CIGWELD

AN ESAB® BRAND

MIG

WeldSkill 100, 135, 150 MIG

OPERATING MANUAL

WARRANTY*	STANDARDS
1 YEAR	AS

INPUT SUPPLY	OUTPUT CURRENT	WIRE SIZE
240V 10A	100A AC	0.8mm MAX

P/N: W1004100

INPUT SUPPLY	OUTPUT CURRENT	WIRE SIZE
240V 10A	135A DC	0.8mm MAX

P/N: W1004135

INPUT SUPPLY	OUTPUT CURRENT	WIRE SIZE
240V 15A	150A DC	0.9mm MAX

P/N: W1004150

Version No: AD **Issue Date:** 08-10-2019 **Manual No:** 0-5129

CIGWELD
AN ESAB BRAND

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.

This Operating 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.

We have made every effort to provide you with accurate instructions, drawings, and photographs of the product(s) while writing this manual. However errors do occur and we apologize if there are any contained in this manual.

Due to our constant effort to bring you the best products, we may make an improvement that does not get reflected in the manual. If you are ever in doubt about what you see or read in this manual with the product you received, then check for a newer version of the manual on our website or contact our customer support for assistance.

YOU ARE IN GOOD COMPANY!

The Brand of Choice for Contractors and Fabricators Worldwide.

CIGWELD is a Market Leading Brand of Arc Welding Products for ESAB. 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.

Operating Manual Number 0-5129 for:

Cigweld WeldSkill 100 Mig Welding Machine	Part Number W1004100
Cigweld WeldSkill 135 Mig Welding Machine	Part Number W1004135
Cigweld WeldSkill 150 Mig Welding Machine	Part Number W1004150

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www.cigweld.com.au

Publication Date: May 06, 2009
Revision AD Date: October 08, 2019

Record the following information for Warranty purposes:

Where Purchased: _____

Purchase Date: _____

Equipment Serial #: _____

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TABLE OF CONTENTS

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.**

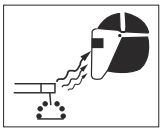
1.01 Arc Welding Hazards

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.



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 AS1674.1 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.

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 (GWAW) (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
	Greater than 400	14
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
	Greater than 350	14
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.

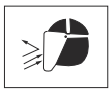
1. Keep your head out of the fumes. Do not breath the fumes.
2. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instruction 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 vapors 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 35 ft (10.7 m) 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 traveling 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.
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

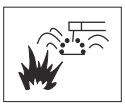
Engines can be dangerous.

WARNING

ENGINE EXHAUST GASES can kill.

Engines produce harmful exhaust gases.

1. Use equipment outside in open, well-ventilated areas.
2. If used in a closed area, vent engine exhaust outside and away from any building air intakes.



WARNING

ENGINE FUEL can cause fire or explosion.

Engine fuel is highly flammable.

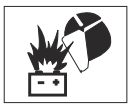
1. Stop engine before checking or adding fuel.
2. Do not add fuel while smoking or if unit is near any sparks or open flames.
3. Allow engine to cool before fueling. If possible, check and add fuel to cold engine before beginning job.
4. Do not overfill tank — allow room for fuel to expand.
5. Do not spill fuel. If fuel is spilled, clean up before starting engine.

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.



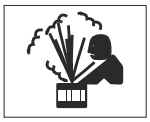
WARNING

SPARKS can cause BATTERY GASES TO EXPLODE; BATTERY ACID can burn eyes and skin.

Batteries contain acid and generate explosive gases.

1. Always wear a face shield when working on a battery.
2. Stop engine before disconnecting or connecting battery cables.
3. Do not allow tools to cause sparks when working on a battery.
4. Do not use welder to charge batteries or jump start vehicles.

5. Observe correct polarity (+ and –) on batteries.



WARNING

STEAM AND PRESSURIZED HOT COOLANT can burn face, eyes, and skin.

The coolant in the radiator can be very hot and under pressure.

