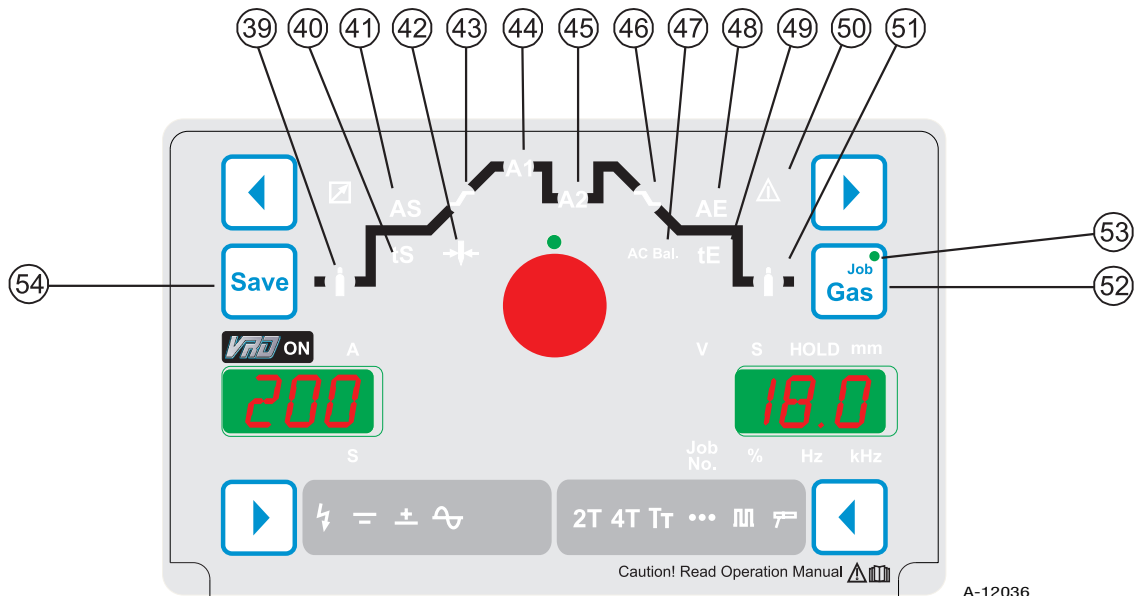


Figure 4-5: Control Panel

39. Pre Flow indicator light

This light will illuminate when the Pre Flow Welding Parameter is selected.

40. Initial Current time (GTAW) and Hot Start time (MMAW) indicator light

This light will illuminate when the Initial Current Time Welding Parameter is selected in GTAW mode, or when Hot Start Time Welding Parameter is selected in MMAW mode.

41. Initial Current amps (GTAW) and Hot Start amps (MMAW) indicator light

This light will illuminate when the Initial Current Amps Welding Parameter is selected in GTAW mode, or when Hot Start Amps Welding Parameter is selected in MMAW mode.

42. Electrode Diameter indicator light

This light will illuminate when the Electrode Diameter Welding Parameter is selected.

43. Up Slope indicator light

This light will illuminate when the Up Slope Welding Parameter is selected.

44. Base Current indicator light

This light will illuminate when the Base Current Welding Parameter is selected.

45. Trough Current indicator light

This light will illuminate when the Trough Current Welding Parameter is selected.

46. Down Slope indicator light

This light will illuminate when the Down Slope Welding Parameter is selected.

47. AC Balance indicator light

This light will illuminate when the AC Balance Welding Parameter is selected.

48. Crater Current indicator light

This light will illuminate when the Crater Current Welding Parameter is selected.

49. Crater Current time indicator light

This light will illuminate when the Crater Current Time Welding Parameter is selected.

50. Electrode Diameter Out-of-Range indicator light

This light will illuminate when the set welding current is outside the normal operating range for the selected Electrode Diameter.

51. Post Flow indicator light

This light will illuminate when the Post Flow Welding Parameter is selected.

52. Gas Purge Button

Press and hold the GAS button to purge the gas line in all GTAW operating modes.

53. Tip Tronic indicator light (Refer to Section 4.06)

This light will illuminate when an active TipTronic job is selected.

54. Save Tip Tronic Job Button

Press the SAVE button to save the current TipTronic Job settings in the selected memory location

Up to 100 jobs can be saved arranged as 10 banks of 10 jobs.

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

4.02 Setup for TIG (GTAW) Welding

- A. Select a GTAW operation mode with the welding mode & welding type buttons (refer to Section 4.03 for further information).
- B. Connect the TIG Torch to the Electrode welding terminal (top). Welding current flows from the power source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.
- C. Connect the work lead to the Worklead welding terminal (bottom). Welding current flows from the Power Source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.



CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the bayonet terminal.

- D. Connect the TIG torch trigger switch via the 8 pin socket located on the front of the power source as shown below. The TIG torch will require a trigger switch to operate in Lift TIG or HF TIG Mode.

NOTE

If the TIG torch has a remote TIG torch current control fitted then it will require to be connected to the 8 pin socket. (Refer to section 4.01 Remote Control Socket for further information).

- E. Fit the welding grade shielding gas regulator/flowmeter to the shielding gas cylinder (refer to Section 4.12) then connect the shielding gas hose from the regulator/flowmeter outlet gas INLET on the rear of the Transtig 220 AC/DC or 300 AC/DC Power Source. Connect the gas hose from the TIG torch to the gas OUTLET on the front of the Transtig 220 AC/DC or 300 AC/DC Power Source.



WARNING

Before connecting the work clamp to the work make sure the mains power supply is switched off.

Secure the welding grade shielding gas cylinder in an upright position by chaining it to a suitable stationary support to prevent falling or tipping.

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

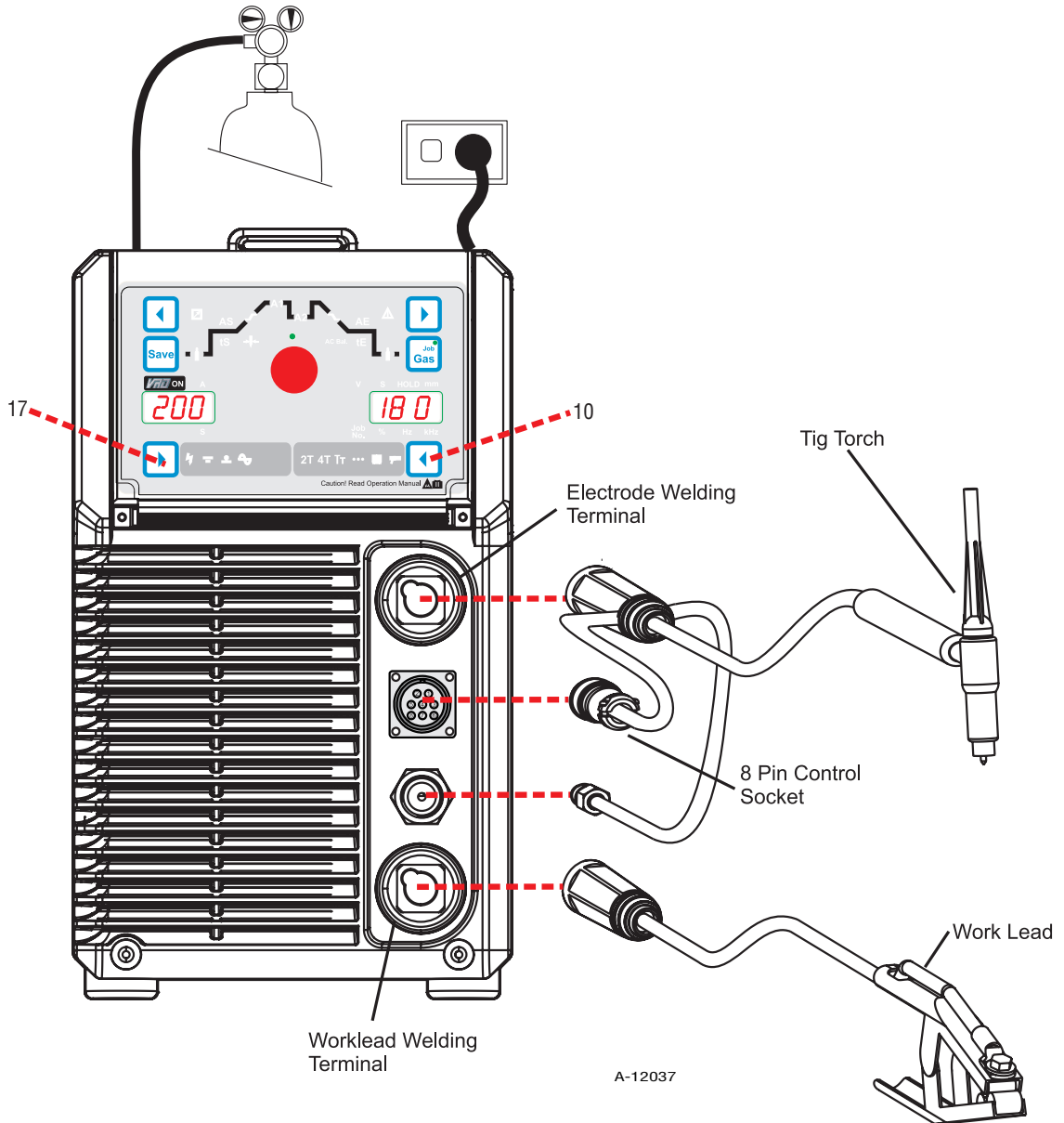


Figure 4-6: Setup for TIG Welding

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

- First, select a Welding Type by pressing the Weld Type (17) button.

Welding Type	Welding Type Selection
DC HF TIG	
AC Lift TIG	
DC Lift TIG	
AC HF TIG	

- Then, select a Welding Mode by pressing the WELDING MODE (10) button.

Welding Mode	Welding Mode Selection
2T (Normal Mode)	
4T (Latch Mode)	
Tip Tronic (used to recall saved jobs)	
Spot Mode	
2T Pulse Welding (Normal Mode)	
4T Pulse Welding (Latch Mode)	

4.03 TRANSTIG 220AC/DC and 300AC/DC - TIG (GTAW) Programming Mode

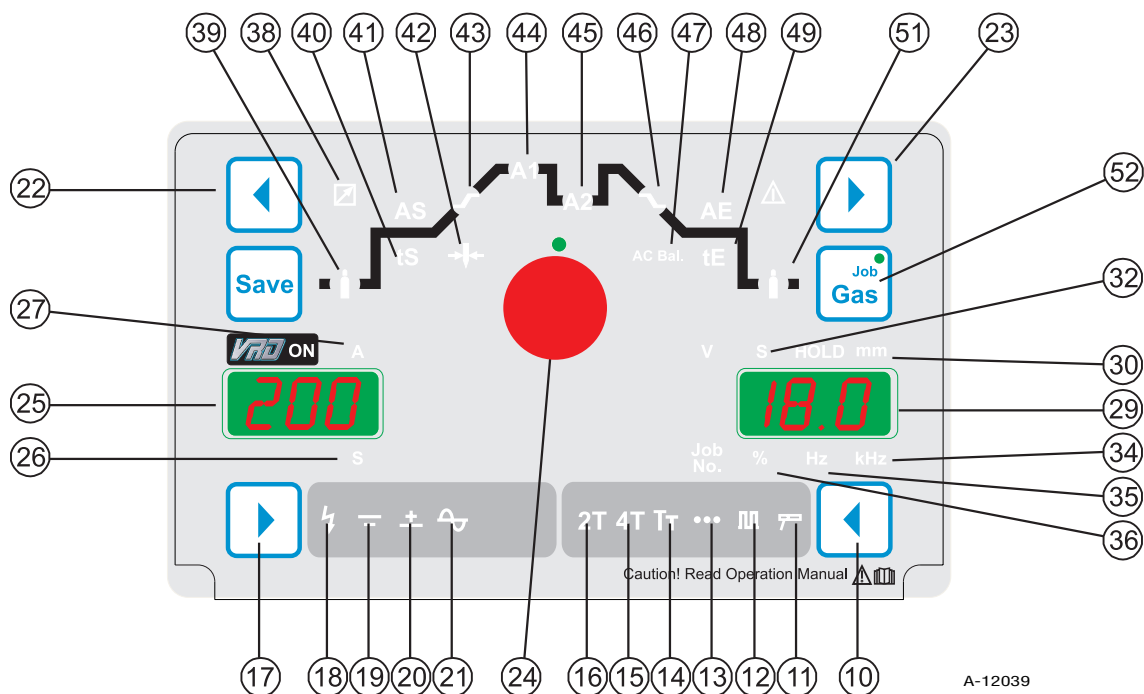


Figure 4-7: TIG Programming Mode

- Press the WELDING MODE (10) button to select the appropriate GTAW mode. Several GTAW operating modes are available.
 - 2T (normal mode). The 2T LED (16) will illuminate.
 - 4T (latch mode). The 4T LED (15) will illuminate.
 - Tiptronic. The TIPTRONIC Led (14) will illuminate
 - SPOT mode. The SPOT LED (13) will illuminate.
 - 2T PULSE (normal mode). The 2T LED (16) and PULSE Led (12) will illuminate.
 - 4T PULSE (latch mode). The 4T LED (15) and PULSE Led (12) will illuminate.
- Press the WELDING TYPE (17) button to select the welding output type. Several GTAW operating modes are available.
 - AC welding output mode. The AC Led (21) will illuminate.
 - DC Negative welding output mode. The DC Negative Led (19) will illuminate.
 - HF AC welding output mode. The HF Led (18) and the AC Led (21) will illuminate.
 - HF DC Negative welding output mode. The HF Led (18) and the DC Negative Led (19) will illuminate.



WARNING

In HF operating mode, high voltage pulses are generated within the power source, to provide contactless initiation of the GTAW welding arc. If HF operating mode is selected, high voltage will be present on the tungsten electrode when the trigger is pressed. Never touch the tungsten welding electrode of any parts in the welding circuit when the trigger is pressed.

- Press the BACK button (22) or FORWARD button (23) so the Electrode Diameter Led (42) and mm LED (30) are illuminated.

Use the Multi Function Control (24) to adjust the Electrode size being used.

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- Press the BACK button (22) or FORWARD button (23) until the Base Current A1 Led (44) is illuminated.

Use the Multi Function Control (24) to adjust the Welding Current for the Electrode size being used. If the Welding Current does not match the normal operating range of the electrode the Electrode Diameter Out-of-Range indicator Led (50) will illuminate.







If the Electrode Diameter Out-of-Range indicator Led (50) is illuminated, it is still possible to weld.

Note that other parameters may need to be set, according to the operating mode selected, Please refer to the tables below.

GTAW Electrode Diameter (mm)	Nominal Welding Current (A) DC	Nominal Welding Current (A) AC
1.0	3 - 40 Amps	5 - 30 Amps
1.6	15 - 130 Amps	20 - 90 Amps
2.0	45 - 180 Amps	45 - 135 Amps
2.4	70 - 240 Amps	70 - 180 Amps
3.2	140 - 320 Amps	130 - 250 Amps
4.0 (not selectable on Transtig 220AC/DC)	220 - 450 Amps	200 - 320 Amps

Table 4-3: Normal Welding Current for GTAW Electrode size

Note that Normal recommended Welding Current AC Amps are dependent on the type of electrode and on the AC Balance Parameter setting.

Parameter	Range	LED Code (Left Display)	Parameter Value (Right Display)	Factory Setting
Shielding Gas Pre-Flow time This parameter operates in GTAW modes only and is used to provide gas to the weld zone prior to striking the arc, once the torch trigger switch has been pressed. This control is used to dramatically reduce weld porosity at the start of a weld.	0.1-10.0 seconds		S 	0.1
Start Current AS This parameter operates in GTAW modes only and is used to set the start current for TIG. In 4T mode the Initial Current remains on until the torch trigger switch is released after it has been depressed. In 2T mode the Initial Current remains on for the Start Current Time tS and then the Up Slope current ramp will commence.	5 – 200% of Welding Current A1 The maximum welding current in GTAW mode is limited to 220 for the Transtig 220AC/DC and 300A for the Transtig 300AC/DC	A  When A1=100A	 %	50
Start Current Time tS (2T normal mode only) This parameter operates in 2T GTAW modes only and set the time the Start Current is active, after which the Up Slope current ramp will commence.	0 - 20 seconds		S 	0.1

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<p>Up Slope Time This parameter operates in GTAW modes only and is used to set the time for the weld current to ramp up from Initial current to welding current.</p>	0 - 99%	<div style="border: 1px solid green; padding: 5px; text-align: center;">0.5 s</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">5 %</div>	5
<p>Welding Current A1 Transtig 220AC/DC Transtig 300AC/DC</p>	3 - 220 A 5 - 300 A	<div style="border: 1px solid green; padding: 5px; text-align: center;">100 A</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">0.0 V</div>	100
<p>Trough Current A2 This parameter operates in GTAW Pulse modes only and sets the GTAW TROUGH current. The lowest point in the pulse is called the Trough.</p>	1 – 200% of Welding Current A1 The maximum welding current in GTAW mode is limited to 220 for the Transtig 220AC/DC and 200A for the Transtig 300AC/DC	<div style="border: 1px solid green; padding: 5px; text-align: center;">50 A</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">50 %</div>	50
<p>Down Slope Time This parameter operates in GTAW modes only and is used to set the time for the weld current to ramp down to the crater current. This control is used to eliminate the crater that can form at the completion of a weld.</p>	0 – 99%	<div style="border: 1px solid green; padding: 5px; text-align: center;">3.0 s</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">20 %</div>	20
<p>Crater Current AE This parameter operates in GTAW modes only. This is the current at the end of the down slope current ramp. The welding current will remain at the Crater Current value until the Crater Current Time has elapsed, at which time the welding current will cease and the unit will enter Post Flow mode. This control is used to eliminate the crater that can form at the completion of a weld.</p>	5 – 200% of Welding Current A1 The maximum welding current in GTAW mode is limited to 220 for the Transtig 220AC/DC and 200A for the Transtig 300AC/DC	<div style="border: 1px solid green; padding: 5px; text-align: center;">25 A</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">25 %</div>	25
<p>Crater Current Time tE This parameter operates in GTAW modes only and is used to set the time for the crater current before entering post flow mode. This control is used to eliminate the crater that can form at the completion of a weld.</p>	0 – 20 seconds	<div style="border: 1px solid green; padding: 5px; text-align: center;"> </div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">0.2 s</div>	0.2
<p>Shielding Gas Post-Flow time This parameter operates in GTAW modes only and is used to adjust the post gas flow time once the arc has extinguished. This control is used to dramatically reduce oxidation of the tungsten electrode.</p>	20 – 500%	<div style="border: 1px solid green; padding: 5px; text-align: center;">5.0 s</div>	<div style="border: 1px solid green; padding: 5px; text-align: center;">100 %</div>	100

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<p>AC balance (AC Output Mode only)</p> <p>This parameter operates in AC GTAW modes and is used to set the penetration to cleaning action ratio for the AC weld current. Generally WAVE BALANCE is set to 50% for AC STICK welding. The WAVE BALANCE control changes the ratio of penetration to cleaning action of the AC TIG welding arc. Maximum weld penetration is achieved when the WAVE BALANCE control is set to 10%. Maximum cleaning of heavily oxidised aluminium or magnesium alloys is achieved when the WAVE BALANCE control is set to 65%.</p>	10 – 90% positive welding current		 35 %	35
<p>Electrode Diameter</p> <p>Transtig 220AC/DC Transtig 300AC/DC</p> <p>Set this parameter to the tungsten electrode size being used.</p>	1.0 – 3.2 1.0 – 4.0		 2.4 mm	2.4
<p>AC frequency</p> <p>This parameter operates in AC mode only and is used to set the frequency for the AC weld current</p>	30 – 200Hz		 60 Hz	60
<p>Spot Welding Time</p> <p>This parameter sets the spot welding time</p>	0.01 – 10.0 seconds		 1.0 s	1.0
<p>Spot Welding Dwell Time (only available with Spot Welding Dwell Time enabled, refer to secondary parameters)</p> <p>This parameter sets the dwell (off) time between repeated spot welds (Refer to Section 4.05).</p>	0.09 – 60.0 seconds		 1.0 s	1.0
<p>Pulse Frequency</p> <p>This parameter sets the Pulse Frequency when in GTAW Pulse operating mode.</p>	0.2 – 2000Hz		 2.0 Hz	2
<p>Pulse Duty Factor</p> <p>This parameter sets the percentage “on” time of the Pulse Frequency for welding weld current when in Pulse operating mode</p>	1 – 99% of Welding Current A1		 50 %	50

Table 4-4: GTAW Main Parameters

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AC BALANCE is used for aluminium welding in AC HF GTAW or AC LIFT GTAW operating modes

It is used to set the ratio of penetration to cleaning action for the AC GTAW welding arc.

Maximum weld penetration is achieved when the AC BALANCE is set to 10%. Maximum cleaning of heavily oxidised aluminium or magnesium alloys is achieved when the WAVE BALANCE is set to 90%.

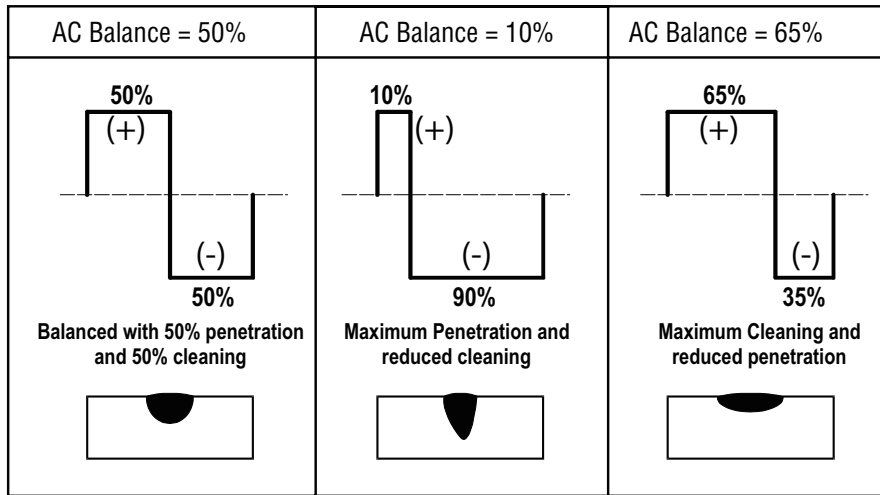


Table 4-5: AC GTAW Wave Balance

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4.04 TIG (GTAW) Welding Secondary Parameters

Secondary parameters are available. These are required to be set separately.

- Press and hold the WELDING MODE (10) button then press the SAVE (54) button.
- Press the BACK button (22) or FORWARD button (23) to select the Parameter.
- Use the Multi Function Control (24) to adjust the parameter.
- Note that some parameters are only available in certain welding modes.

Note that even during welding, these settings can be adjusted and changed.