1. Do not remove radiator cap when engine is hot. Allow engine to cool.
2. Wear gloves and put a rag over cap area when removing cap.
3. Allow pressure to escape before completely removing cap.

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 2: Electrical, AS1674.2-2007 from SAI Global Limited, www.saiglobal.com

DECLARATION OF CONFORMITY

According to
Limited Duty Portable Arc Welding and Allied Process
Power Sources Directive AS 60974.6: 2006 (equivalent to IEC 60974-6:2003, MOD)

Type of equipment
Welding Power Source

Type designation etc.
Welding Performance

Brand name or trade mark
Cigweld

Manufacturer or his authorised representative established within the EEA
Name, address, telephone No:
Cigweld Pty Ltd
71 Gower Street
Preston, Victoria, Australia, 3072
Phone: +61 3 9474 7400

The following harmonised standard in force within the EEA has been used in the design:

AS/NZS CISPR 11:2004 applicable to Industrial Equipment - generic emissions and regulations.

IEC 60974-6 applicable to welding equipment and associated accessories.

AS 60974.6 applicable to welding equipment and associated accessories.

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Date	Signature	Position
01-03-2019	Flavio Santos	Vice President, Global Welding

2019

SECTION 2: INTRODUCTION

2.01 How To Use This Manual

This Operating Manual applies to just specification or part numbers listed on page i.

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.

Electronic copies of this manual can also be downloaded at no charge in Acrobat PDF format by going to the Cigweld web site listed below and clicking on the Literature Library link:

http://www.cigweld.com.au

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 i 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.

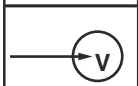
Include all equipment identification numbers as described above along with a full description of the parts in error.

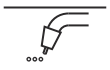
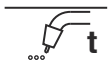
Move the equipment to the installation site before un-crating the unit. Use care to avoid damaging the equipment when using bars, hammers, etc., to un-crate the unit.

2.04 Symbol Chart

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

	On
	Off
	Dangerous Voltage
	Increase/Decrease
	Circuit Breaker
	AC Auxiliary Power
	Fuse
A	Amperage
V	Voltage
Hz	Hertz (cycles/sec)
f	Frequency
—	Negative
+	Positive
⎓	Direct Current (DC)
	Protective Earth (Ground)
	Line
	Line Connection
	Auxiliary Power
115V 15A ~	Receptacle Rating- Auxiliary Power

1 ~	Single Phase
3 ~	Three Phase
	Three Phase Static Frequency Converter-Transformer-Rectifier
	Remote
X	Duty Cycle
%	Percentage
	Panel/Local
	Shielded Metal Arc Welding (SMAW)
	Gas Metal Arc Welding (GMAW)
	Gas Tungsten Arc Welding (GTAW)
	Air Carbon Arc Cutting (CAC-A)
	Constant Current
	Constant Voltage Or Constant Potential
	High Temperature
	Fault Indication
	Arc Force
	Touch Start (GTAW)
	Variable Inductance
	Voltage Input

	Wire Feed Function
	Wire Feed Towards Workpiece With Output Voltage Off.
	Welding Gun
	Purging Of Gas
	Continuous Weld Mode
	Spot Weld Mode
	Spot Time
	Preflow Time
	Postflow Time
	2 Step Trigger Operation Press to initiate wirefeed and welding, release to stop.
	4 Step Trigger Operation Press and hold for preflow, release to start arc. Press to stop arc, and hold for preflow.
	Burnback Time
	Disturbance In Ground System
IPM	Inches Per Minute
MPM	Metres Per Minute
	Spool Gun
AUTO SET MIG STICK TIG	Auto Settings for MIG, STICK, TIG

Art # A-04937_AC

2.05 Description

Weldskill 100 Mig

The WeldSkill 100 Mig is a semi-automatic Flux Cored Arc Welder (FCAW) with an integrated wire feed unit. The Power Source is designed to meet the broad operating needs of the home weekend welder. It complies to Australian Standard AS 60974.6 The WeldSkill 100 Mig gives excellent performance on mild steel using Cigweld gasless flux cored wire.

The WeldSkill 100 Mig is supplied as a complete package ready to weld including a spool of 0.8mm Cigweld gasless mild steel wire. The following instructions detail how to correctly set up the machine and provide important safety information. Please read these instructions thoroughly before use in order to obtain the best results from your WeldSkill 100 Mig Welder.

WeldSkill 135 Mig

The WeldSkill 135 Mig is a semi-automatic Gas Metal Arc Welder (GMAW-commonly MIG) with an integrated wire feed unit. The Power Source is designed to meet the broad operating needs of the home weekend welder. It complies to Australian Standard AS 60974.6

The WeldSkill 135 Mig gives excellent performance on mild steel, stainless steel, and aluminium wires with Argon based shielding gases. The WeldSkill 135 Mig is supplied ready to weld including a spool of 0.8mm Cigweld gasless mild steel wire (for use with gas MIG welding — the gas regulator/flowmeter, gas MIG wire and gas cylinder are not included). The following instructions detail how to correctly set up the machine and give guidelines on gaining the best production efficiency from the Power Source. Please read these instructions thoroughly before using your WeldSkill 135 Mig Welder.

WeldSkill 150 Mig

The WeldSkill 150 Mig is a semi-automatic Gas Metal Arc Welder (GMAW-commonly MIG) with an integrated wire feed unit. The Power Source is designed to meet the broad operating needs of the home weekend welder. It complies to Australian Standard AS 60974.6

The WeldSkill 150 Mig gives excellent performance on mild steel, stainless steel and aluminium wires with Argon based shielding gases. The WeldSkill 150 Mig is supplied ready to weld including a spool of 0.8mm Cigweld gasless mild steel wire. (for use with gas MIG welding — gas MIG wire and gas cylinder are not included). The following instructions detail how to correctly set up the machine and give guidelines on gaining the best production efficiency from the Power Source. Please read these instructions thoroughly before using your WeldSkill 150 Mig welder.

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 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 unauthorised 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

	WeldSkill 100 Mig	WeldSkill 135 Mig	WeldSkill 150 Mig
Power Source	✓	✓	✓
Mig Torch (fitted to 100 &135)	✓	✓	-
Mig Torch (Euro Torch Connector)	-	-	✓
Work Lead (fitted to 100 &135)	✓	✓	-
Work Lead (25mm^2 Dinse Connector)	-	-	✓
Mini Spool 0.8mm Gasless Mild Steel Mig Wire	✓	✓	✓
Argon Regulator/Flowmeter	-	-	✓
Chipping Hammer/Wire Brush	✓	✓	-
Welding Faceshield with Lens	✓	✓	-
Feed Roll 0.6/0.8mm (Spare)		✓	✓
Feed Roll 1.0/1.2mm (Spare)		✓	✓
Contact Tip 0.6mm (Spare)	✓	✓	✓
Contact Tip 0.8mm (Spare)	✓	✓	✓
Contact Tip 0.9mm (Spare)		✓	✓
Contact Tip 1.0mm (Spare)		✓	✓
Contact Tip 1.2mm (Spare)		✓	✓
Nozzle (Spare)	✓	✓	✓

2.09 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 15% duty cycle, 90 amperes at 23.6 volts. This means that it has been designed and built to provide the rated amperage (90A) for 1.5 minutes, i.e. arc welding time, out of every 10 minute period (15% of 10 minutes is 1.5 minutes). During the other 8.5 minutes of the 10 minute period the Welding Power Source must idle and allowed to cool.