Parameter	Range	LED Code (Left Display)	Parameter Value (Right Display)	Factory Setting
Ignition Peak Correction The ignition peak current is set after ignition to provide stabilisation of the arc. A different peak current is saved for each selected tungsten electrode diameter.	10-200%			100
Plus terminal Correction Ignition using the positive welding terminal is used for optimum dome formation in AC GTAW welding. A different plus terminal current is saved for each selected tungsten electrode diameter.	10 – 200 %			100
AC Arc Type This enables working with low noise arc with good re-ignition. For pure aluminium it may be necessary to switch to the ACH Hard Arc type	ACS (standard) ACH (hard)			ACS
Software Version Information				3.02
Slope On / Off The up slope and down slope can be disabled. When this feature is set to OFF, current increase, current decrease, initial current and crater current are not available in the main parameters.	ON OFF			ON
Spot Welding Dwell Time (enable / disable (refer main parameters)	ON OFF			OFF

Table 4-6: GTAW Secondary Parameters

4.05 GTAW Spot Welding Mode with DWELL Time (Stitch Mode)

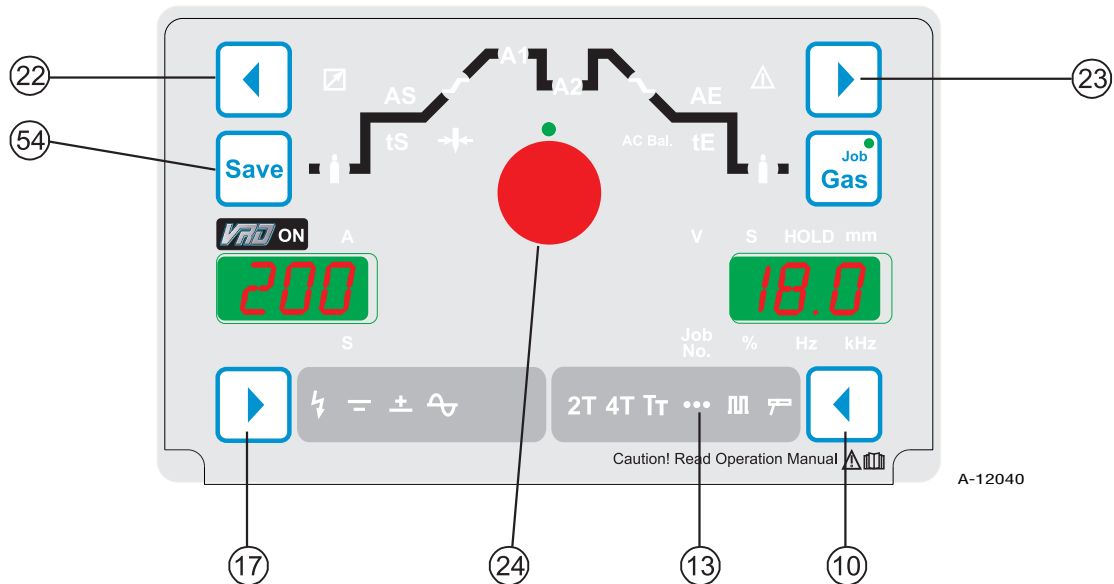


Figure 4-8: GTAW Spot Welding Mode with DWELL Time

To enable Spot Welding with Dwell Time (Stitch welding) the parameter “PSP” needs to be set to ON (refer secondary parameters) it is possible to have automated spot welds with this Stitch function.

In 2T mode, the stitch welds are repeated for as long as the trigger is held in.

In 4T mode, press and release the trigger to start the stitch welds, press and release the trigger to end the stitch welds

The parameters tSP and tSO determine the spot time length and the dwell (off) time length

- Press the WELDING MODE (10) button to select GTAW SPOT mode. SPOT mode. The SPOT LED (13) will illuminate.
- Press the WELDING TYPE (17) button to select the welding output type
- Press the BACK button (22) or FORWARD button (23) so the Electrode Diameter Led (42) and mm LED (30) are illuminated.
Use the Multi Function Control (24) to adjust the Electrode size being used.
- Press and hold the WELDING MODE (10) button then press the SAVE (54) button.
- Press the BACK button (22) or FORWARD button (23) to select the “PSP” Parameter.
- Use the Multi Function Control (24) to set “PSP” to ON (to enable stitch welding
- Press the BACK button (22) or FORWARD button (23) until the Base Current A1 Led (44) is illuminated.

Use the Multi Function Control (24) to adjust the Welding Current for the Electrode size being used. If the Welding Current does not match the normal operating range of the electrode the Electrode Diameter Out-of-Range indicator Led (50) will illuminate.

- Press the BACK button (22) or FORWARD button (23) until the left display shows “tSP”.
- Use the Multi Function Control (24) to set the required SPOT “ON” time required.
- Press the BACK button (22) or FORWARD button (23) until the left display shows “tSO”.
- Use the Multi Function Control (24) to set the required SPOT “DWELL or OFF” time required.

If the Electrode Diameter Out-of-Range indicator Led (50) is illuminated, it is still possible to weld.

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4.06 Tip Tronic Operation

In GTAW modes, up to 100 jobs can be saved. These are arranged as 10 jobs numbers, in 10 job sets.

These are shown on the meter displays. The first number on the display is the job set, the second is the job number. In the example, the job set is 2 and the job number is 9.

Saved TipTronic jobs can also be set as active or inactive.

Inactive jobs are skipped during TipTronic job selection.



TipTronic Operation

- Using the Welding Mode button (10) select TipTronic mode (14).
- Use the Multi Function Control (24) to select the job set number and the job number.
Note that if no TipTronic jobs are saved, it will not be possible to select any TipTronic jobs.
- Use the BACK button (22) or FORWARD button (22) to switch between TipTronic jobs and all main parameters.

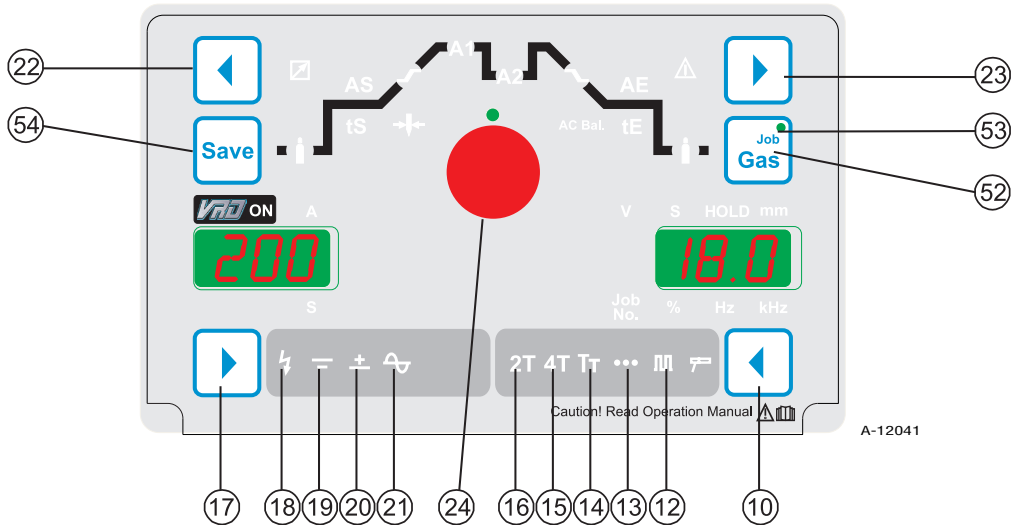


Figure 4-9: Tip Tronic Operation

Save a TipTronic Job

- Set all the required GTAW welding parameters. Using the Welding Mode button (10) and the Welding Type button (17).

Do NOT select TipTronic mode (14) at this stage.

As an example, we may select HF, AC, 4T Pulse GTAW (LED's 18, 21, 16 and 12 will be illuminated).

- Press the SAVE button (54).

The display will show the Job Number identification, the job set and job number.

- Use the Multi Function Control (24) to select the job set number and the job number.
- Press and hold the SAVE button (54) until all LED's illuminate briefly to indicate a Save has been completed.

Note that you can interrupt the Save process, by simply briefly pushing the SAVE button (54)



Load a TipTronic Job

- Using the Welding Mode button (10) select TipTronic mode (14).
- Use the Multi Function Control (24) to select the job set number and the job number.



Set a TipTronic Job as Inactive

- Press the SAVE button (54).
The display will show the Job Number identification, the job set and job number.
- Use the Multi Function Control (24) to select the job set number and the job number.
- Press the GAS button (52).
- The TipTronic job is now inactive. Note that the JOB LED (53) will extinguish.
- To exit this mode, press the SAVE button (54).



Set a TipTronic Job as Active

- Press the SAVE button (54).
The display will show the Job Number identification, the job set and job number.
- Use the Multi Function Control (24) to select the job set number and the job number.
- Press the GAS button (52).
- The TipTronic job is now active. Note that the JOB LED (53) will illuminate.
- To exit this mode, press the SAVE button (54).



Copy a TipTronic Job to another Job Number

- Using the Welding Mode button (10) select TipTronic mode (14).
- Use the Multi Function Control (24) to select the “source” job set number and the job number.
In our example we are copying from Job Number 2-9.
- Press the SAVE button (54).



- Use the Multi Function Control (24) to select the “destination” job set number and the job number. In our example we are copying to Job Number 6-7.
- Press and hold the SAVE button (54) until all LED's illuminate briefly to indicate a Save has been completed



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4.07 Setup for STICK (MMAW) Welding

- A. Connect the Electrode Holder lead to the Electrode welding terminal (top). If in doubt, consult the electrode manufacturer. Welding current flows from the Power Source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.
- B. Connect the work lead to the Worklead welding terminal (bottom). If in doubt, consult the electrode manufacturer. Welding current flows from the power source via heavy duty bayonet type terminals. It is essential, however, that the male plug is inserted and turned securely to achieve a sound electrical connection.
- C. Select STICK and electrode positive mode with the welding mode and welding type buttons (refer to Section 4.08 for further information)



WARNING

Before connecting the work clamp to the work and inserting the electrode in the electrode holder make sure the mains power supply is switched off.



CAUTION

Remove any packaging material prior to use. Do not block the air vents at the front or rear of the Welding Power Source.



CAUTION

Loose welding terminal connections can cause overheating and result in the male plug being fused in the bayonet terminal.

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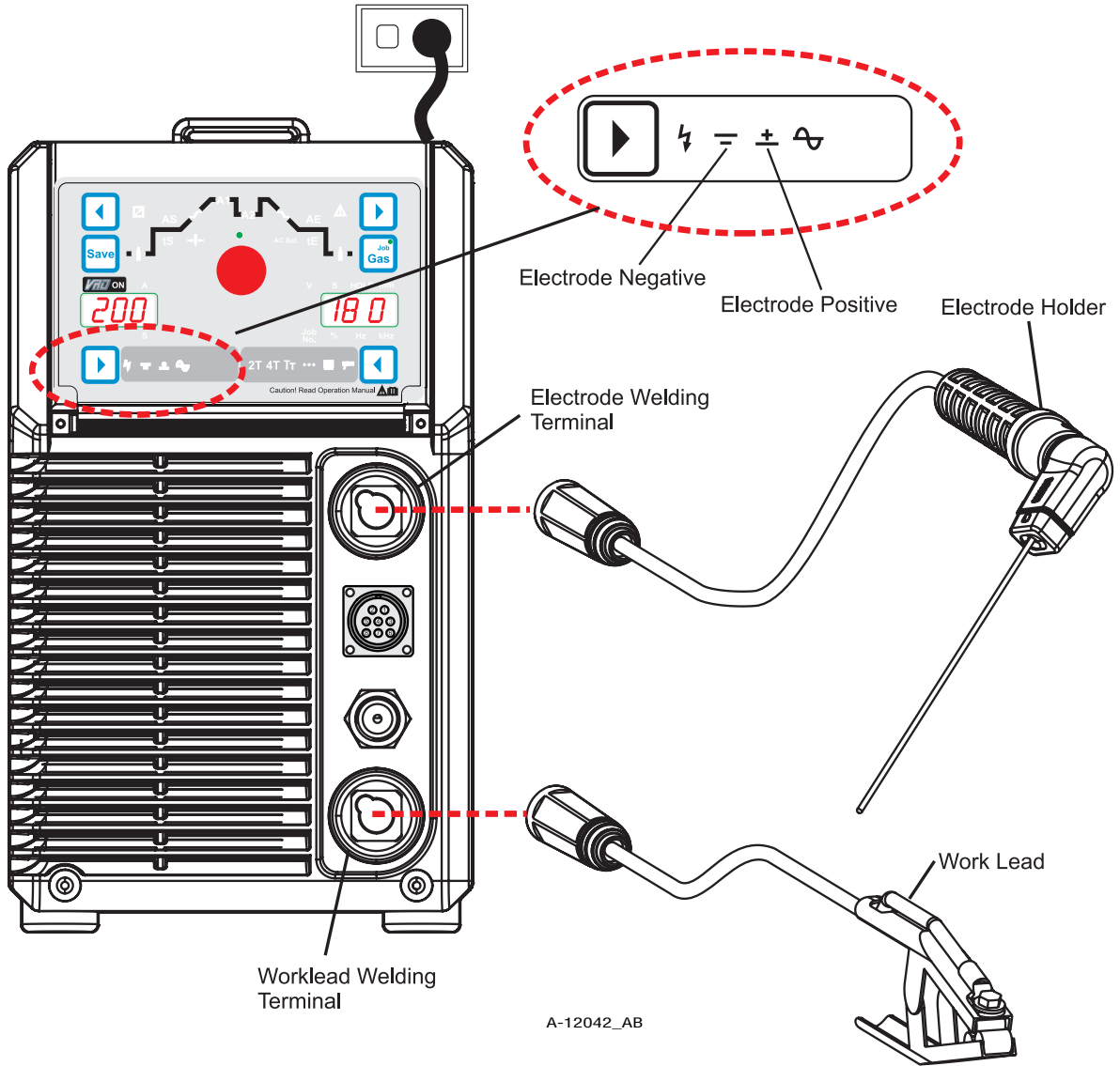


Figure 4-10: Setup for Manual Arc Welding.

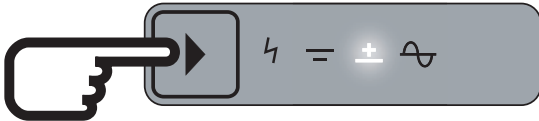
- First, select Stick Mode by pressing the Welding Mode (10) button.

Welding Type	Welding Mode Selection
Stick Mode	

- Then, select Welding Type by pressing the welding Type (17) button.

Welding Type	Welding Type Selection
DC Negative Stick	

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Welding Type	Welding Type Selection
DC Positive Stick	

4.08 TRANSTIG 220AC/DC and 300AC/DC- STICK (MMAW) Programming Mode

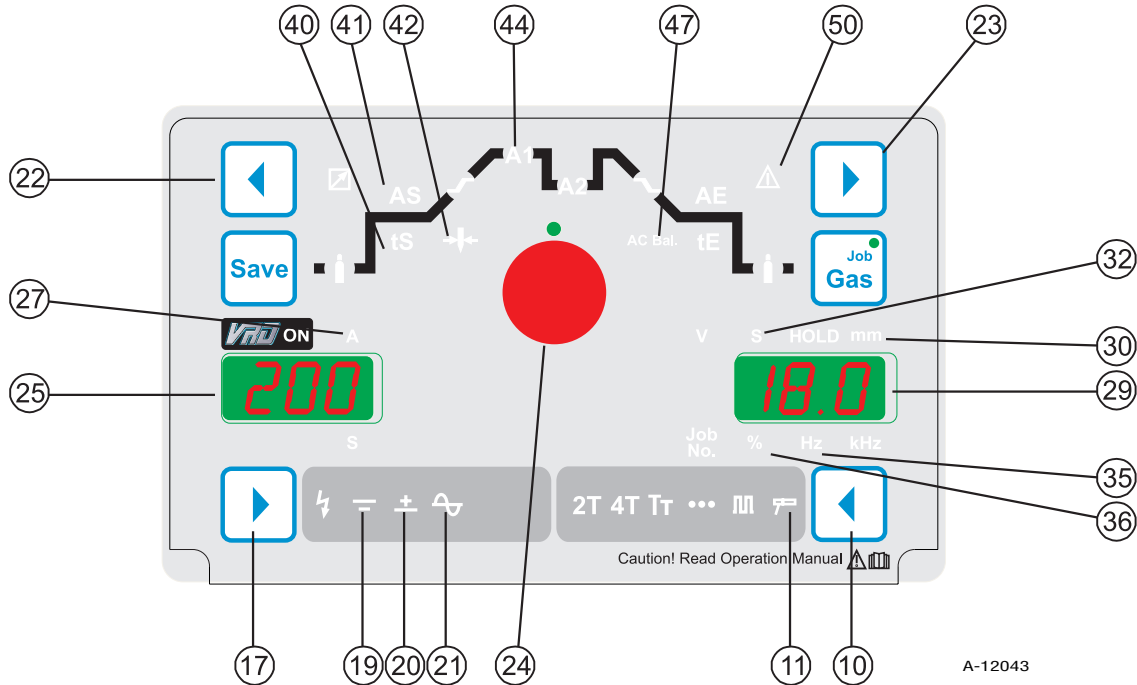


Figure 4-11: Stick Programming Mode

- Press the WELDING MODE (10) button to select MMAW mode. The MMAW Led (11) will illuminate.
- Following MMAW operating modes are available.
 - DC Negative mode. DC Negative Led (19) will illuminate.
 - DC Positive mode. DC Positive Led (20) will illuminate.
- Press the BACK button (22) or FORWARD button (23) so the Electrode Diameter Led (42) and mm LED (30) are illuminated.
 - Use the Multi Function Control (24) to adjust the Electrode size being used.
- Press the BACK button (22) or FORWARD button (23) so the Hot Start Amps Led (41) and % Led (36) are illuminated.
 - Use the Multi Function Control (24) to adjust the Hot Start Amps percentage.
- Press the BACK button (22) or FORWARD button (23) so the Hot Start Time Led (40) and Seconds Led (32) are illuminated.
 - Use the Multi Function Control (24) to adjust the Hot Start Amps Time.
- Press the BACK button (22) or FORWARD button (23) until the Base Current A1 Led (44) is illuminated.
 - Use the Multi Function Control (24) to adjust the Welding Current for the Electrode size being used. If the Welding Current does not match the normal operating range of the electrode the Electrode Diameter Out-of-Range indicator Led (50) will illuminate.

If the Electrode Diameter Out-of-Range indicator Led (50) is illuminated, it is still possible to weld.

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MMAW Electrode Diameter (mm)	Nominal Welding Current (A)
1.5	20 - 40 Amps
2.0	35 - 60 Amps
2.5	45 - 100 Amps
3.2	75 - 140 Amps
4.0	130 -190 Amps
5.0 (not selectable on Transtig 220AC/DC)	180 - 260 Amps

Table 4-7: Normal Welding Current for MMAW Electrode sizes









Parameter	Range	LED Code (Left Display)	Parameter Value (Right Display)	Factory Setting
Welding Current A1 Transtig 220AC/DC Transtig 300AC/DC	10 - 170A 10 - 200A	A 		100
Electrode Diameter Transtig 220AC/DC Transtig 300AC/DC Set this parameters to the electrode size being used.	1.5 - 4.0 1.5 - 5.0		mm 	2.5
Hot Start AS This parameter operates in MMAW mode and is used to improve the start characteristics for stick electrodes by adding current on top of the welding current. e.g. HOT START current = 125 amps when welding current = 100 amps & HOT START = 125%	5 - 200% of Welding Current A1 The maximum welding current in MMAW mode is limited to 170 for the Transtig 220AC/DC and 200A for the Transtig 300AC/DC	A  When A1=100A	 %	125
Hot Start Time tS This parameter sets the time period for when the Hot Start current is added to the welding current at the start of the weld.	0 - 20 seconds		S 	1.0

Table 4-8: MMAW Main Parameters

Secondary parameters are available. These are required to be set separately.

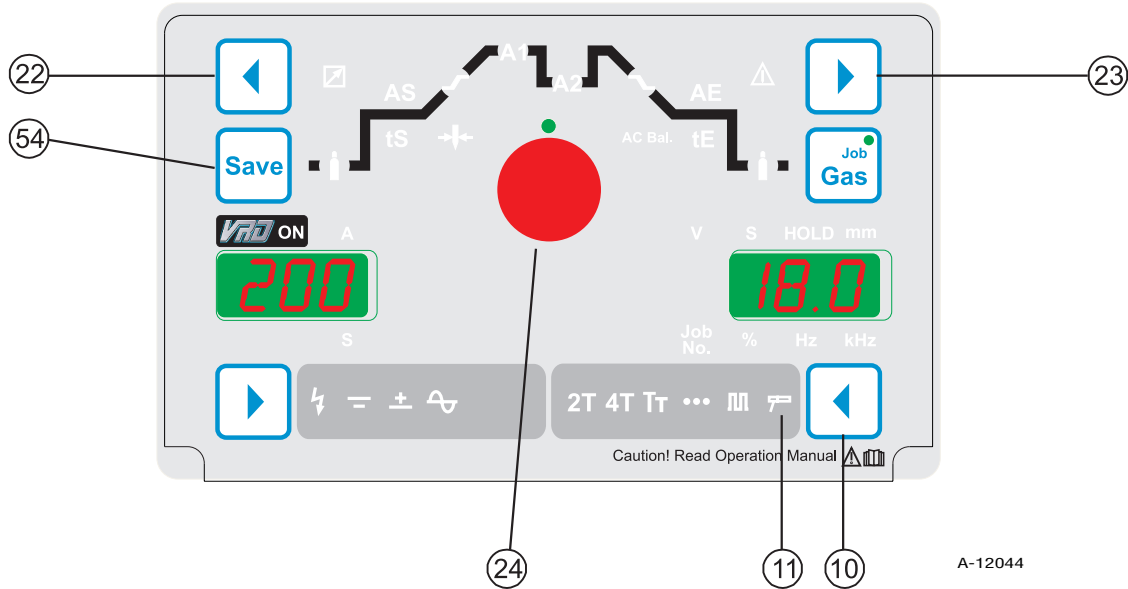


Figure 4-12: Stick Programming Mode

Press and hold the WELDING MODE (10) button then press the SAVE (54) button.

The Arc Dynamic Parameter is selected. In the left hand AMPS display dAr is displayed. In the right hand VOLTS display, the value of the parameter is displayed.

Use the Multi Function Control (24) to adjust the Arc Dynamic parameter.

Press the BACK button (22) or FORWARD button (23) to select the Software Version Number. In the left hand AMPS display rEL is displayed. In the right hand VOLTS display, the Software Version Number is displayed.

Note that even during welding, these settings can be adjusted and changed.

Parameter	Range	LED Code (Left Display)	Parameter Value (Right Display)	Factory Setting
Arc Dynamic (Arc Force) Arc Force is effective in MMAW Mode only. Arc Force control provides an adjustable amount of Arc Force (or "dig"). This feature can be particularly beneficial in providing the operator the ability to compensate for variability in joint fit-up in certain situations with particular electrodes. In general increasing the Arc Force control toward 200% (maximum Arc Force) allows greater penetration control to be achieved.	0 – 200% The welding current increases automatically as the welding voltage is reduced. The Arc Dynamic percentage indicates the ratio between the main current and the automatic increase.	dAr	100	100
Software Version Information		rEL	3.02	3.02

Table 4-9: MMAW Secondary Parameters

4.09 User Specific Menus and Dead Man Switch Mode

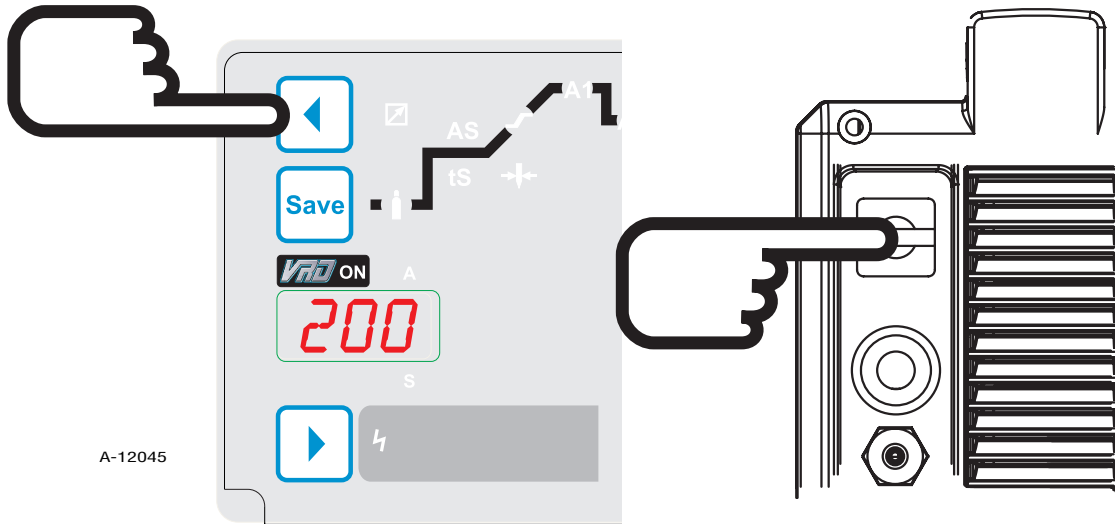


Figure 4-13: User Specific Menus and Dead Man Switch Mode

Switch off the power to the unit.