2.10 Specifications

Description	WeldSkill 100 Mig	WeldSkill 135 Mig	WeldSkill 150 Mig
Power Source Part Number	W1004100	W1004135	W1004150
Cooling	Fan Cooled	Fan Cooled	Fan Cooled
Welder Type	Conventional Transformer	Conventional Transformer	Conventional Transformer
Welding Power Source Mass	13 kg	20 kg	20 kg
Dimensions	H 300mm x W 180mm x D 350mm	H 375mm x W 245mm x D 420mm	H 375mm x W 245mm x D 420mm
Manufactured to Australian Standard	AS 60974.6-2006	AS 60974.6-2006	AS 60974.6-2006
Number of Phases	1	1	1
Nominal Supply Voltage	240V ±15%	240V ±15%	240V ±15%
Nominal Supply Frequency	50Hz	50Hz	50Hz
Welding Current Range	28 – 100 Amps	38 – 135 Amps	60 – 150 Amps
Factory Fitted Supply Plug Rating	10 Amps	10 Amps	15 Amps
Effective Input Current (I1eff)	4.6 Amps	9.7 Amps	11.6 Amps
Maximum Input Current (I1max)	13 Amps	24.3 Amps	27.2 Amps
Single Phase Generator Requirement	4 KVA	6.5 KVA	7 KVA
Welding Output, 40°C, 10 min.	90A @ 10%,22.2V	120A @ 10%, 20.0V	130A @ 10%, 20.5V
	57A @ 25%, 20.7V	75A @ 25%, 17.8V	82A @ 25%, 18.1V
	28A @ 100%, 23.7V	38A @ 100%, 15.9V	41A @ 100%, 16.1V
Protection Class	IP21S	IP21S	IP21S

NOTE

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.

2.11 Options and Accessories

Description	Part Number
CutSkill Preset Argon Regulator/ Flowmeter Vertical Inlet	201030
CutSkill Preset Argon Regulator/ Flowmeter Side Inlet	201031
WeldSkill Regulator/Flowmeter, 55LPM, 2 Gauge	210254
WeldSkill Welding Equipment Trolley	W4011501

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SECTION 3: INSTALLATION

3.01 Environment

These units are designed for use in environments with increased hazard of electric shock.

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.

3.02 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 IP21S as outlined in AS 60529 . 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.

3.03 Ventilation

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

3.04 Mains Supply Voltage Requirements

The Mains supply voltage should be within ± 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 2-4.

WARNING

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

3.05 Welding Face Shield Assembly

WARNING

The Welding Shade Lens must be correctly fitted to the Welding Face Shield prior to use.

- Remove the main face shield assembly and the hand grip from the packaging.
- Hook the handle into the main face shield assembly as shown in Figure 3-1 below.
- Clip the welding lense supplied into position as shown in Figure 3-2 below.

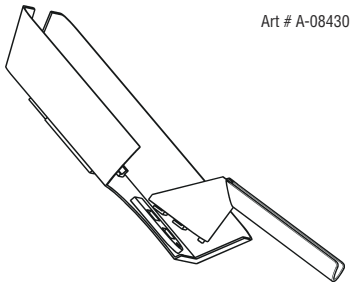


Figure 3-1: Hook handle into the main face shield assembly

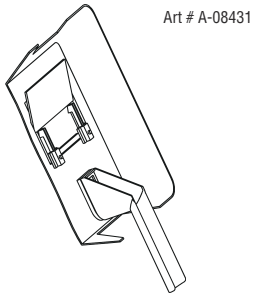


Figure 3-2: Clip welding lense into position as shown

3.06 Face Shield Maintenance

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.

Note: Faceshield not supplied with WeldSkill 150Mig.

NOTES

• Inspect lenses frequently. Immediately replace any scratched, cracked, or pitted lenses as they may impair visibility and reduce protection.

• Inspect Faceshield Shell frequently. Immediately replace any damaged or worn components.

• The Faceshield and Lens should be cleaned after use with a soft cloth.

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 nor 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 974-13 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 it's 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 it's 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.

3.08 Using a Shielding Gas for (GMAW) Process

NOTE:

Shielding Gas is not required if the unit is used with self shielded FCAW (flux cored arc welding) wires.

Cylinder Positioning

Chain the gas cylinder to a wall or other support to prevent the cylinder from falling over. If an optional portable mounting is used, follow the instructions provided with it. Remove the cap from the cylinder.

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 handing 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.

CAUTION

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

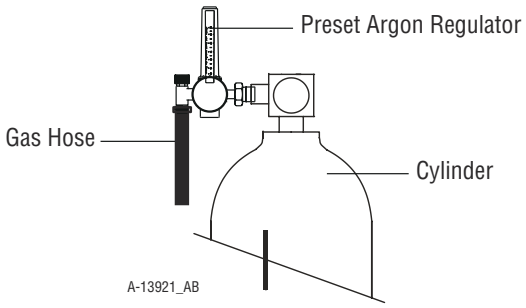


Figure 3-3 Fit Regulator to Cylinder

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 lintless 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. The flowmeter must be in the vertical position to read accurately.
5. The regulator/flowmeter has a self-reseating relief valve – not designed to protect down stream equipment. To protect sensitive down-stream equipment a separate safety device may be necessary.

Operation

With the regulator connected to cylinder or pipeline:

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. Since the regulator is a preset type, no adjustments to the regulator are necessary. Before opening the cylinder valve, be sure that the flow adjusting valve is in a finger-tight "OFF" position (clockwise).
3. Slowly and carefully, open the cylinder valve until the maximum pressure registers on the high pressure gauge.

CAUTION

DO NOT purge oxidising or flammable gases in the presence of flame, lighted cigarettes, or other sources of ignition or in a confined space. Open each downstream valve in turn, if more than one regulator is used. Close one valve before opening the next one. This procedure will prevent explosive gas mixtures occurring in the welding hose between regulators and equipment.

Close equipment valve(s) after purging, and test all connections for leaks with a suitable leak detection solution or soapy water. Never use a flame when testing for leaks.

Adjusting Flow Rate

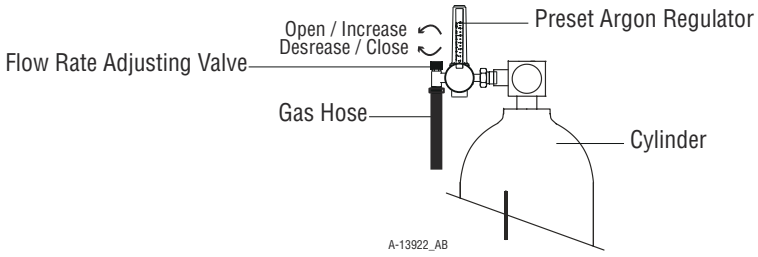


Figure 3-4 Adjust Flow Rate

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

1. Slowly turn adjusting valve in an anti-clockwise direction to open and increase until the bobbin in the flow tube 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 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.

3.09 Attaching the Euro Style Connection WeldSkill 150 MIG Torch.

Fit the MIG Torch to the Power Source by pushing the torch connector into the (A) Mig torch adaptor and screwing the plastic torch collar clockwise to secure the Mig torch to the Mig torch adaptor. To remove the Mig Torch simply reverse these directions.