Press and hold the BACK Welding Parameter Button (22) .

Switch on the power to the unit.

The User Specific Menus are activated.

After the User Specific Menu items have been set, switch the power off to the unit to save the settings.

Menu item	Range	LED Code (Left Display)	Parameter Value (Right Display)	Factory Setting
<p>C02 – Water Pump Error Message Display</p> <p>Set this to “ON” if a water cooler without a suitable interface lead is being used.</p> <p>Set this to “OFF” if a water cooler with a suitable interface lead is being used.</p>	ON OFF	C02	On	ON
<p>C06 – Downslope Mode</p> <p>When set to “ON” in 4T mode, the downslope will continue even if the trigger is released during the downslope time.</p> <p>When set to “OFF” in 4T mode, the downslope will stop as soon as the trigger is released during the downslope time.</p>	ON OFF	C06	OFF	OFF

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<p>C08 – Foot Control Minimum Current (GTAW AC mode only) When set to “ON” the increased Foot Control Minimum current is disabled and the minimum current on any electrode is 5A.</p> <p>When set to “OFF” the increased Foot Control Minimum current is enabled.</p> <p>The minimum currents are: electrode 1.0 – 2.0mm (10A) electrode 2.4mm (15A) electrode 3.2mm (20A)</p>	ON OFF			OFF
<p>C09 – Dead Man Switch (MMAW mode only) When set to “ON” Dead Man Switch operating mode is enabled.</p> <p>When set to “OFF” Dead Man Switch operating mode is disabled.</p>	ON OFF			OFF

Table 4-10: User Specific Menus

4.10 MMAW (STICK) Dead Man Switch Mode

A special trigger mode called “Dead Man Switch” mode is available on the 220AC/DC and 300AC/DC when welding with MMAW (STICK) electrodes. In this mode, there will be no output voltage at all from the Power Source until the trigger is pressed. This provides the greatest level of safety for the operator, and is mandatory on some work sites.

While the Dead Man Switch function greatly increases operator safety, standard welding safety procedures should still be followed.

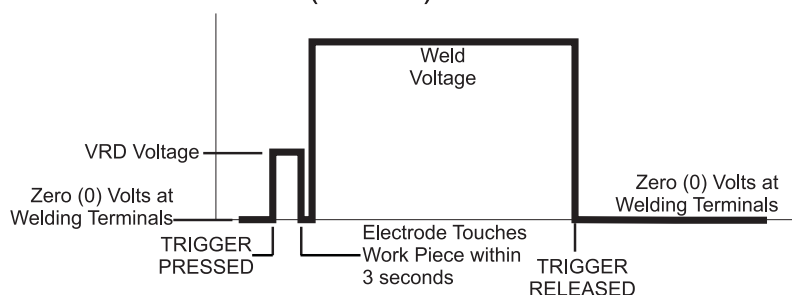
When the trigger is pressed, the VRD voltage is activated and the user can start welding as normal. For extra safety, if welding has not commenced within 3 seconds after the trigger is pressed, the Power Source will turn off the VRD, and the trigger must be released & pressed again to start welding.

If the trigger is released during welding, all welding power is shut off within the time limits of normal VRD operation.

A special MMAW (STICK) electrode holder is required for use with a Power Source fitted with the Dead Man Switch function. This electrode holder has a trigger switch attached to it, and a control cable that connects to the remote control socket of the Power Source.

The Dead Man Switch function is active in both 2T and 4T MMAW (STICK) mode.

2T MMAW (STICK) with Dead Man Switch



4T MMAW (STICK) with Dead Man Switch

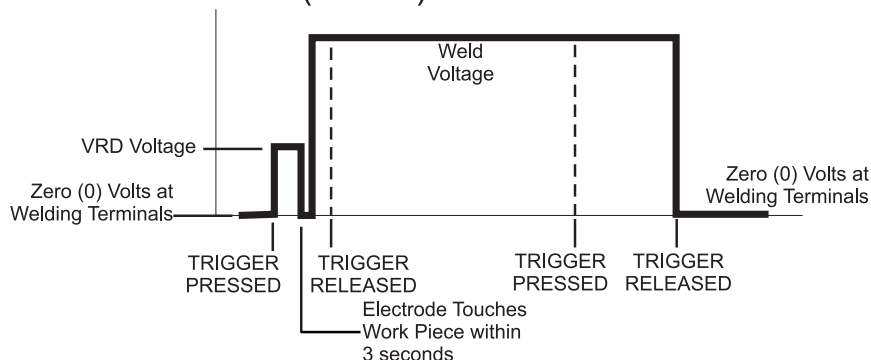


Figure 4-14: Dead Man Switch Function in Both 2T and 4T MMAW (STICK) Mode

Welding with the Dead Man Switch is as follows:

2T MODE

1. Press the trigger on the electrode holder.
2. The Power Source will now output the VRD volts and the VRD led will be lit.
3. Touch the MMAW (Stick) Electrode to the work and commence welding as usual.
4. Release the trigger to cease welding.

There will be 0V on the Power Source welding terminals and the VRD light will be off.

4T MODE

1. Press the trigger on the electrode holder.
2. The Power Source will now output the VRD volts and the VRD led will be lit.
3. Touch the MMAW (Stick) Electrode to the work and commence welding as usual.
4. Release the trigger and continue welding.
5. Press and release the trigger to cease welding.

There will be 0V on the Power Source welding terminals and the VRD light will be off.

In both 2T and 4T modes, if the MMAW (Stick) electrode is not touched to the work piece within three seconds, the welding output will be inhibited. Release the trigger to reset, and press the trigger again to reactivate the VRD.



Approval from a mine site manager, or work site manager must be obtained in writing before the Dead Man Switch function is altered. Only a suitably qualified electrical tradesperson or Cigweld Service Agent should make any changes to the Power Source.

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4.11 Special Function

Soft Reset

- Press and hold the BACK button (22).
- Press the SAVE button (54).
- All control panel LED's will light up briefly to confirm the Soft Reset has been completed.

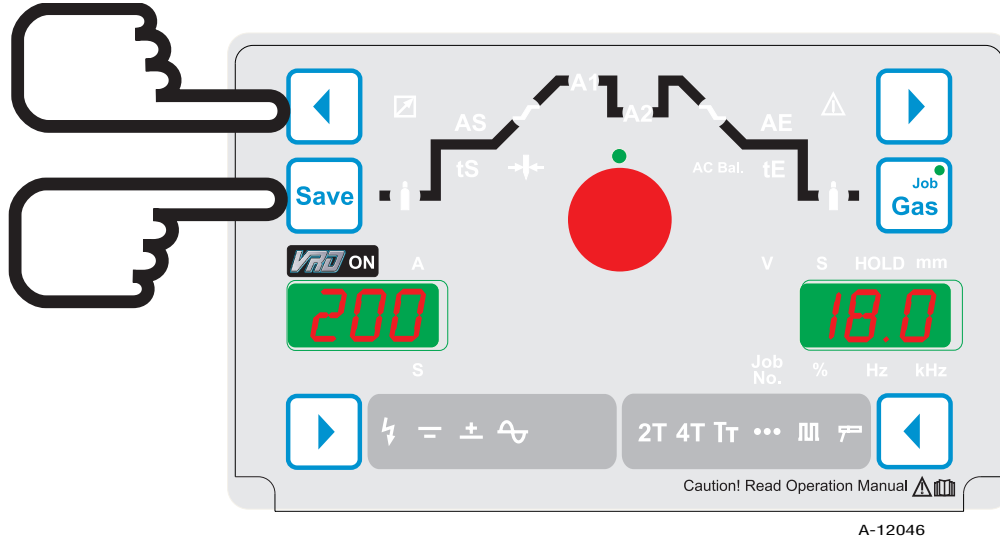


Figure 4-15: Soft Reset

Master Reset



*All saved TipTronic jobs will be erased.
All welding and secondary parameters will be restored to the factory setting.*

- Press and hold the BACK button (22).
- Press and hold the SAVE button (54).
- All control panel LED's will light up briefly to confirm the Soft Reset has been completed. After 5 seconds all the control panel LED's will light again briefly to confirm the Master Reset has been completed.

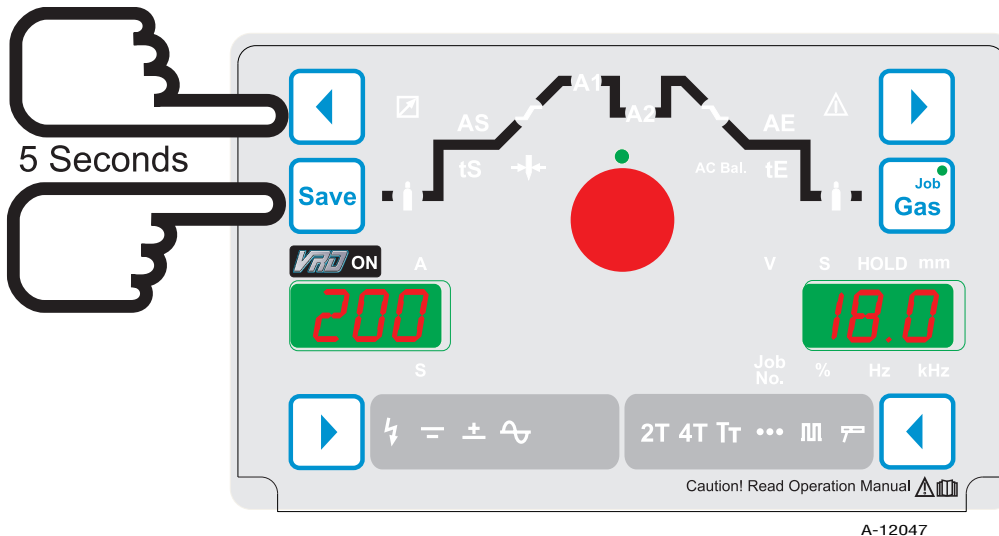
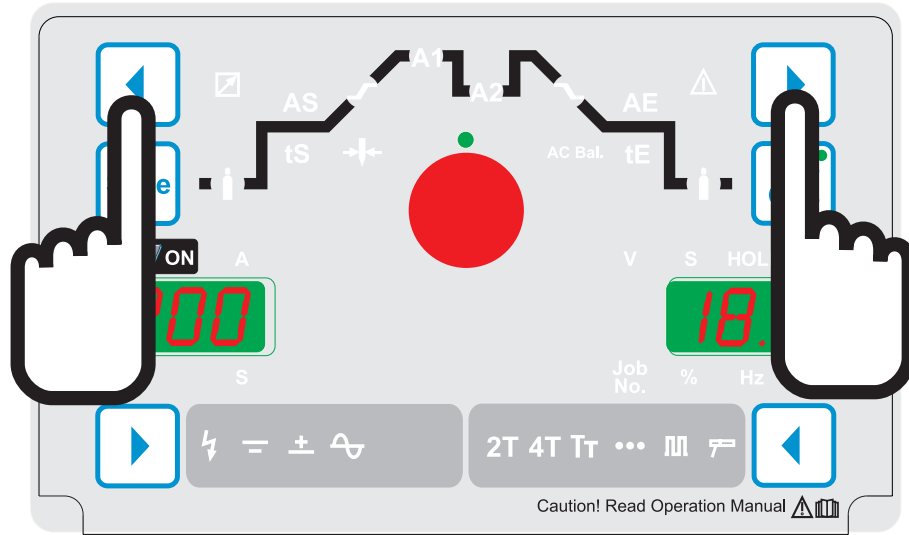


Figure 4-16: Master Reset

Control Panel Test

- Press and hold the BACK button (22).
- Press the FORWARD button (23).
- All control panel LED's and meter displays will light up for approximately 4 seconds.

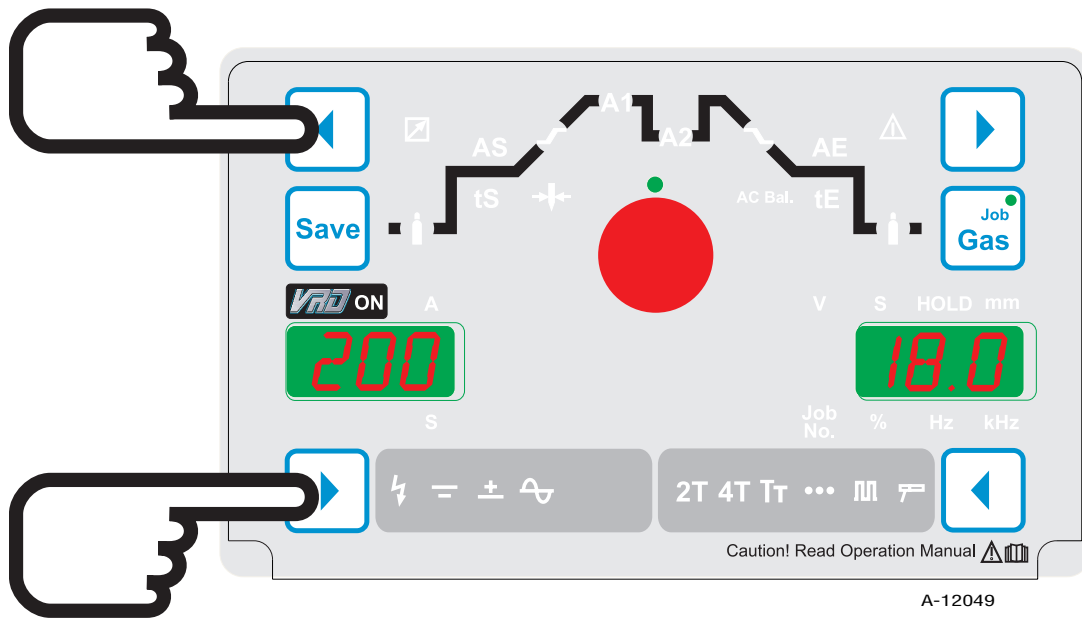


A-12048

Figure 4-17: Control Panel Test

Fan Test

- Press and hold the BACK button (22).
- Press the WELDING TYPE button (17).
- The fan will run for approximately 30 seconds.
- If the BACK button (22) and WELDING TYPE button (17) are pressed again while the fan is running, the fan test is halted.



A-12049

Figure 4-18: Fan Test

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Water Pump Test

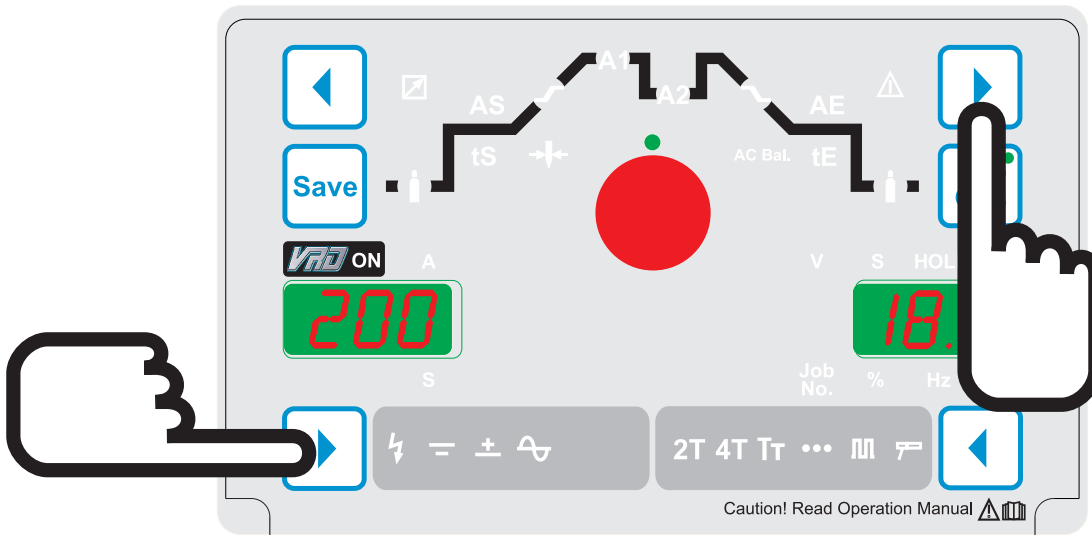
Only for water pump with Net Connection interface

- Press and hold the FORWARD button (22).
- Press the WELDING TYPE button (17).
- The Water Cooler (Net Connection type) will run for approximately 30 seconds.

If there is an error, or no pump is connected, the error message

E05 -00

will be displayed after approximately 5 seconds.



A-12050

Figure 4-19: Water Pump Test

4.12 Information Messages

If a message has been displayed, the power source may only function to a limited capacity. The cause of the condition must be remedied as soon as possible.






Message Code	Note	Cause	Possible Remedy
	Mains Supply Under Voltage	Mains Supply Voltage is too low	Check Mains Supply Voltage
	Fans	Fan Fault	Have an Accredited CIGWELD Service Provider check the power source.
	PFC Input Stage	PFC Input Stage is Faulty	Have an Accredited CIGWELD Service Provider check the power source.
	EEProm checksum error	Communication with EEPROM is faulty	Switch machine off, then back on. Perform a master reset. If the problem continues have an Accredited CIGWELD Service Provider check the power source.
	EEProm read / write error	Communication with EEPROM is faulty	Switch machine off, then back on. Perform a master reset. If the problem continues have an Accredited CIGWELD Service Provider check the power source.

Table 4-11: Information Messages

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

4.13 Error Messages

If a message has been displayed, have an Accredited CIGWELD Service Provider check the power source.

Message Code	Error	Cause	Possible Remedy
E01 -01	Thermal Overload of Output Diodes	Duty Cycle has been exceeded	Leave the power source switched ON and allow it to cool.
E01 -02	Thermal Overload of Primary Module	Duty Cycle has been exceeded	Leave the power source switched ON and allow it to cool.
E01 -03	Thermal Overload of Transformer	Duty Cycle has been exceeded	Leave the power source switched ON and allow it to cool.
E01 -05	Thermal Overload of PFC Module	Duty Cycle has been exceeded	Leave the power source switched ON and allow it to cool.
E02 -00	Mains Supply Over Voltage	Mains Supply Voltage is too high	Check Mains Supply Voltage
E05 -00	Water Pump (in water cooled operation) Torch Monitor (in gas cooled operation)	Defective connection cable or water cooler Water cooled GTAW torch connected	Check the Net Connection water cooler cable and the water cooler. Use a gas cooled torch
E06 -00	Secondary Over Voltage	Initial Voltage is too high	Have an Accredited CIGWELD Service Provider check the power source
E09 -00	Voltage Detection	Voltage Detection Error	Have an Accredited CIGWELD Service Provider check the power source
E09 -01	Voltage Detection plug socket	Voltage Detection Error in module 2	Have an Accredited CIGWELD Service Provider check the power source
E10 -00	Torch / Remote Control	Remote Control, Torch or connections defective	Check or replace Torch or Remote Control
Message Code	Error	Cause	Possible Remedy
E12 -00	Power Section Fault	Power Section start up Fault	Have an Accredited CIGWELD Service Provider check the power source
E13 -01	Temperature Sensor Secondary Diode	Defective Thermal Sensor	Have an Accredited CIGWELD Service Provider check the power source
E13 -02	Temperature Sensor Primary Module	Defective Thermal Sensor	Have an Accredited CIGWELD Service Provider check the power source

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E 13 - 03	Temperature Sensor Transformer	Defective Thermal Sensor	Have an Accredited CIGWELD Service Provider check the power source
E 13 - 04	Temperature Sensor PFC	Defective Thermal Sensor	Have an Accredited CIGWELD Service Provider check the power source
E 14 - 00	Internal Supply Voltage	Internal Supply Voltage Fault	Have an Accredited CIGWELD Service Provider check the power source
E 15 - 00	Current Detection	Current Detection Fault	Have an Accredited CIGWELD Service Provider check the power source
E 16 - 00	Shutdown due to over current	Mains Supply Current is too high	Have an Accredited CIGWELD Service Provider check the power source
E 19 - 00	HF Ignition Faulty	HF Ignition Faulty	Have an Accredited CIGWELD Service Provider check the power source
E 22 - 00	Mains Supply Under Voltage	Mains Supply Voltage is too low	Check Mains Supply Voltage
E 25 - 00	The Electrode is shorted to work piece when machine is turned ON	VRD defective, or short circuit between torch and work piece	Switch OFF and ON the power source to clear the error code
E 30 - 00	Configuration Error	Defective PCB, incorrect system software	Have an Accredited CIGWELD Service Provider check the power source
E 30 - 03	Control Panel identification	Control Panel identification error	Have an Accredited CIGWELD Service Provider check the power source
E 33 - 01	Power Module	Power Module not symmetrical	Have an Accredited CIGWELD Service Provider check the power source

Table 4-12: Error Message

4.14 Shielding Gas Regulator Operating Instructions



This equipment is designed for use with welding grade (Inert) shielding gases only.

Shielding Gas Regulator Safety

This regulator is designed to reduce and control high pressure gas from a cylinder or pipeline to the working pressure required for the equipment using it.

If the equipment is improperly used, hazardous conditions are created that may cause accidents. It is the users responsibility to prevent such conditions. Before handling or using the equipment, understand and comply at all times with the safe practices prescribed in this instruction.

SPECIFIC PROCEDURES for the use of regulators are listed below.

1. NEVER subject the regulator to inlet pressure greater than its rated inlet pressure.
2. NEVER pressurize a regulator that has loose or damaged parts or is in a questionable condition. NEVER loosen a connection or attempt to remove any part of a regulator until the gas pressure has been relieved. Under pressure, gas can dangerously propel a loose part.
3. DO NOT remove the regulator from a cylinder without first closing the cylinder valve and releasing gas in the regulator high and low pressure chambers.
4. DO NOT use the regulator as a control valve. When downstream equipment is not in use for extended periods of time, shut off the gas at the cylinder valve and release the gas from the equipment.
5. OPEN the cylinder valve SLOWLY. Close after use.

User Responsibilities

This equipment will perform safely and reliable only when installed, operated and maintained, and repaired in accordance with the instructions provided. Equipment must be checked periodically and repaired, replaced, or reset as necessary for continued safe and reliable performance. Defective equipment should not be used. Parts that are broken, missing, obviously worn, distorted, or contaminated should be replaced immediately.

The user of this equipment will generally have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, or by repair by anyone other than an accredited repairer.



Match regulator to cylinder. NEVER CONNECT a regulator designed for a particular gas or gases to a cylinder containing any other gas.

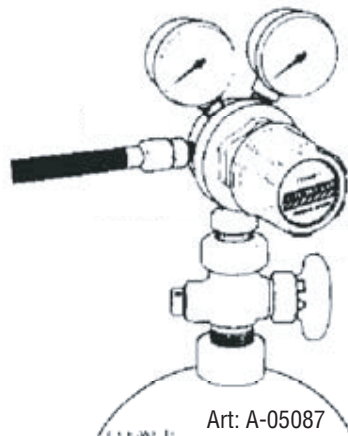


Figure 4-20: Fit Regulator to Cylinder

Installation

1. Remove cylinder valve plastic dust seal. Clean the cylinder valve outlet of impurities that may clog orifices and damage seats before connecting the regulator.