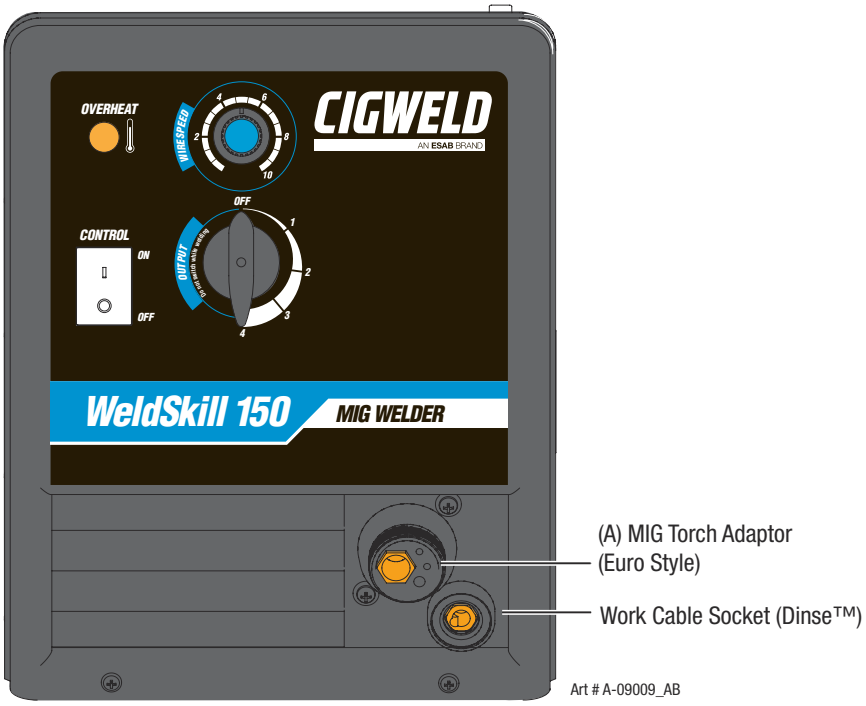


Figure 3-5 Attaching Mig Torch

3.10 Polarity Changeover (WeldSkill 135 and 150 MIG Only)

WARNING

ELECTRIC SHOCK CAN KILL! Make certain the machine is unplugged from the power receptacle. Do not plug machine in until told to do so in these instructions

As delivered from the factory, the output polarity is connected as (reverse polarity). The output terminals are located on the interior panel of the welding power source.

PROCESS	POLARITY	CABLE CONNECTIONS	
		CABLE TO MIG TORCH (Red Cable)	CABLE TO WORK (Black Cable)
1. GMAW* – Solid Wire & flux cored with shielding gas	1.Straight Polarity*	1. Connected to (+) Pos. output terminal	1. Connected to (-) Neg. output terminal
2. FCAW* – Self-shielding Wire – no Shielding Gas	2. Reverse Polarity*	2. Connected to (-) Neg. output terminal	2. Connected to (+) Pos. output terminal

* Exception: Check with the MIG Wire Manufacturer for recommended polarity.

Table 3-1: Process Cable Connections

Connection for GMAW (straight polarity)

1. Open the door to the machine.
2. Remove the polarity terminal knobs.
3. Set up the polarity (as per Table 3-1 above) by removing the leads from the terminals and reversing them if necessary. Refer to Figure 3-6.
4. Replace the polarity terminal knobs.

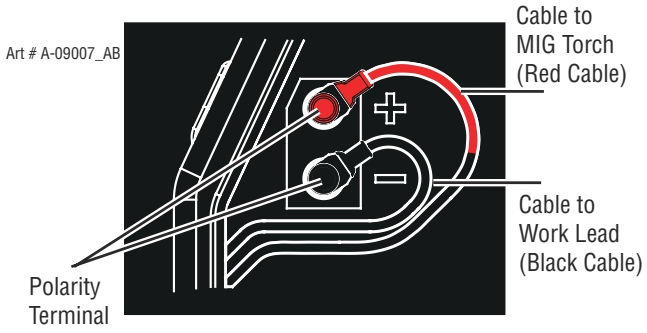


Figure 3-6: Connection for GMAW (straight polarity)

NOTE

Ensure that the polarity terminal knobs are tightly secured and that there is no connection between positive and negative terminals.

Connection for FCAW (reverse polarity)

1. Open the door to the machine.
2. Remove the polarity terminal knobs.
3. Set up the polarity (as per Table 3-1 above) by removing the leads from the terminals and reversing them if necessary. Refer to Figure 3-7.
4. Replace the polarity terminal knobs.