Crack the valve (open then close) momentarily, pointing the outlet away from people and sources of ignition. Wipe with a clean lint free cloth.

2. Match regulator to cylinder. Before connecting, check that the regulator label and cylinder marking agree and that the regulator inlet and cylinder outlet match. NEVER CONNECT a regulator designed for a particular gas or gases to a cylinder containing any other gas.
3. Connect the regulator inlet connection to cylinder or pipeline and tighten it firmly but not excessively, with a suitable spanner.
4. Connect and tighten the outlet hose firmly and attach down-stream equipment.
5. To protect sensitive down-stream equipment a separate safety device may be necessary if the regulator is not fitted with a pressure relief device.

Operation

With the regulator connected to cylinder or pipeline, and the adjustment screw/knob fully disengaged, pressurize as follows:

1. Stand to one side of regulator and slowly open the cylinder valve. If opened quickly, a sudden pressure surge may damage internal regulator parts.
2. With valves on downstream equipment closed, adjust regulator to approximate working pressure. It is recommended that testing for leaks at the regulator connection points be carried out using a suitable leak detection solution or soapy water.
3. Purge air or other unwanted welding grade shielding gas from equipment connected to the regulator by individually opening then closing the equipment control valves. Complete purging may take up to ten seconds or more, depending upon the length and size of the hose being purged.

Adjusting Flow Rate

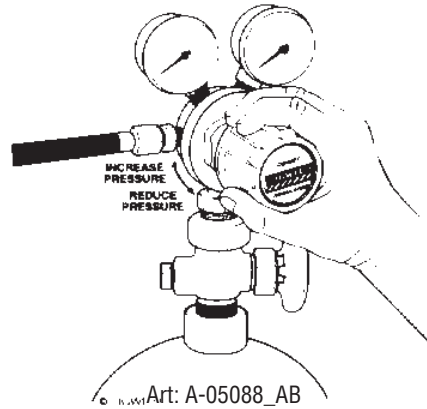


Figure 4-21: Adjust Flow Rate

With the regulator ready for operation, adjust working flow rate as follows:

1. Slowly turn adjusting screw/knob in (clockwise) direction until the outlet gauge indicates the required flow rate.

NOTE

It may be necessary to re-check the shielding gas regulator flow rate following the first weld sequence due to back pressure present within shielding gas hose assembly.

2. To reduce flow rate, allow the welding grade shielding gas to discharge from regulator by opening the downstream valve. Bleed welding grade shielding gas into a well ventilated area and away from any ignition source. Turn adjusting screw counter clockwise, until the required flow rate is indicated on the gauge. Close downstream valve.

Shutdown

Close cylinder valve whenever the regulator is not in use. To shut down for extended periods (more than 30 minutes).

1. Close cylinder or upstream valve tightly.
2. Open downstream equipment valves to drain the lines. Bleed gas into a well ventilated area and away from any ignition source.
3. After gas is drained completely, disengage adjusting screw and close downstream equipment valves.
4. Before transporting cylinders that are not secured on a cart designed for such purposes, remove regulators.

4.15 Foot Control, Part No. W4015800 (Optional Accessory)

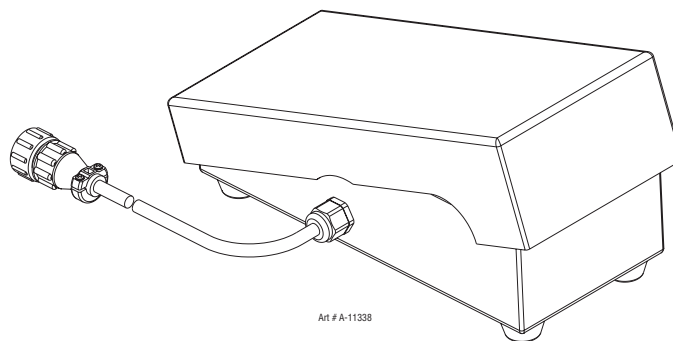


Figure 4-22: Foot Control

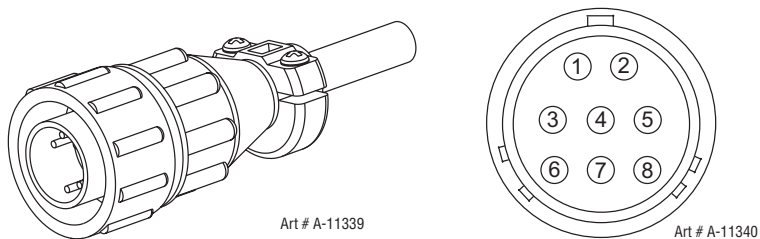


Figure 4-23: 8 Pin Control Plug

Pin	Description
1	Not Used
2	Trigger Switch
3	Trigger Switch
4	Not Used
5	Potentiometer Maximum
6	Potentiometer Minimum
7	Potentiometer Wiper
8	Not Used

Table 4-13: 8 Pin Socket

Description

The CIGWELD Foot Control is a foot operated switch and potentiometer which starts and stops the welding process and controls welding current through operation of the foot pedal. Refer to list below for compatible Cigweld power sources.

Installation

Attach the 8-pin connector on the end of the cable to the 8-pin receptacle on the front of the welding machine. To complete the connection, align the keyway, insert the plug, and rotate the threaded collar fully clockwise.

Foot Control Operation

Press the foot pedal to start the machine output functions. The foot control potentiometer controls the welding current up to the level set on the welding power source. Note that the maximum current must be set on the power source by the operator **prior** to the foot control being connected. With the foot control connected, the power source will only display minimum preview Amps until the foot control is depressed then it displays actual welding current when welding. Pressing the pedal to increases the welding current; letting up on the pedal decreases the welding current. Releasing the pedal completely extinguishes the arc and initiates the post-flow shielding gas timer (where fitted).

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Note that some power sources may require the remote/local switch set to remote, the maximum setting of the power source will be determined by the respective front panel control, irrespective of the remote control device setting. As an example, if the output current on the power source front panel is set to 50% of the available current and the remote control device is set to 100% output or maximum, the maximum achievable output from the unit will be 50%. Should 100% output be required, the respective front panel control must be set to 100% or maximum, in which case the remote device will then be able to control between 1-100% output.

This foot control is compatible with the following Cigweld power sources:

WeldSkill 200AC/DC Part No: W1006202

Transmig 175i Part No: W1005176

Transmig 200i Part No: W1005202

Transmig 250i Part No: W1003251

Transtig 200AC/DC Part No: 700719

Transtig 220AC/DC Part No: W1007221

Transtig 300AC/DC Part No: W1007301

Note 1: Some power sources other than specified as above may not function with the foot control.

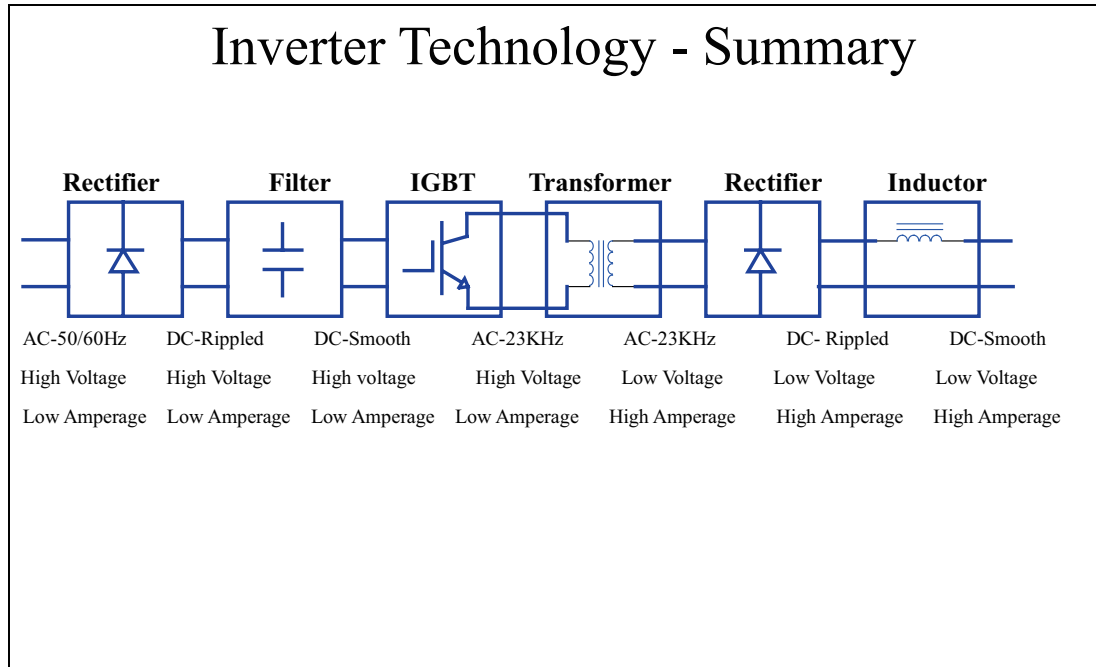
Note 2: The foot control will only work correctly when power source trigger mode 2T (Normal) is selected.

**SECTION 5:
THEORY OF OPERATION**

5.01 Inverter Design

What does the word inverter mean?

The term inverter refers to the ability to change DC power into AC. Inverter power supplies immediately rectify the incoming AC to DC, and then the transistors create a higher frequency AC. The higher frequency AC then goes on to a much smaller main transformer than in a conventional power supply. The AC is then rectified to extremely smooth DC. The diagram to the below shows the basic electrical wiring of a DC output inverter power supply.



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**SECTION 6:
TROUBLESHOOTING**

6.01 Basic Troubleshooting



WARNING

There are extremely dangerous voltage and power levels present inside this product. Do not attempt to open or repair unless you are a qualified electrical tradesperson and you have had training in power measurements and troubleshooting techniques.

If major complex subassemblies are faulty, then the Welding Power Source must be returned to an accredited CIGWELD Service Provider for repair. The basic level of troubleshooting is that which can be performed without special equipment or knowledge.

FAULT	CAUSE	REMEDY
1 Mains supply voltage is ON, Control panel LED's are illuminated however unit will not commence welding when the torch trigger switch is depressed.	A Power source is not in the correct mode of operation. B Faulty torch trigger.	A Set the power source to the correct mode of operation with the process selection switch. B Repair or replace torch trigger switch/lead.
2 Mains supply voltage is ON. Indicator light is not lit and welding arc cannot be established.	A Primary control fuse is blown. B Broken connection in primary circuit.	A Replace primary control fuse. B Have an Accredited CIGWELD Service Provider check primary circuit.
3 Error Code E01 is displayed and unit will not commence welding when the torch trigger switch is depressed.	Duty cycle of power source has been exceeded.	Leave the power source switched ON and allow it to cool. Note that fault indicator must be extinguished prior to commencement of welding.
4 Welding output continues when torch trigger released	A Trigger mode selection is in 4T (LATCH) mode B Torch trigger leads shorted	A Change to 2T (NORMAL) mode B Repair or replace Torch / trigger lead
5 Welding output voltage is present when the torch trigger switch is depressed but arc cannot be established.	Poor or no work lead contact.	Clean work clamp area and ensure good electrical contact.
6 Welding output voltage is not present when torch trigger depressed	Faulty trigger switch / lead	Repair or replace Torch / trigger lead
7 TIG electrode melts when arc is struck.	TIG torch is connected to the Worklead terminal.	Connect the TIG torch to the Electrode terminal.
8 Arc flutters during TIG welding.	Tungsten electrode is too large for the welding current.	Select the correct size of tungsten electrode.
9 No HF output in HF mode	HF Circuit faulty	Have an Accredited CIGWELD Service Provider check HF circuit.
10 Error Code is displayed	Refer to the error code list, section 4.13	Refer to the error code list, section 4.13

Table 6-1: Power Source Problem

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

6.02 Power Source Faults

The following table is a guide for analysing problems and making repairs to the Power Source.

Refer also to the error codes for more information.

Fault	Possible Cause	Remedy
1 There is no weld output and all front panel displays are off	A The main Power Switch is set to OFF B Line fuse is blown C The main Power Switch is faulty D Loose connection to EMC board E Faulty Power Inverter board F Faulty Control board G Faulty Display board	A Set main Power Switch to ON B Replace Line fuse C Replace main Power Switch D Tighten connections E Replace Power Inverter board F Replace Control board G Replace Display board
2 There is no weld output and the yellow over temperature light is on	A Unit has overheated B Airflow inlet or outlet ducts are blocked C Fan does not operate D Error Code E01-01-displayed (Secondary Over Temperature) E Error Code E01-02-displayed (Primary Over Temperature) F Error Code E01-03-displayed (Transformer Over Temperature) G Error Code E01-05-displayed (EMC PCB Over Temperature)	A Allow unit to cool with fan running until over temperature light extinguishes B Remove blockages from airflow ducts C Replace fan. Check fan wiring header is plugged securely into Control board. Check fan wiring is not damaged D Allow unit to cool with fan running until over temperature light extinguishes E Allow unit to cool with fan running until over temperature light extinguishes F Allow unit to cool with fan running until over temperature light extinguishes G Allow unit to cool with fan running until over temperature light extinguishes
3 Mode switch does not change welding mode	A Faulty Display board	A Replace Display board
4 A welding arc can be established but the weld is erratic or inconsistent	A Work Lead cable too small B Loose welding connections C Loose earth clamp D Incorrect weld polarity selected E No shielding gas F Wind blows shielding gas away G Incorrect TIG tungsten electrode H Poorly prepared or worn TIG tungsten	A Use correct weld cable size B Tighten welding connections C Tighten earth clamp D Correct weld polarity. Refer to weld consumable manufacturers recommended polarity E Connect shielding gas F Shield welding area from draughts G Use correct tungsten type H Re grind tungsten to correct shape
5 Error Code E02-00 is displayed	A The supply mains or DC bus voltage is too high	A Check to see if mains supply voltage is within accepted limits. A generator with poor voltage regulation may cause a high supply voltage. Connect Power Source to a suitable supply voltage

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

6	Error Code E06-00 is displayed	A The welding output DC voltage is too high	A Check the power source internally. The control board may need to be replaced W7006305 (Transtig 220ac/dc) W7006330 (Transtig 300ac/dc)
7	Error Code E09-00 is displayed	A The power source is measuring an output current or voltage when not welding, or the power source is not measuring an output current or voltage when welding	A Check the shunt & shunt wiring. Check the ribbon cables are properly connected. Replace control board. W7006305 (Transtig 220ac/dc) W7006330 (Transtig 300ac/dc)
8	Error Code E09-01 is displayed	A In AC mode an output current is measured continuously below 6A	A Check the shunt & shunt wiring. Check the ribbon cables are properly connected. Replace control board. W7006305 (Transtig 220ac/dc) W7006330 (Transtig 300ac/dc)

Table 6-2: Power Source Faults

6.03 Advanced Troubleshooting

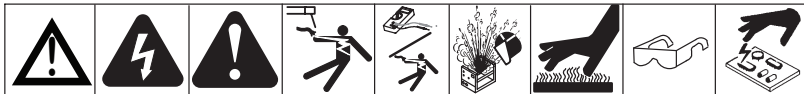
If the problem cannot be solved by the basic (external) troubleshooting guide, the Power Source covers will have to be removed to allow the technician to analyse failures with a few common tools.



WARNING

Turn off power and disconnect mains supply plug from receptacle before working on the unit. Allow two minutes for capacitors to discharge after disconnection from mains supply voltage.

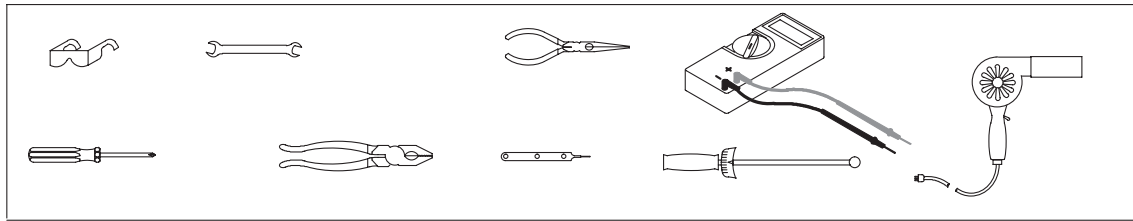
Checking Unit Before Applying Power



The following safety information shall be read before starting troubleshooting and servicing.

1. Turn ON/OFF Switch to OFF position, and disconnect unit from primary line voltage before working on unit.
2. Significant DC voltage can remain on capacitors after unit is OFF. Wait until all front panel LED's are OFF before removing case.
3. Check DC bus voltage according to Section 6.10 after removing case and make sure the DC bus voltage is closed 0V.
4. Before troubleshooting or applying power to unit, complete the following checks to avoid causing further damage.

6.04 Test Equipment and Tools for Troubleshooting and Servicing



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Figure 6-1: Test Equipment and Tools

- Digital Multimeter
- DC clip-on ammeter
- Screwdriver and spanner
- CRO (20 Mhz bandwidth) & isolating transformer

6.05 Visually Inspect

Visually inspect the inside of the Power Source. The levels of current present in these units can cause burning or arcing of PCB, transformers, switches, or rectifier when a failure occurs. Carefully inspect all components within these units.

Look in particular for the following:

- a) Loose or broken wires or connectors.
- b) Burned or scorched parts or wires or evidence of arcing.
- c) Any accumulation of metal dust or filings that may have caused shorting or arcing.

If any parts are damaged, they must be replaced. Refer to the Spare Parts section for a complete list of components used in the Power Source.

Locate the faulty component(s) then replace where necessary.

6.06 Temperature Monitoring

Three NTC Thermistors are used to monitor internal temperatures. An NTC thermistor has a lower resistance as its temperature increases. The Transformer, Primary Power Module and the EMC Mains Filter board are monitored.

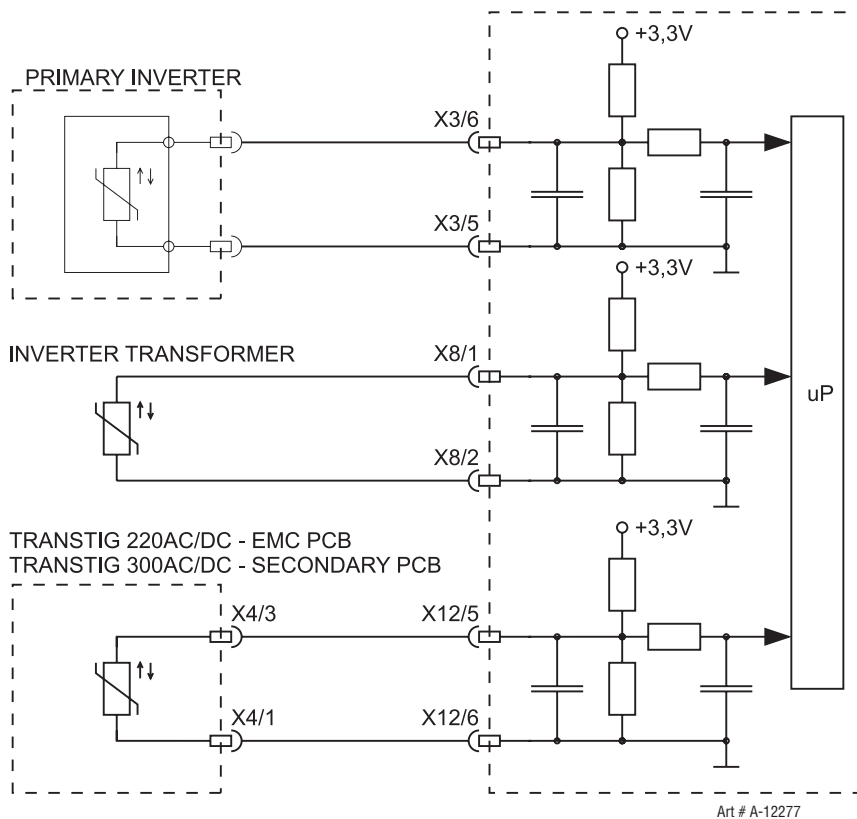


Figure 6-2: Temperature Monitoring

As soon as the maximum temperature is reached, the power source will stop and the error code E01 will be displayed.

TRANSTIG 220AC/DC Sensor	Error Code for Over Temperature	Error Code for Faulty Sensor
Temperature Sensor Primary Power Module	E01-02	E13-02
Temperature Sensor Inverter Transformer	E01-03	E13-03
Temperature Sensor EMC Mains Filter	E01-05	E13-04

Table 6-3: TRANSTIG 220AC/DC Temperature Sensor Error Codes

TRANSTIG 300AC/DC Sensor	Error Code for Over Temperature	Error Code for Faulty Sensor
Temperature Sensor Secondary Power Module	E01-01	E13-01
Temperature Sensor Primary Power Module	E01-02	E13-02
Temperature Sensor Inverter Transformer	E01-03	E13-03

Table 6-4: TRANSTIG 220AC/DC Temperature Sensor Error Codes

In the case of over temperature, the fans will keep running to cool the power source. As soon as the temperature is restored to a safe level, the power source will be able to weld again.

In the case of a faulty sensor or a loose connection on a sensor, the power source will stop. The sensor fault must be corrected before the power source will be able to resume welding.

6.07 Control Board Power Supply Monitoring

The main control board provides the internal control power supplies for the whole power source.

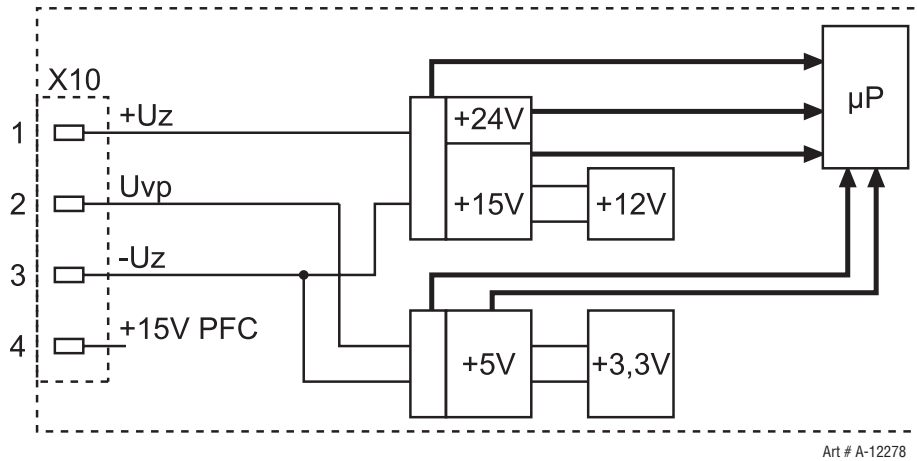


Figure 6-3: Control Board Power Supply Monitoring

If an internal supply voltage is out of range, the power source will stop and the error code E14 will be displayed.

Internal Supply Voltage	Lower Limit	Upper Limit
+24 VDC	17 VDC	37 VDC
+15 VDC	12 VDC	20 VDC

Table 6-5: Internal Power Supply Voltage Range

6.08 Main DC Bus Voltage Monitoring

The main DC Bus is monitored by the control board.

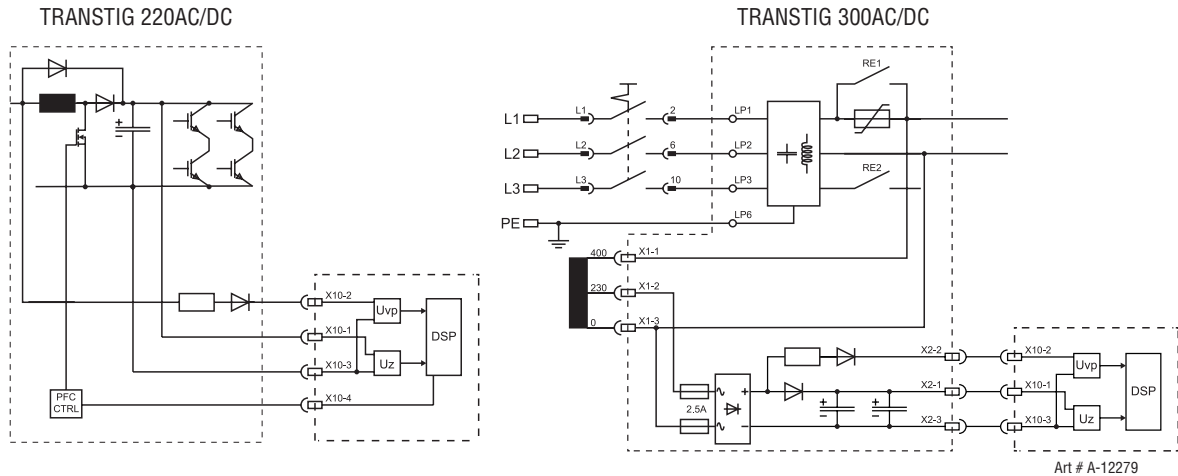


Figure 6-4: Main DC Bus Voltage Monitoring

If the DC Bus voltage is out of range, the power source will stop and an error code will be displayed.

Internal Supply Voltage	Mains Voltage Limit (Uvp)	DC Bus Voltage Limit (Uz)	Error Code
During Start Up	> 280 VAC	> 414 VDC	E02 mains over voltage
During Normal Operation, or During Standby	> 440 VAC	> 490 VDC	E02 mains over voltage
During Normal Operation, or During Standby	< 120 VAC		E22 mains under voltage
During Normal Operation, or During Standby		< 180 VDC	H01 mains under voltage

Table 6-6: Incoming Supply and Main DC Bus Voltage Range

For the TRANSTIG 300AC/DC, if the difference between the BUS voltages is more than 40 VDC, the power source will stop and the error code E33-01 (bus voltage symmetry) will be displayed.

6.09 Welding Output Voltage Monitoring

The Welding Output Voltage is monitored by the control board.

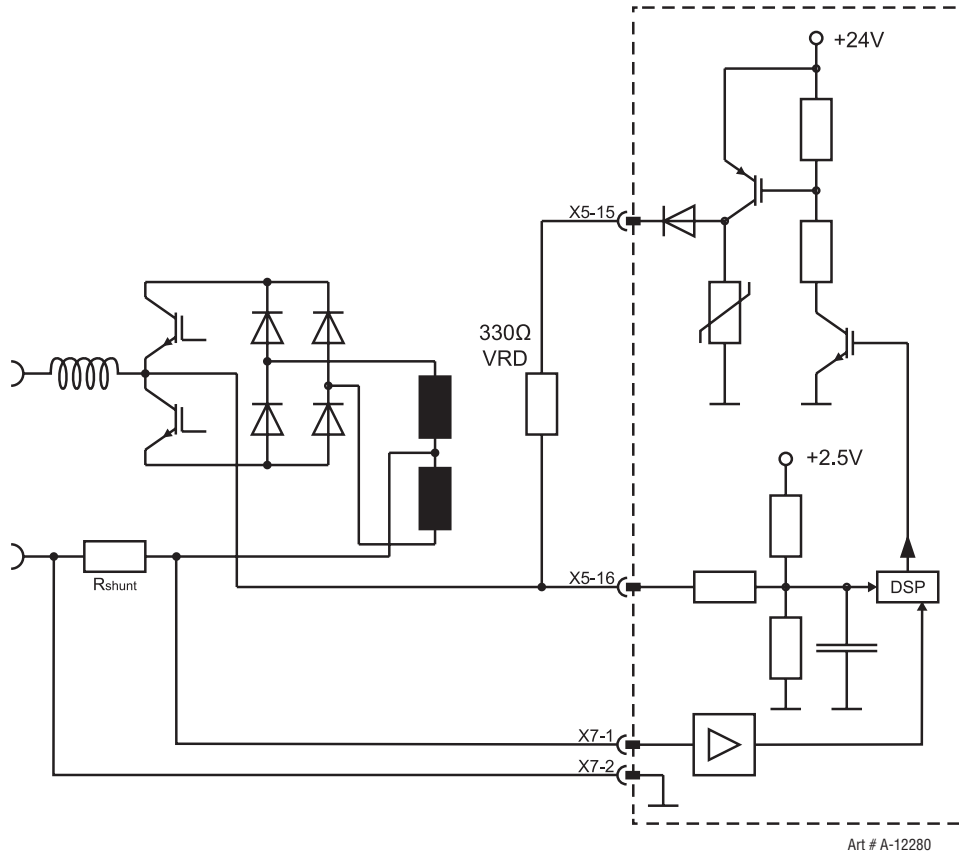


Figure 6-5: Welding Output Voltage Monitoring

During the start up sequence, if the offset voltage of the shunt resistor is too high, the error code E15-00 is displayed.

After the start up sequence, if the welding output voltage is more than 100VDC for longer than 300ms, the power source will stop and the error code E06 will be displayed.

6.10 Remote Control Interface

The Remote Control Interface is for connecting a hand or foot remote control. It is also possible to use the interface for simple automation.

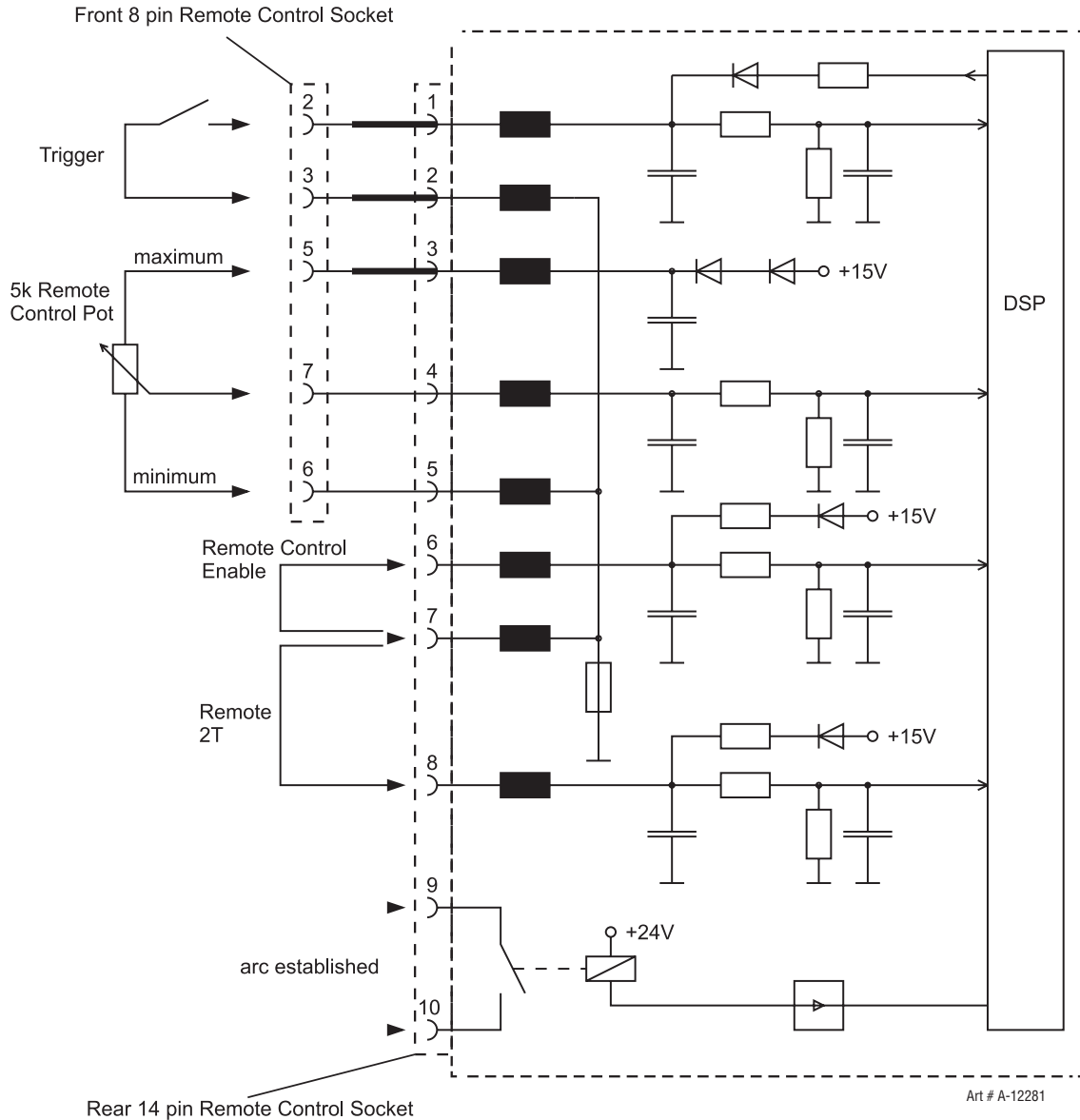


Figure 6-6: Remote Control Interface

If there is a short circuit between connector pins, the power source will stop and the error code E10 will be displayed.

6.11 Water Cooler Interface

The Water Cooler Interface is for connecting a water cooler. If a water cooler is connected, CO2 in the user specific menu needs to be set to OFF. If the flow rate is less than 0.3 l/m or no water cooler is connected, the power source will stop and the error code E05 will be displayed.

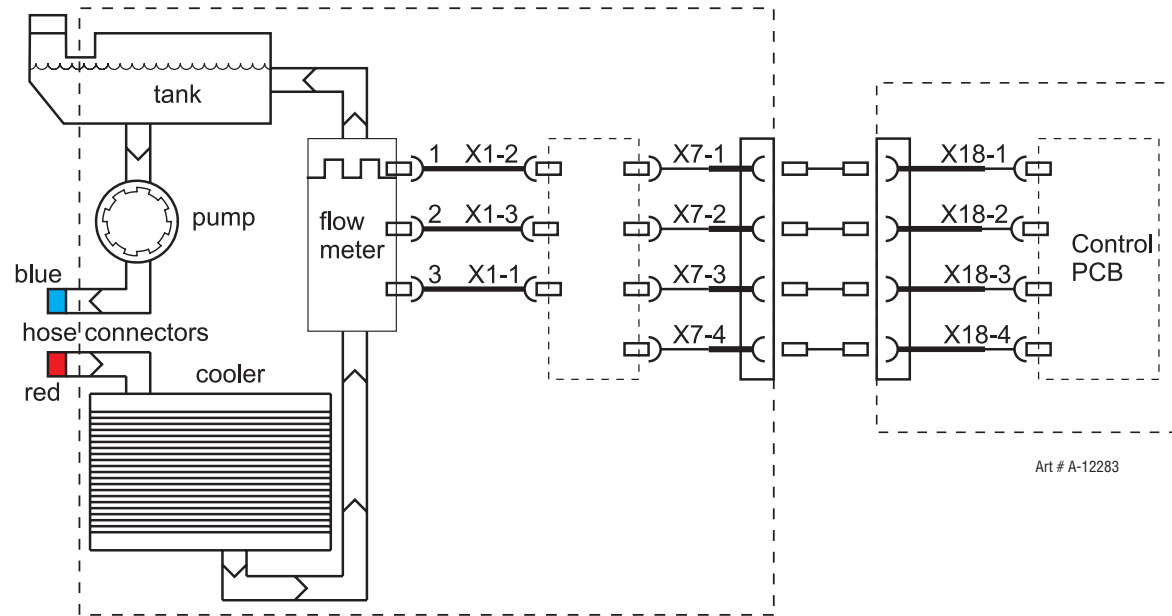


Figure 6-7: Water Cooler Interface

6.12 Primary Supply Current Monitoring

The Primary Supply Current is monitored by the control board.

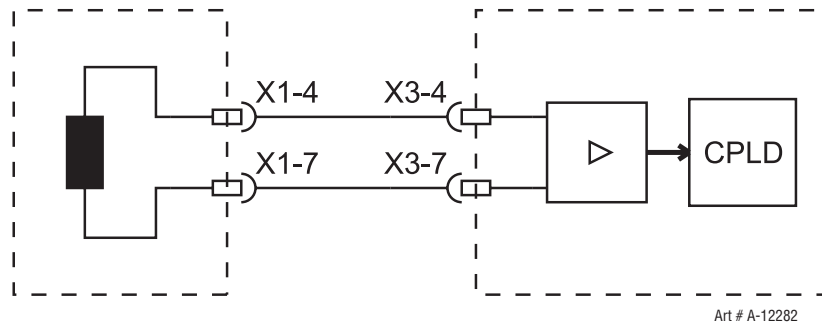


Figure 6-8: Primary Supply Current Monitoring

If the Primary Supply Current is too high, the power source will stop and the error code E16 will be displayed.

6.13 TRANSTIG 220AC/DC PCB Connectors

Main Control PCB (W7006305)

This board controls the logic functions of the welding sequence. It also monitors the internal supply voltages, controls the start up sequence, controls the fans, and monitors the mains supply and welding voltages.

If any LED should indicate a malfunction has occurred, and resetting the mains power does not clear the fault, the board should be replaced.

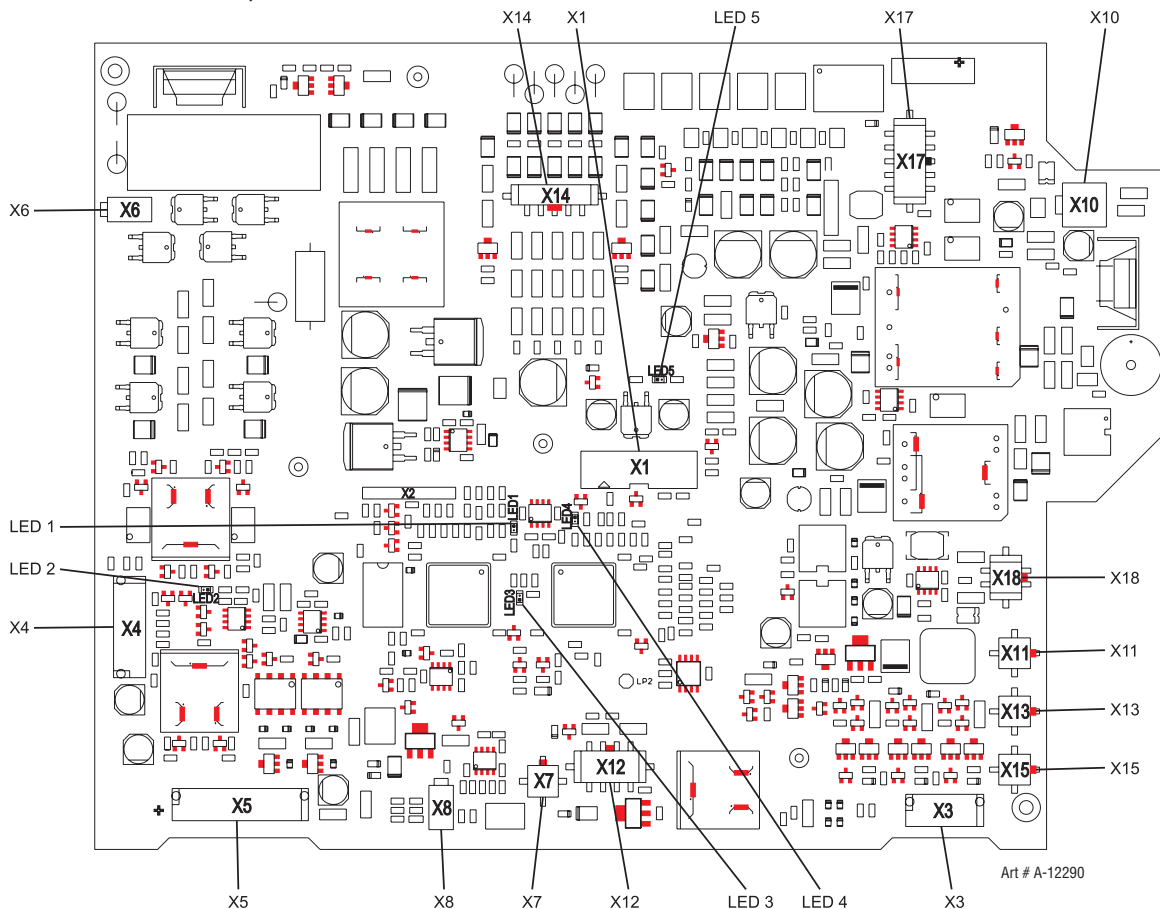


Figure 6-9: Main Control PCB, TRANSTIG 220AC/DC

LED	LED state and function
1 (green)	Indicates the internal CPLD processor is ok This LED may be ON, OFF or FLASHING
2 (green)	ON indicates the internal +15V supply is ok OFF indicates the internal +15V supply is faulty
3 (green)	FLASHING indicates the internal DSP processor is ok OFF indicates the internal DSP processor is faulty
4 (red)	OFF indicates the internal DSP processor is ok Dim indicates the internal DSP processor is not programmed
5 (green)	ON indicates the internal +3V3 supply is ok OFF indicates the internal +3V3 supply is faulty

Table 6-7: Control Board LED Functions, TRANSTIG 220AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
DC Bus Voltage	X10/1	X10/3	336 VDC +/-10%
Mains Supply Input	X10/2	X10/3	336 VDC +/-10%
Fan #1 Supply Voltage	X11/2	X11/1	3 – 15 VDC
Fan #2 Supply Voltage	X13/2	X13/1	3 – 15 VDC
Fan #3 Supply Voltage	X15/2	X15/1	3 – 15 VDC
Internal 24 VDC Supply	X5/7	X5/9	17 - 37 VDC
Internal 15 VDC Supply	X15/2	X5/9	12 - 20 VDC
Internal 5VDC Supply	X4/5	X5/9	4.8 - 5.2 VDC
Temperature Sensor Inverter Transformer	X8/1	X8/2	47kΩ at 25°C or approx 2.3 VDC
Temperature Sensor Power Module	X3/6	X3/5	68kΩ at 25°C or approx 2.3 VDC

Table 6-8: Control Board Measuring Points, TRANSTIG 220AC/DC

EMC PCB NEFI-NTC (W7006308)

This board comprises the mains EMC filter, as well as the soft start circuitry.

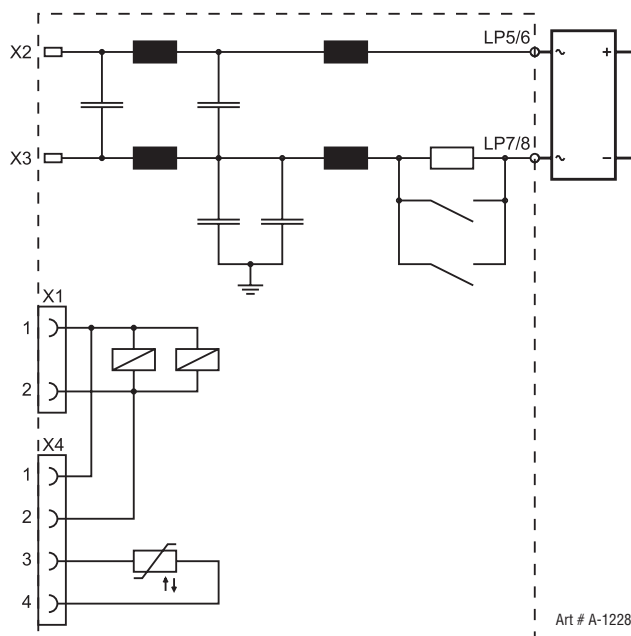
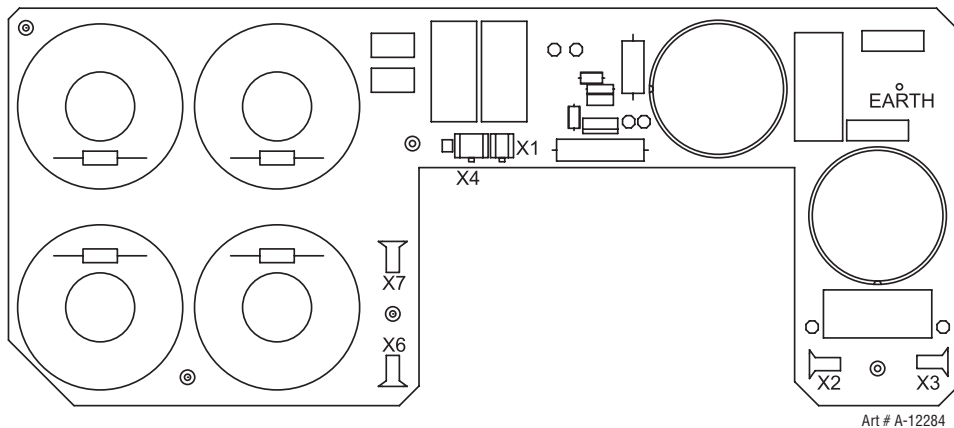


Figure 6-9: EMC PCB, TRANSTIG 220AC/DC

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

Primary Inverter & PFC PCB (W7006306)

This board comprises the PFC input stage, the main DC Bus capacitance, the input current sensor as well as the inverter bridge power module IGBT's.

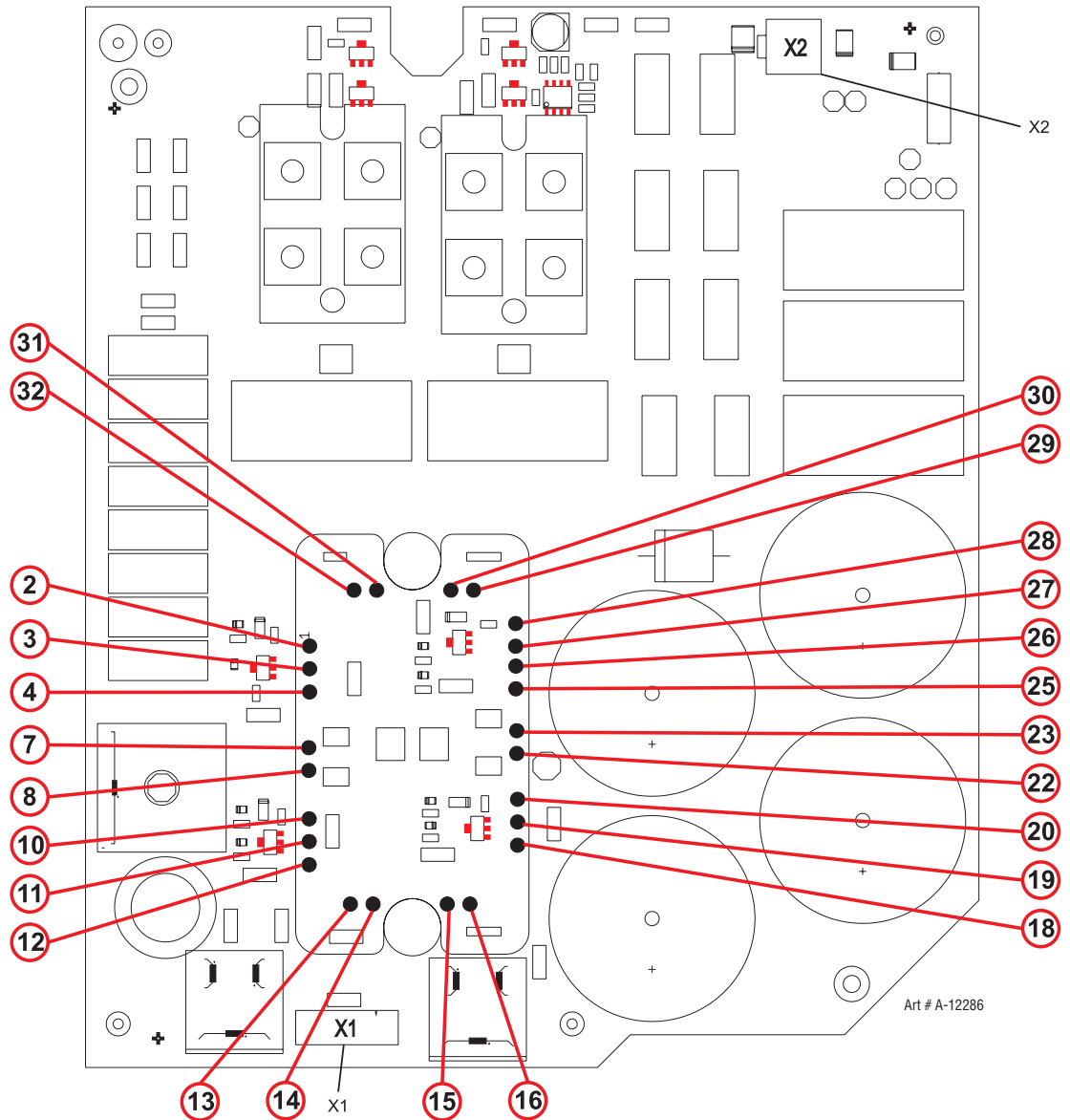


Figure 6-10: Primary Inverter & PFC PCB, TRANSTIG 220AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Power Module and PFC IGBT internal connections

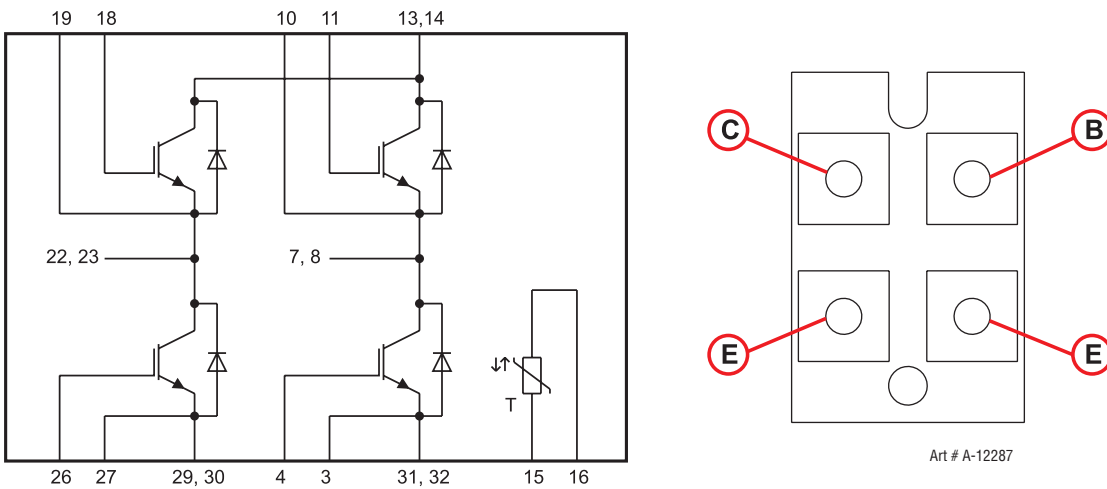


Figure 6-11: Power Module and PFC IGBT Internal Connections, TRANSTIG 220AC/DC

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
IGBT Gate 1	4	3	47kΩ +/-10%
IGBT Gate 2	11	10	47kΩ +/-10%
IGBT Gate 3	18	19	47kΩ +/-10%
IGBT Gate 4	26	27	47kΩ +/-10%
Temperature Sensor Power Module	15	16	68kΩ at 25°C
IGBT 1	31	7	0.2 – 0.9 VDC
IGBT 1	7	31	> 1kΩ
IGBT 2	7	13	0.2 – 0.9 VDC
IGBT 2	13	7	> 1kΩ
IGBT 3	22	13	0.2 – 0.9 VDC
IGBT 3	13	22	> 1kΩ
IGBT 4	29	22	0.2 – 0.9 VDC
IGBT 4	22	29	> 1kΩ
PFC IGBT	B	E	47kΩ +/-10%
PFC IGBT	E	C	0.2 – 0.9 VDC
PFC IGBT	C	E	> 1kΩ

Table 6-9: Primary Inverter and PFC Board Measuring Points, TRANSTIG 220AC/DC

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

Secondary Rectifier PCB (W7006304)

This board comprises the secondary rectifier and the IGBT's for polarity selection and AC/DC output.

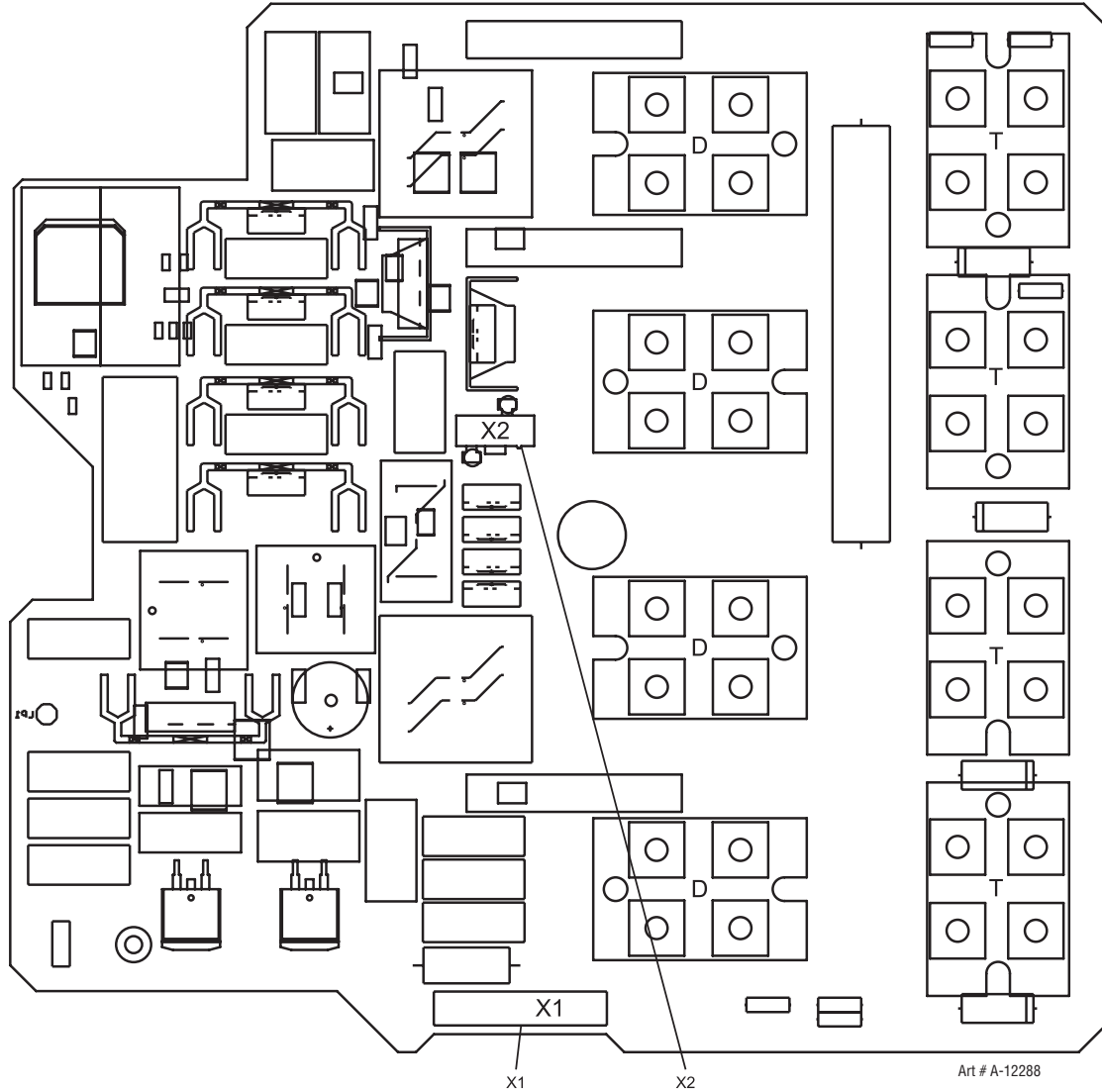


Figure 6-12: Secondary Rectifier PCB, TRANSTIG 220AC/DC

Output Diode and Polarity Selection IGBT internal connections

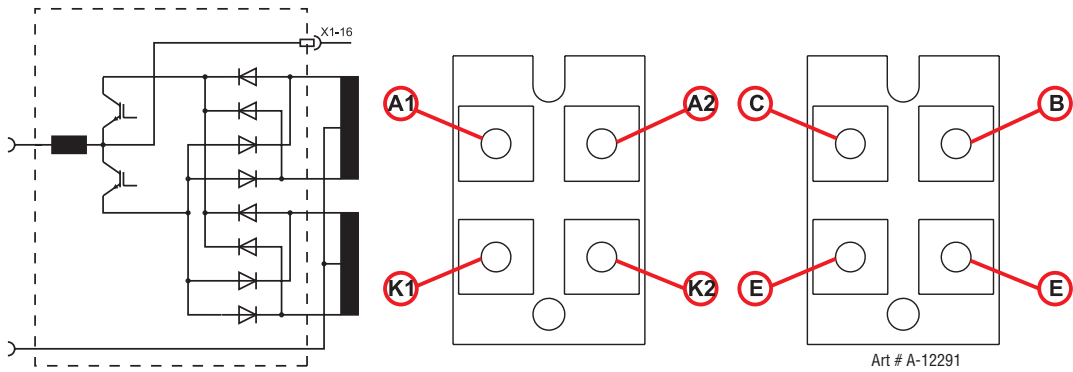


Figure 6-13: Output Diode and Polarity Selection IGBT Internal Connections, TRANSTIG 220AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
IGBT Gate 1	4	3	47kΩ +/-10%
IGBT Gate 2	11	10	47kΩ +/-10%
IGBT Gate 3	18	19	47kΩ +/-10%
IGBT Gate 4	26	27	47kΩ +/-10%
Temperature Sensor Power Module	15	16	68kΩ at 25°C
IGBT 1	31	7	0.2 – 0.9 VDC
IGBT 1	7	31	> 1kΩ
IGBT 2	7	13	0.2 – 0.9 VDC

Table 6-10: Secondary Rectifier Board Measuring Points, TRANSTIG 220AC/DC

Display PCB (W7006307)

This board comprises the display LEDs, the press buttons, the encoder and the meter display.

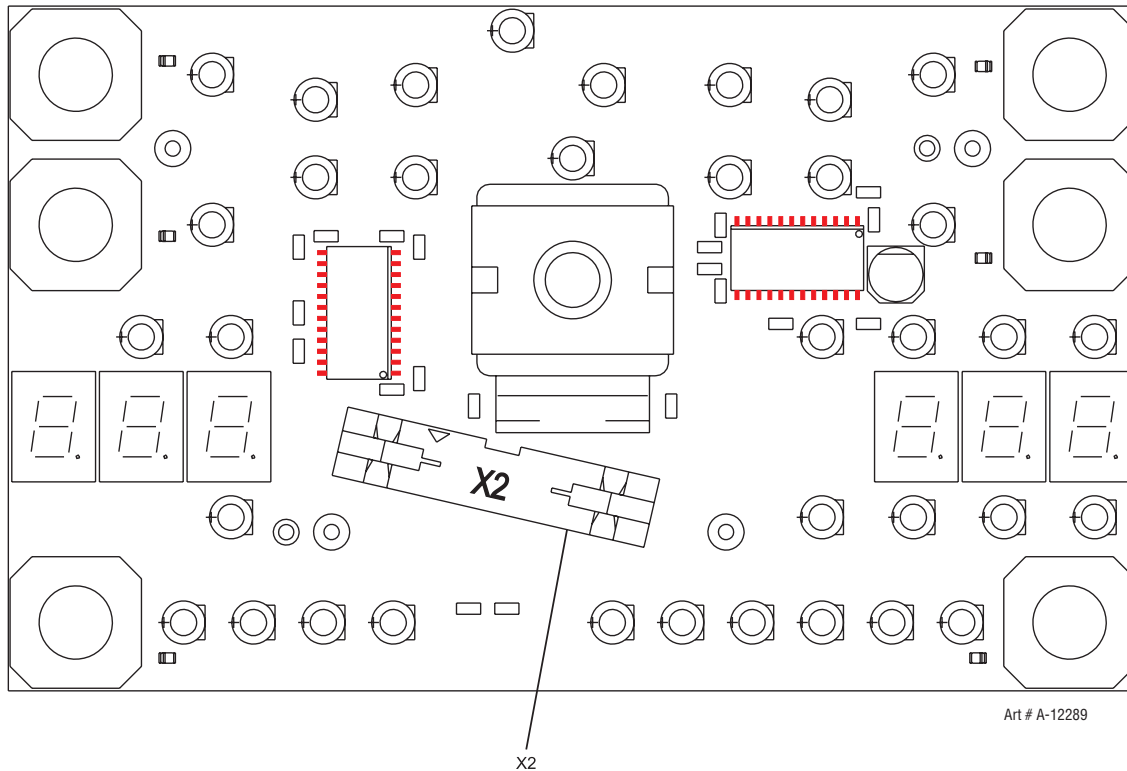


Figure 6-14: Display PCB, TRANSTIG 220AC/DC

6.14 TRANSTIG 300AC/DC PCB Connectors

Main Control PCB (W7006330)

This board controls the logic functions of the welding sequence. It also monitors the internal supply voltages, controls the start up sequence, controls the fans, and monitors the mains supply and welding voltages.

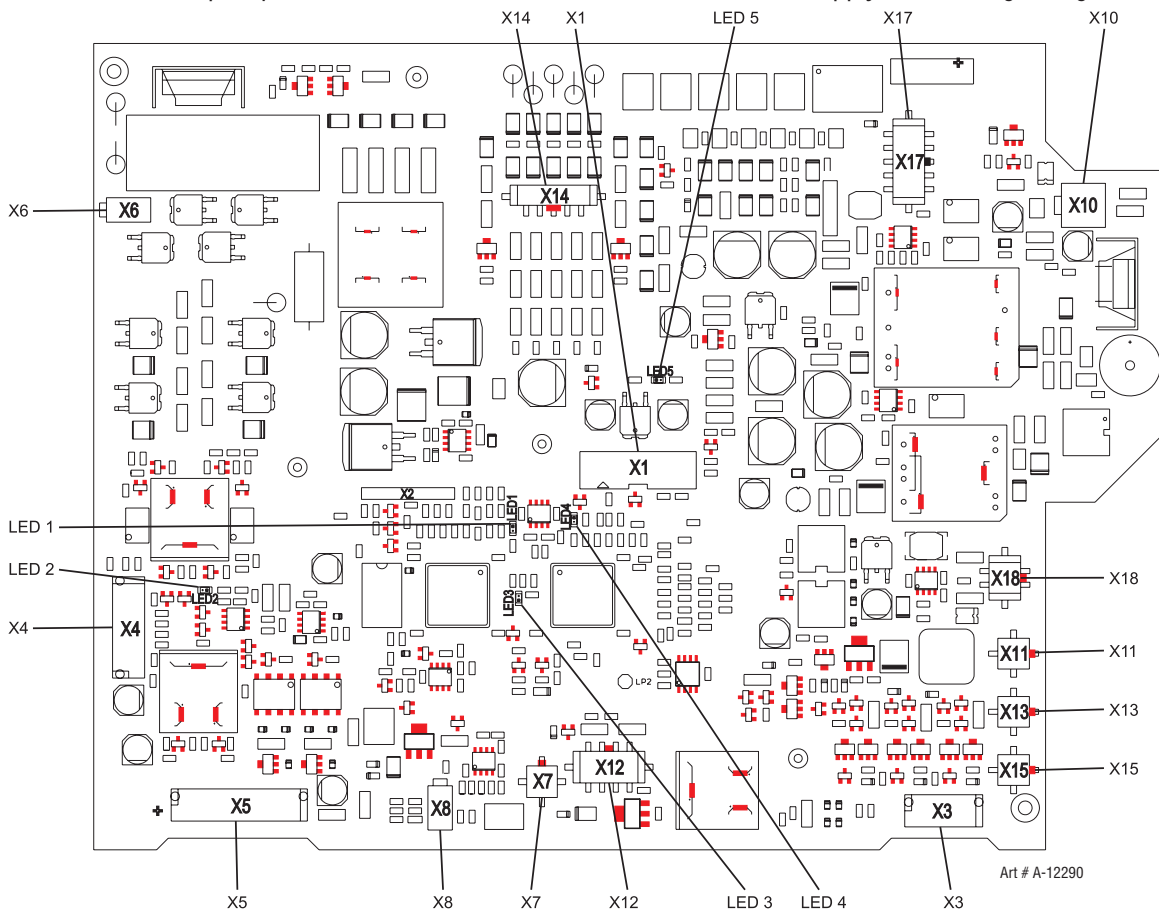


Figure 6-15: Main Control PCB, TRANSTIG 300AC/DC

If any LED should indicate a malfunction has occurred, and resetting the mains power does not clear the fault, the board should be replaced.

LED	LED state and function
1 (green)	Indicates the internal CPLD processor is ok This LED may be ON, OFF or FLASHING
2 (green)	ON indicates the internal +15V supply is ok OFF indicates the internal +15V supply is faulty
3 (green)	FLASHING indicates the internal DSP processor is ok OFF indicates the internal DSP processor is faulty
4 (red)	OFF indicates the internal DSP processor is ok Dim indicates the internal DSP processor is not programmed
5 (green)	ON indicates the internal +3V3 supply is ok OFF indicates the internal +3V3 supply is faulty

Table 6-11: Control Board LED Functions, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
DC Bus Voltage	X10/1	X10/3	325 VDC +/-10%
Mains Supply Input	X10/2	X10/3	320 VDC +/-10%
Fan #1 Supply Voltage	X11/2	X11/1	3 – 15 VDC
Fan #2 Supply Voltage	X13/2	X13/1	3 – 15 VDC
Fan #3 Supply Voltage	X15/2	X15/1	3 – 15 VDC
Internal 24 VDC Supply	X5/7	X5/9	17 - 37 VDC
Internal 15 VDC Supply	X15/2	X5/9	12 - 20 VDC
Internal 5VDC Supply	X4/5	X5/9	4.8 - 5.2 VDC
Temperature Sensor Inverter Transformer	X8/1	X8/2	47k Ω at 25°C or approx 2.3 VDC

Table 6-12: Control Board Measuring Points, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

EMC PCB NEFI-1300 (W7006324)

This board comprises the mains EMC filter, as well as the soft start circuitry.

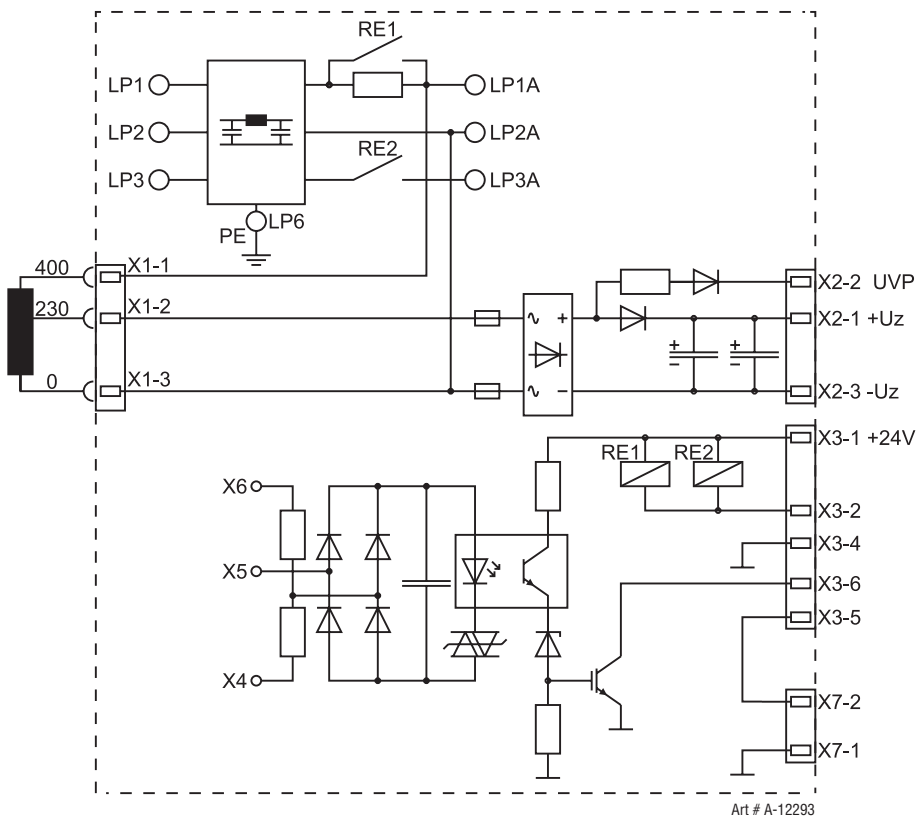
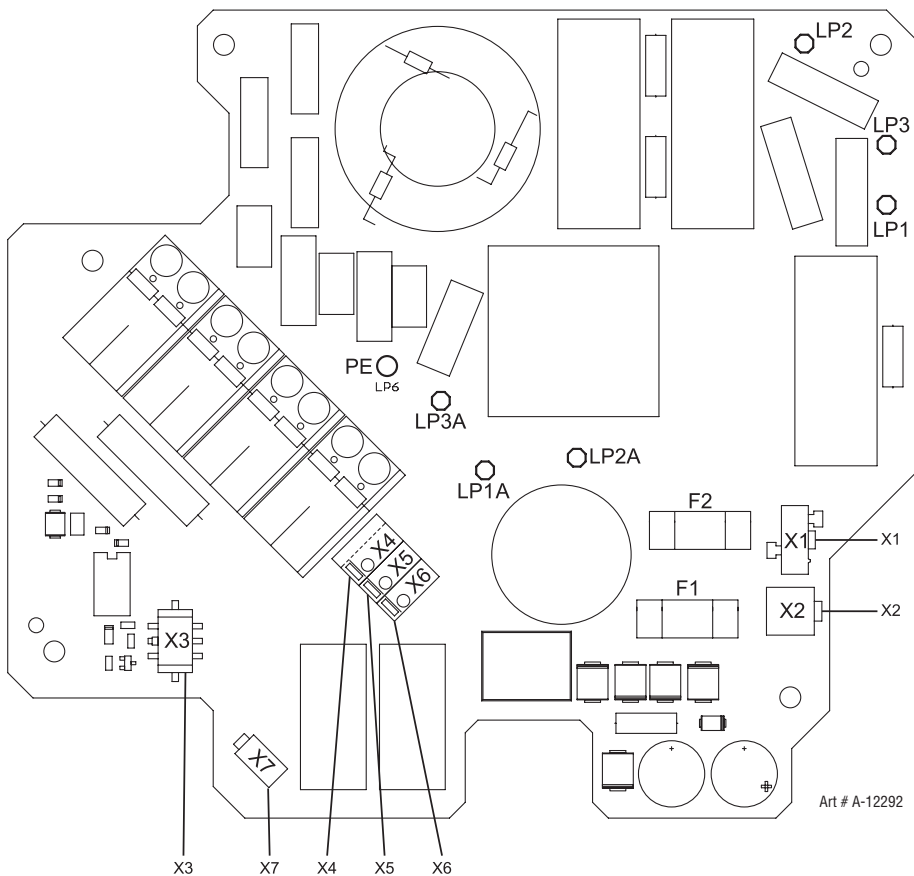


Figure 6-16: EMC PCB, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Primary Inverter PCB (W7006322)

This board comprises, the main DC Bus capacitance, the input current sensor as well as the inverter bridge power module IGBT's.

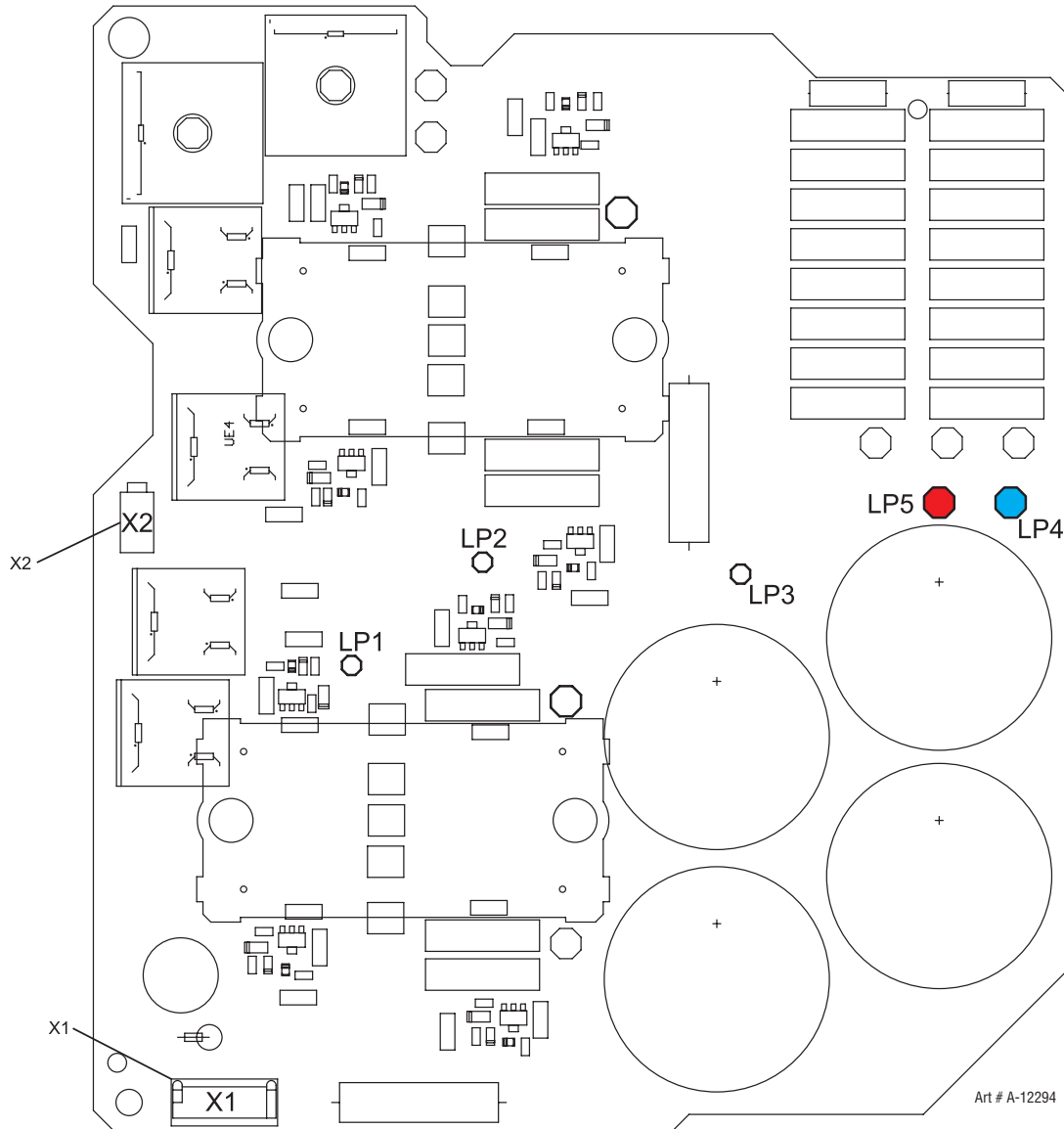
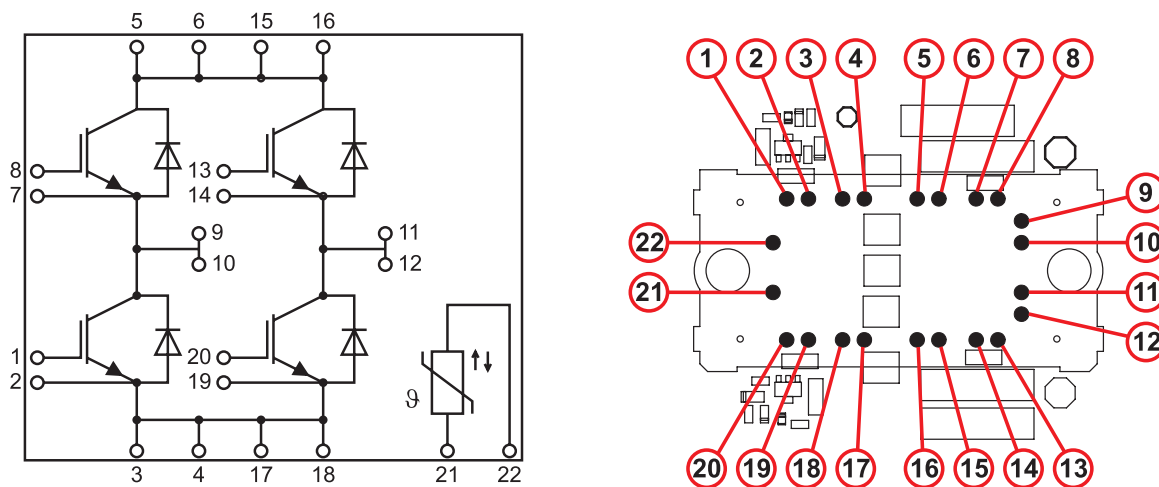


Figure 6-17: Primary Inverter PCB, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

Power Module IGBT Internal Connections



Art # A-12295

Figure 6-18: Power Module IGBT Internal Connections, TRANSTIG 300AC/DC

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
IGBT Gate 1	1	2	47kΩ +/-10%
IGBT Gate 2	8	7	47kΩ +/-10%
IGBT Gate 3	13	14	47kΩ +/-10%
IGBT Gate 4	20	19	47kΩ +/-10%
Temperature Sensor Power Module	21	22	22kΩ at 25°C
IGBT 1	3, 4, 17, 18	9, 10	0.2 – 0.9 VDC
IGBT 1	9, 10	3, 4, 17, 18	> 1kΩ
IGBT 2	9, 10	5, 6, 15, 16	0.2 – 0.9 VDC
IGBT 2	5, 6, 15, 16	9, 10	> 1kΩ
IGBT 3	11, 12	5, 6, 15, 16	0.2 – 0.9 VDC
IGBT 3	5, 6, 15, 16	11, 12	> 1kΩ
IGBT 4	3, 4, 17, 18	11, 12	0.2 – 0.9 VDC
IGBT 4	11, 12	3, 4, 17, 18	> 1kΩ

Table 6-13: Primary Inverter Board Measuring Points, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Secondary Rectifier PCB (W7006323)

This board comprises the secondary rectifier and the IGBT's for polarity selection and AC/DC output.

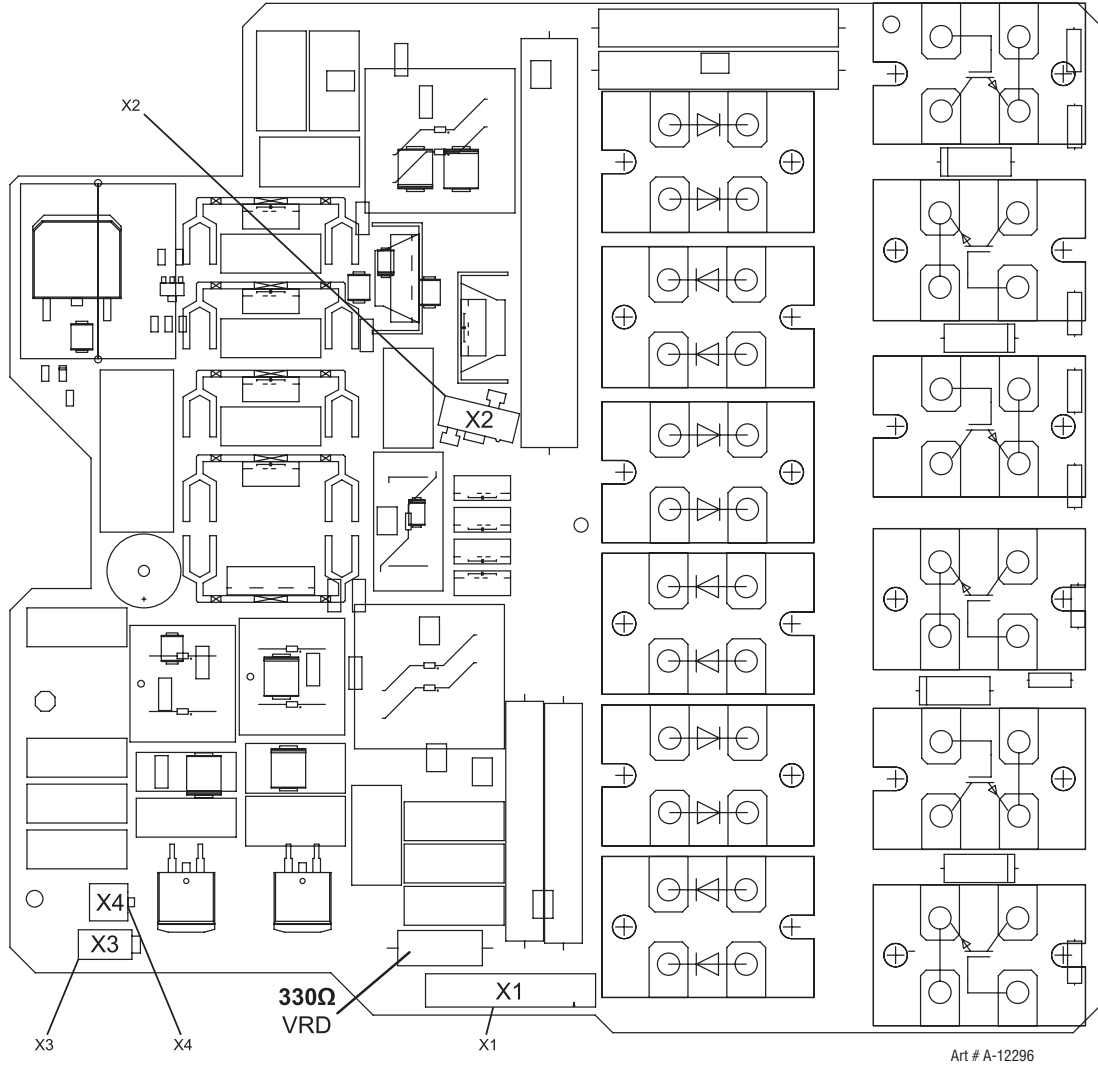


Figure 6-19: Secondary Rectifier PCB, TRANSTIG 300AC/DC



In the positions where the cables are attached, the LONGER screws must be used. The rest of the screws are the SHORT ones. DAMAGE to the power device may occur if a long screw is used in the incorrect place.

Output Diode and Polarity Selection IGBT Internal Connections

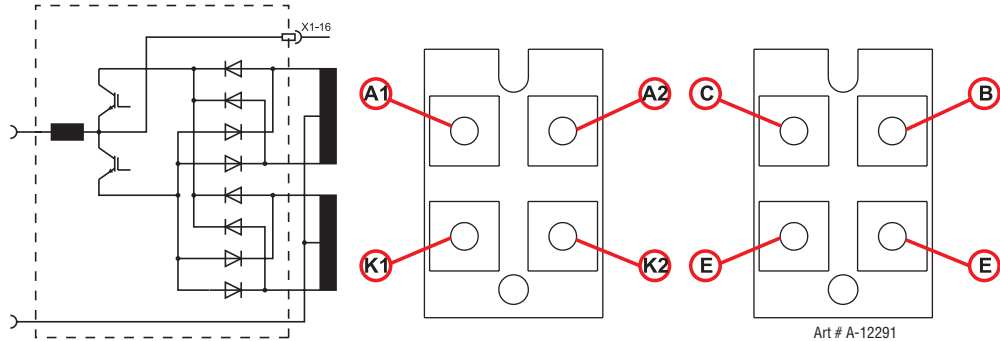


Figure 6-20: Output Diode and Polarity Selection IGBT Internal Connections. TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300 AC/DC POWER SOURCE

Signal	Positive Meter Lead connects to	Negative Meter Lead connects to	Measurement
IGBT	B	E	47kΩ +/-10%
IGBT	E	C	0.2 – 0.9 VDC
IGBT	C	E	> 1kΩ
Diode	A1	K1	0.2 – 0.9 VDC
Diode	A2	K2	0.2 – 0.9 VDC
Diode	K1	A1	> 1kΩ
Diode	K2	A2	> 1kΩ

Table 6-14: Secondary Rectifier Board Mmeasuring Points, TRANSTIG 300AC/DC

Display PCB (W7006307)

This board comprises the display leds, the press buttons, the encoder and the meter display.

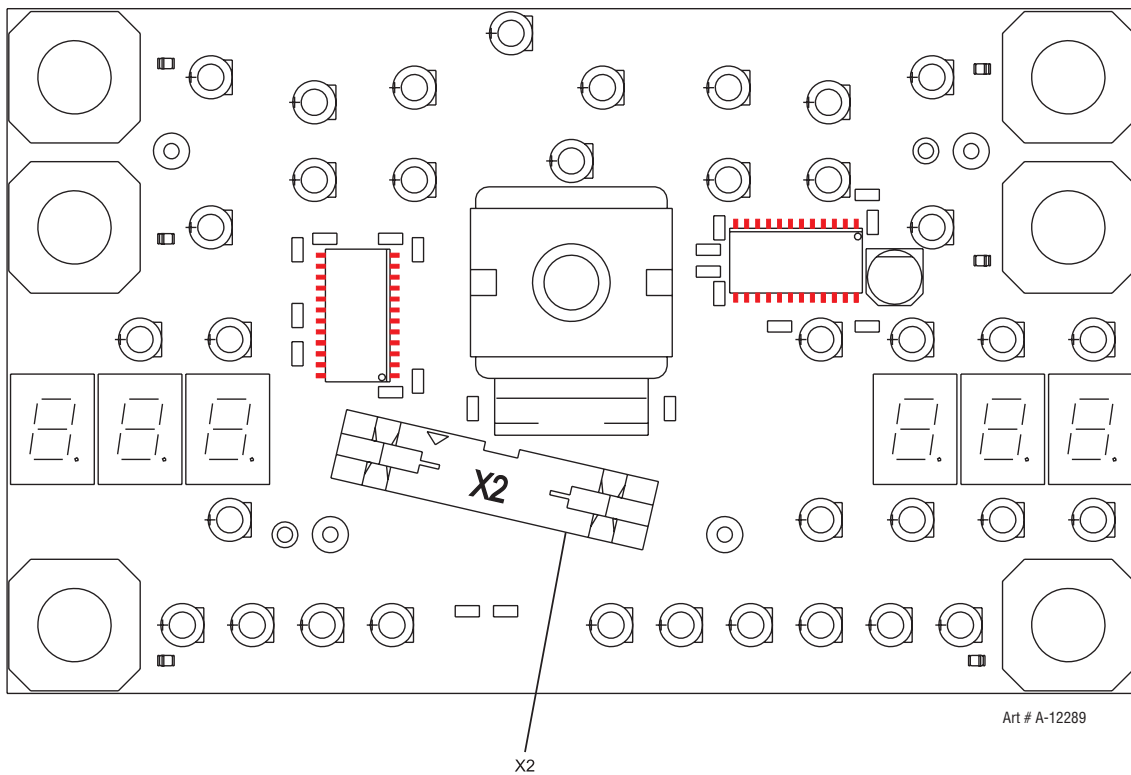


Figure 6-21: Display PCB, TRANSTIG 300AC/DC

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

6.15 Main Circuit Description

Transtig 220AC/DC

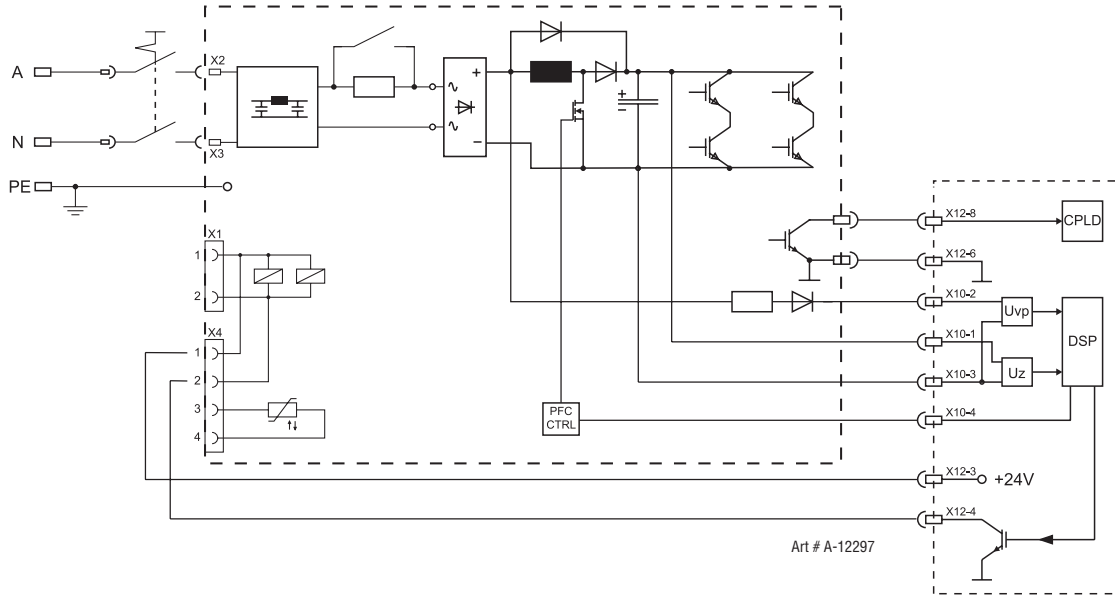


Figure 6-22: Main Circuit Description, Transtig 220AC/DC

Transtig 300AC/DC

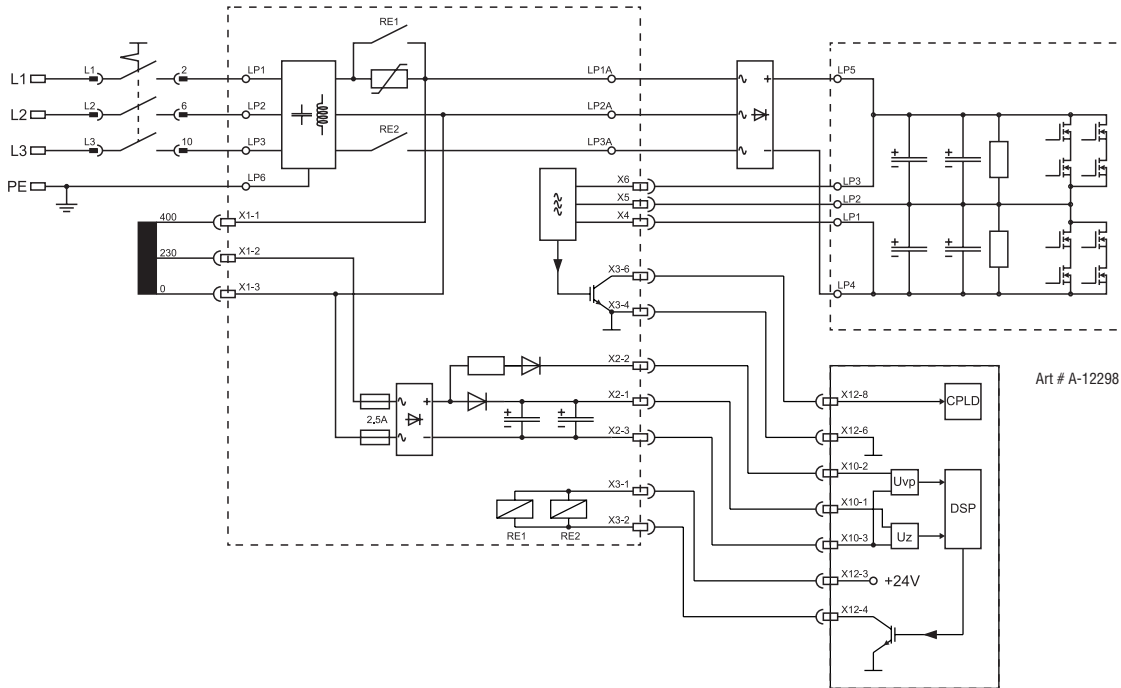


Figure 6-23: Main Circuit Description, Transtig 300AC/DC



WARNING

Turn off power and disconnect mains supply plug from receptacle before working on the unit. Allow two minutes for capacitors to discharge after disconnection from mains supply voltage.

The mains supply voltage is connected via a switch to the input rectifiers on the main inverter board through an inbuilt soft start and EMC filter on the Input EMC filter board. Overvoltage protection is provided by varistors.

The Transtig 300AC/DC is three phase and the rectifier directly charges the DC Bus bulk capacitor bank to high voltage.

The Transtig 220AC/DC is single phase and incorporates a PFC stage with IGBT's and diodes ahead of the DC Bus bulk capacitor bank.

The primary IGBT transistors switch the transformer primary at high frequency and varying duty cycle.

Secondary output voltage from the transformer is rectified by the output diodes to DC. This DC is controlled by the PWM of the primary side IGBT transistors, and is filtered by an inductor before connecting to the welding output terminals. IGBTs control whether AC or DC output is sent to the welding terminals. These IGBT's also control the polarity of the DC welding output.

A thermal overload device (thermal switch) is fixed to several heatsinks and magnetic components. When an over temperature occurs, the control circuit inhibits the trigger, gas solenoid, and the welding output. The thermal overload indicator LED on the front panel is illuminated.

The current transformer provides a signal to the control circuit to indicate both transformer primary current, and also detect transformer saturation. The Hall effect current sensor is powered from regulated + & - 15VDC supplies and provides a voltage signal proportional to the output welding current to allow the control circuit to regulate welding current.

When the power is turned on, the fans and the gas solenoid valve are turned on as part of the initial test.

SECTION 7:
KEY SPARE PARTS

7.01 220AC/DC Power Source

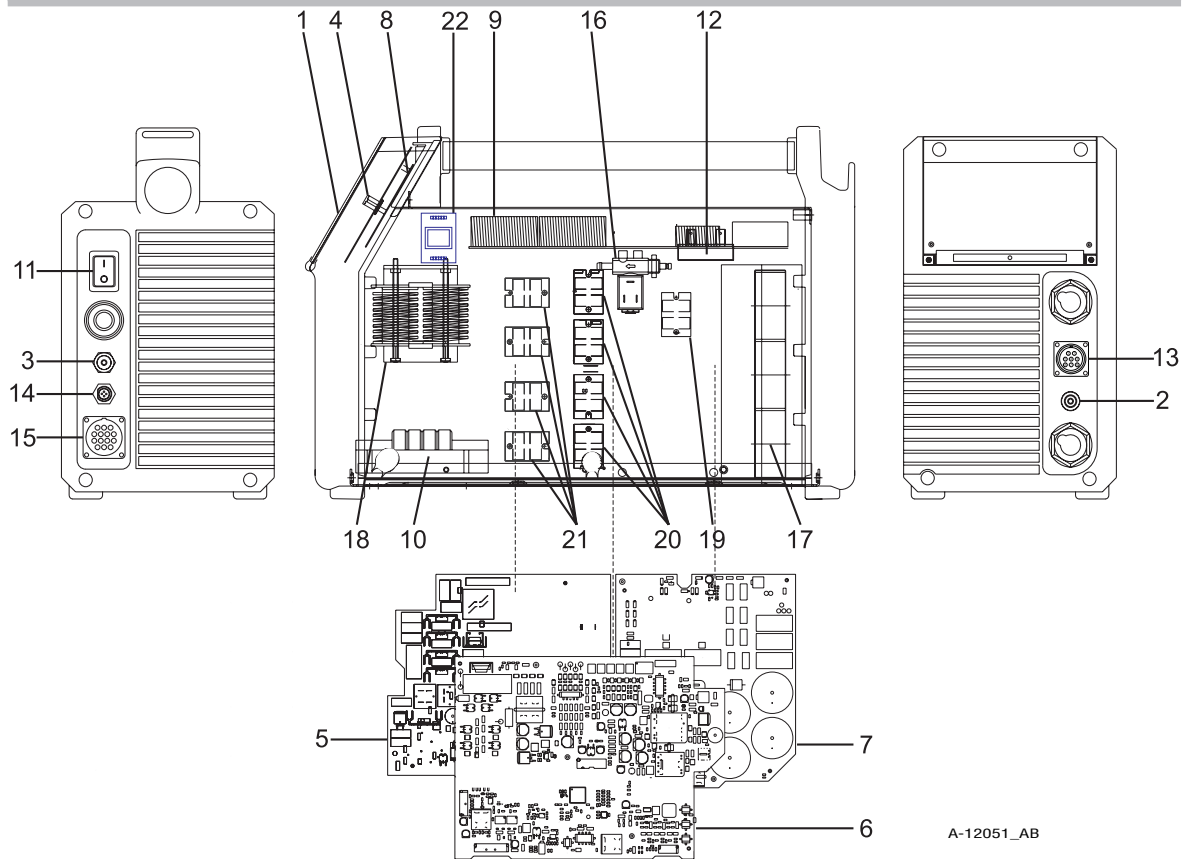


Figure 7-1: Transtig 220AC/DC Spare Parts

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

Transtig 220AC/DC Spare Parts		
Item	Part Number	Description
1	W7006300	Cover Control Panel
2	W7006301	Gas Outlet, Front Panel
3	W7006302	Gas inlet, Rear Panel
4	W7006303	Knob, Control
5	W7006304	PCB Secondary Rectifier
6	W7006305	PCB Control
7	W7006306	PCB Primary Inverter
8	W7006307	PCB Display
9	W7006308	PCB NEFI-NTC
10	W7006309	Transformer, Inverter
11	W7006310	Switch, On / Off
12	W7006311	Rectifier, Bridge, Mains Supply
13	W7006314	Cable Assy, 8 pin remote
14	W7006313	Cable Assy, 4 pin CAN
15	W7006312	Cable Assy, 14 pin remote
16	W7006315	Solenoid 24VDC
17	W7006316	Fan 12VDC
18	W7006317	Inductor HF
19	W7006318	PFC Module 500V 50A
20	W7006319	IGBT
21	W7006320	Diode, Output
22	W7006321	PCB Earth Monitor
23	704461	Dinse plug male 50mm ² (not shown)

Table 7-1: Transtig 220AC/DC Spare Parts

7.02 300AC/DC Power Source

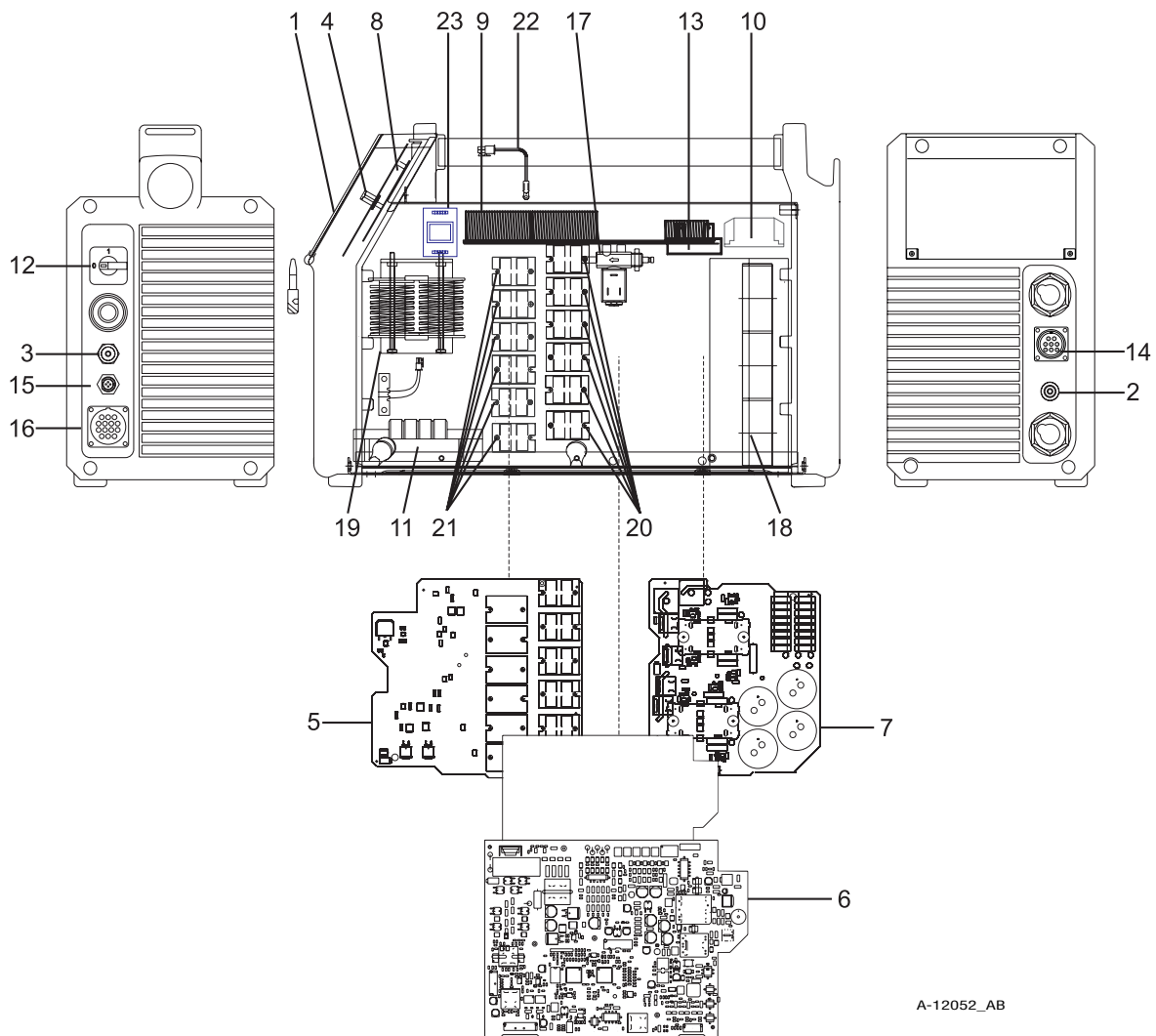


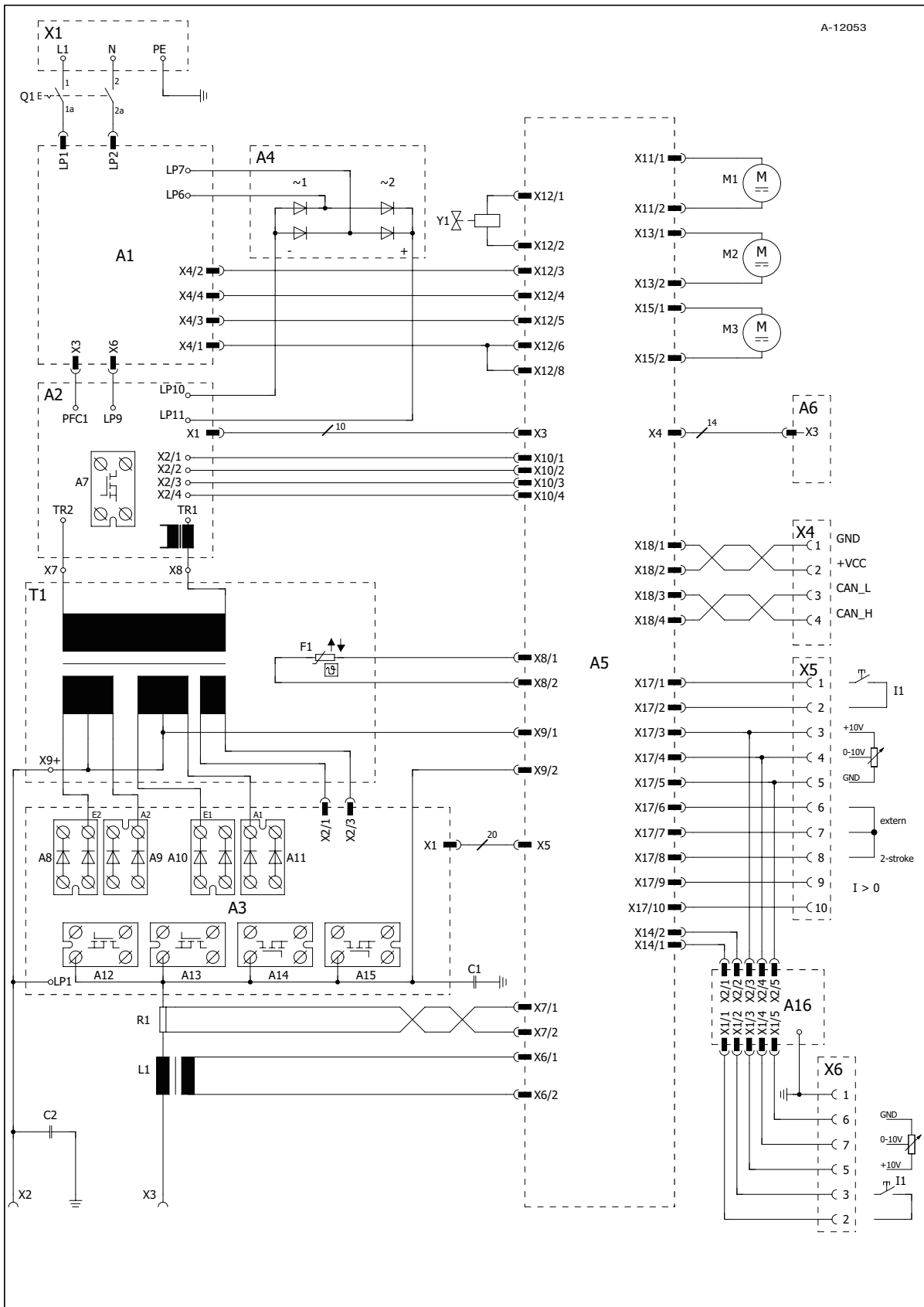
Figure 7-2: Transtig 300AC/DC Spare Parts

TRANSTIG 220AC/DC AND 300AC/DC POWER SOURCE

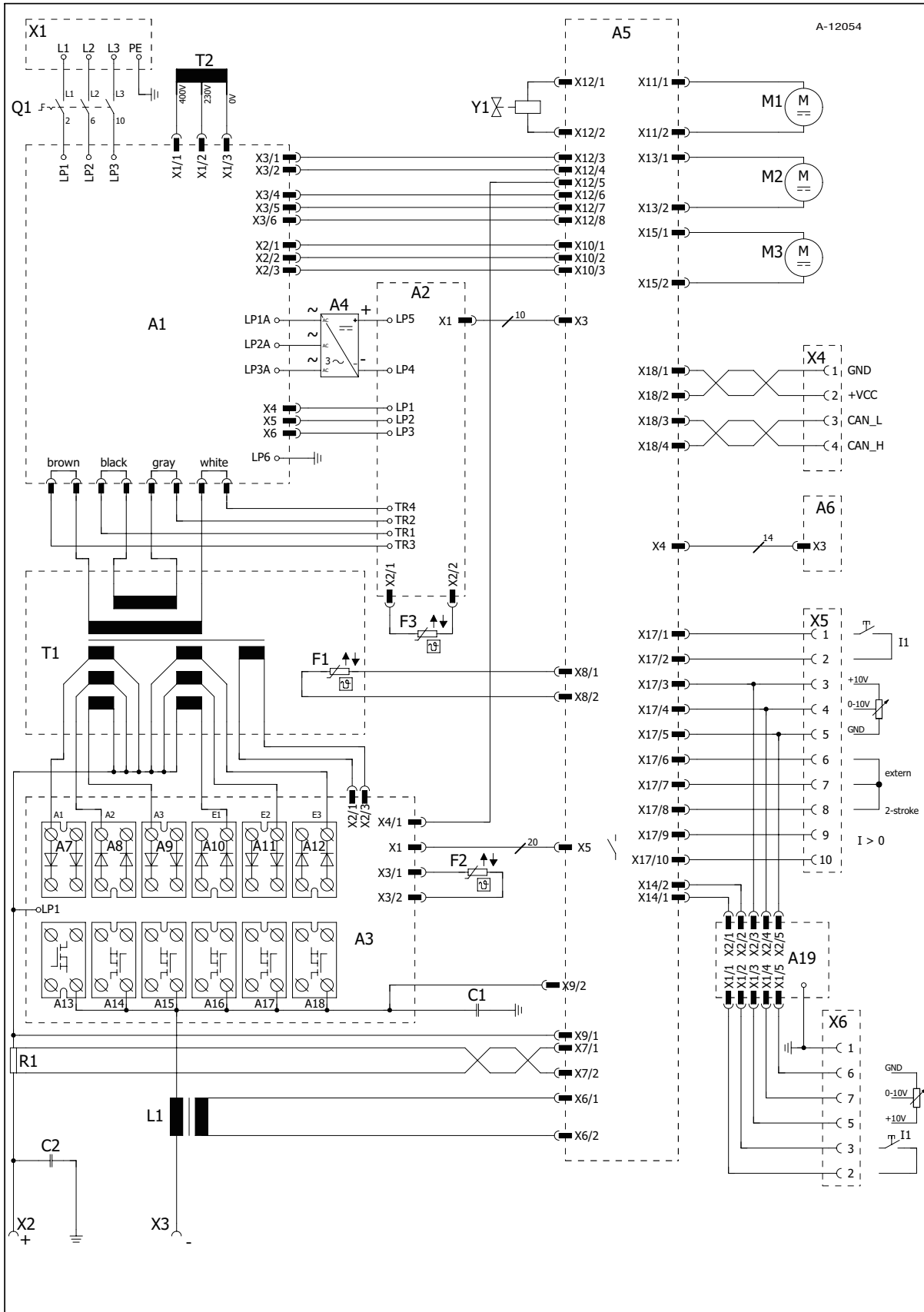
Transtig 300AC/DC Spare Parts		
Item	Part Number	Description
1	W7006300	Cover Control Panel
2	W7006301	Gas Outlet, Front Panel
3	W7006302	Gas inlet, Rear Panel
4	W7006303	Knob, Control
5	W7006323	PCB Secondary Rectifier
6	W7006330	PCB Control
7	W7006322	PCB Primary Inverter
8	W7006307	PCB Display
9	W7006324	PCB NEFI-1300
10	W7006325	Transformer, Control
11	W7006326	Transformer, Inverter
12	W7006327	Switch, On / Off, 3 pole
13	W7006328	Rectifier, Bridge, B6 36A Mains Supply
14	W7006314	Cable Assy, 8 pin remote
15	W7006313	Cable Assy, 4 pin CAN
16	W7006312	Cable Assy, 14 pin remote
17	W7006315	Solenoid 24VDC
18	W7006316	Fan 12VDC
19	W7006317	Inductor HF
20	W7006319	IGBT
21	W7006320	Diode, Output
22	W6000000	Thermal Sensor
23	W7006321	PCB Earth Monitor
24	704461	Dinse plug male 50mm ² (not shown)

Table 7-2: Transtig 300AC/DC Spare Parts

APPENDIX A: CIRCUIT DIAGRAM OF 220AC/DC



APPENDIX B: CIRCUIT DIAGRAM OF 300AC/DC



APPENDIX C: OPTIONAL ACCESSORIES

Part Number	Description
W4014604	TIG Torch 26F with 4m lead and remote control
BGSAK2	TIG Torch accessory kit
W4015800	Foot Control with 8m lead
646757	Electrode holder & Work Lead Set 5m 400A 50mm DINSE
646325	Electrode Holder & Work Lead Set 8m 400A 50mm DINSE
646763	Electrode Holder w / Deadman Switch & Work Lead Set 8m 400A 50mm DINSE
301526	Comet Edge Argon regulator/Flowmeter
704461	50mm Male DINSE cable connector
W7004913	Shielding Gas Hose Assembly
646265	NAKA Weld measurement gauge

Table 2-2: Options and Accessories

**CAUTION**

TIG Torch 26F is rated for 200A DC @ 30%; 300 A DC @ 14%; 220A AC @ 16%.

CIGWELD - LIMITED WARRANTY TERMS

LIMITED WARRANTY: CIGWELD Pty Ltd, A Victor Technologies Company, hereafter, "CIGWELD" warrants to customers of its authorized distributors hereafter "Purchaser" that its products will be free of defects in workmanship or material. Should any failure to conform to this warranty appear within the time period applicable to the CIGWELD products as stated below, CIGWELD shall, upon notification thereof and substantiation that the product has been stored, installed, operated, and maintained in accordance with CIGWELD's specifications, instructions, recommendations and recognized standard industry practice, and not subject to misuse, repair, neglect, alteration, or accident, correct such defects by suitable repair or replacement, at CIGWELD's sole option, of any components or parts of the product determined by CIGWELD to be defective.

CIGWELD MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHERS, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIMITATION OF LIABILITY: CIGWELD SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO, LOST PROFITS AND BUSINESS INTERRUPTION. The remedies of the Purchaser set forth herein are exclusive and the liability of CIGWELD with respect to any contract, or anything done in connection therewith such as the performance or breach thereof, or from the manufacture, sale, delivery, resale, or use of any goods covered by or furnished by CIGWELD whether arising out of contract, negligence, strict tort, or under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the goods upon which such liability is based. No employee, agent, or representative of CIGWELD is authorized to change this warranty in any way or grant any other warranty.

PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF REPLACEMENT PARTS OR ACCESSORIES ARE USED WHICH IN CIGWELD'S SOLE JUDGEMENT MAY IMPAIR THE SAFETY OR PERFORMANCE OF ANY CIGWELD PRODUCT. PURCHASER'S RIGHTS UNDER THIS WARRANTY ARE VOID IF THE PRODUCT IS SOLD TO PURCHASER BY NON-AUTHORIZED PERSONS.

The warranty is effective for the time stated below beginning on the date that the authorized distributor delivers the products to the Purchaser. Notwithstanding the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date CIGWELD delivered the product to the authorized distributor.

TERMS OF WARRANTY – JANUARY 2013

1. The Trade Practices Act 1974 (Commonwealth) and similar State Territory legislation relating to the supply of goods and services, protects consumers' interests by ensuring that consumers are entitled in certain situations to the benefit of various conditions, warranties, guarantees, rights and remedies (including warranties as to merchantability and fitness for purpose) associated with the supply of goods and services. A consumer should seek legal advice as to the nature and extent of these protected interests. In some circumstances, the supplier of goods and services may legally stipulate that the said conditions, warranties, guarantees, rights and remedies are limited or entirely excluded. The warranties set out in Clause 2 shall be additional to any nonexcludable warranties to which the Customer may be entitled pursuant to any statute.

2. Subject to Clause 3. CIGWELD gives the following warranties to the Customer:

Insofar as they are manufactured or imported by CIGWELD, goods will upon delivery be of merchantable quality and reasonably fit for the purpose for which they are supplied by CIGWELD.

CIGWELD will repair or, at its option, replace those of the goods which, upon examination, are found by CIGWELD to be defective in workmanship and/or materials.

CIGWELD reserves the right to request documented evidence of date of purchase.

3. The Warranty in Clause 2;

Is conditional upon:

The Customer notifying CIGWELD or our Accredited Distributor in writing of its claim within seven (7) days of becoming aware of the basis thereof, and at its own expense returning the goods which are the subject of the claim to CIGWELD or nominated Accredited Distributor/Accredited Service Provider. The goods being used in accordance with the Manufacturer's Operating Manuals, and under competent supervision.

Does not apply to:

Obsolete goods sold at auction, second-hand goods and prototype goods.

Breakdown or malfunction caused by accident, misuse or normal wear and tear.

Repairs or replacement made other than by CIGWELD or Accredited Service Providers, unless by prior arrangement with CIGWELD.

Replacement parts or accessories which may affect product safety or performance and which are not manufactured, distributed or approved by CIGWELD.

4. CIGWELD declares that, to the extent permitted by law, it hereby limits its liability in respect of the supply of goods which are not of a kind ordinarily acquired for personal, domestic or household use or consumption to any one or more of the following (the choice of which shall be at the option of CIGWELD).

The replacement of the goods or the supply of equivalent goods.

The repair of goods.

The payment of cost of replacing the goods or acquiring equivalent goods.

The payment of the cost of having goods repaired.

5. Except as provided in Clauses 2 to 4 above, to the extent permitted by statute, CIGWELD hereby excludes all liability for any loss, damage, death or injury of any kind whatsoever occasioned to the Customer in respect of the supply of goods including direct, indirect, consequential or incidental loss, damage or injury of any kind.

WARRANTY SCHEDULE – JANUARY 2013

These warranty periods relate to the warranty conditions in clause 2. All warranty periods are from date of sale from the Accredited Distributor of the equipment. Notwithstanding the foregoing, in no event shall the warranty period extend more than the time stated plus one year from the date CIGWELD delivered the product to the Accredited Distributor. Unless otherwise stated the warranty period includes parts and labour. CIGWELD reserves the right to request documented evidence of date of purchase.

TRANSTIG 220AC/DC and TRANSTIG 300AC/DC POWER SOURCE	WARRANTY PERIOD	
	PARTS	LABOUR
Original main power magnetics.	3 Year	2 Year
Original main power rectifiers, printed circuit boards and power switch semiconductors.	2 Year	2 Year
All other circuits and components including, but not limited to, relays, switches, contactors, solenoids, fans and electric motors.	1 Year	1 Year
ACCESSORIES	WARRANTY PERIOD	
TIG torch, electrode holder lead and work lead.	3 Months	
TIG torch consumable items.	NIL	
Gas regulator/flowmeter (excluding seat assembly, pressure gauges, elastomer seals and "O" rings).	1 Year	
Regulator seat assemblies and pressure gauges.	6 Months	
Elastomer seals and "O" rings used in the equipment.	3 Months	

Please note that the information detailed in this statement supersedes any prior published data produced by CIGWELD.

Australia Terms of Warranty – 2013

Effective 1st January 2012, all warranties against defects (also known as a manufacturer's warranty) supplied with goods or services must comply with the new Australian consumer law regulations (2010).

This Warranty Statement should be read in conjunction with the Warranty Schedule contained in the operating instructions of the product. This schedule contains the warranty period applicable to the product

Any claim under this warranty must be made within the warranty period which commences on the date of purchase of the product. To make a claim under the warranty, take the product (with proof of purchase from a Cigweld Accredited Seller) to the store where you purchased the product or contact Cigweld Customer Care 1300 654 674 for advice on your nearest Service Provider.

All costs associated with lodging the warranty claim including the return of goods to Cigweld or our Nominated Accredited Distributor/Accredited Service Provider are the responsibility of the consumer.

This warranty is given.
Cigweld Pty Ltd
A.B.N. 56007226815
71 Gower Street, Preston
Victoria, Australia, 3072
Phone: 1300 654 674
Email: enquiries@cigweld.com.au
Website: www.cigweld.com.au

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Failures due to incorrect use are not covered by this warranty and consumers are reminded to only use the product in accordance with the Operating Instruction supplied with the product. Additional copies of Operating Instructions are available from Cigweld Customer Care 1300 654 674 or the Website.



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