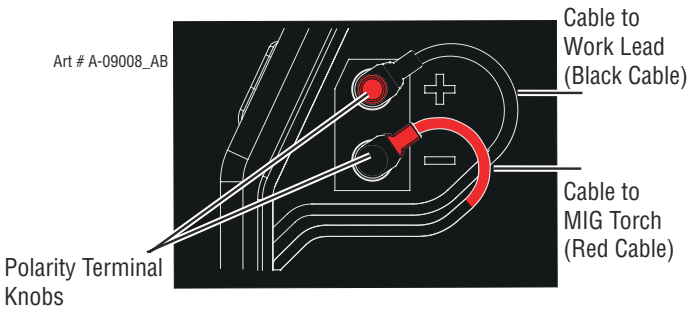


Figure 3-7: Connection for FCAW (reverse polarity)

NOTE

Ensure that polarity terminal knobs are tightly secured and that there is no connection between positive and negative terminals.

3.11 Installing Minispool (100mm diameter) – WeldSkill 100 MIG

Assemble parts in sequence shown below in figure Figure 3-8.

1. Minispool
2. Spacer
3. Spring
4. Locking Pin
   Align and Push in and turn clockwise 90 degrees to secure in place.

Note: Only Minispools of 100mm diameter are suitable for use with the WeldSkill 100 Mig.

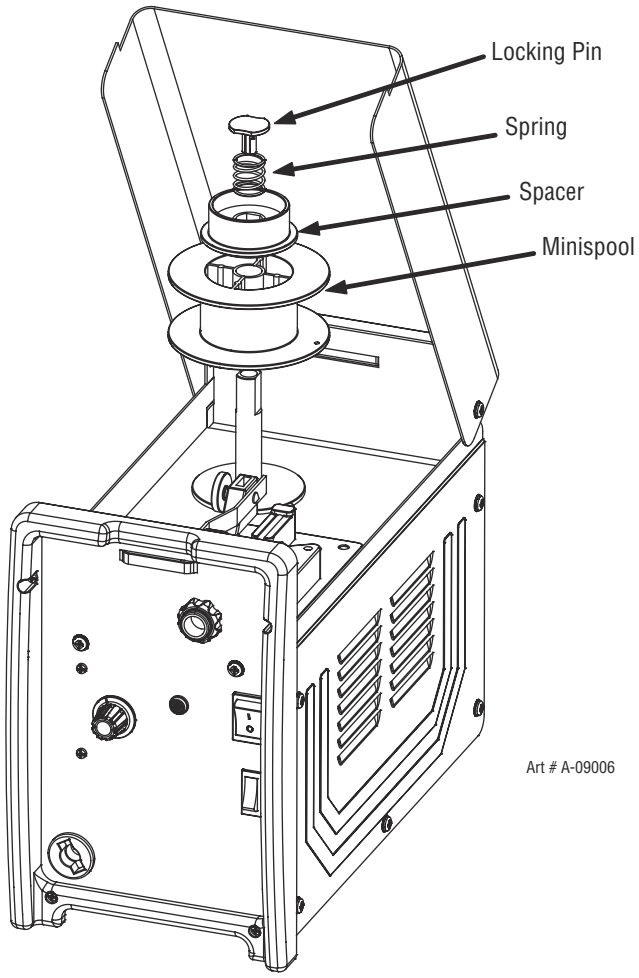


Figure 3-8: 100mm Minispool Installation

3.12 Installing Minispool (100mm diameter) – WeldSkill 135 and 150 MIG

As delivered from the factory, the unit is set for a Minispool (100mm diameter).

Assemble parts in sequence shown below in figure 3-9.

1. Friction Washer
2. Minispool
3. Spacer
4. Wingnut
   Adjustment of this wingnut will control the Mig Wire Spool Brake. Clockwise rotation of the wingnut tightens the brake. The Brake is correctly adjusted when the spool stops within 10 to 20mm (measured at the outer edge of the spool) after Mig Torch trigger is released. Wire should be slack without becoming dislodged from the spool.

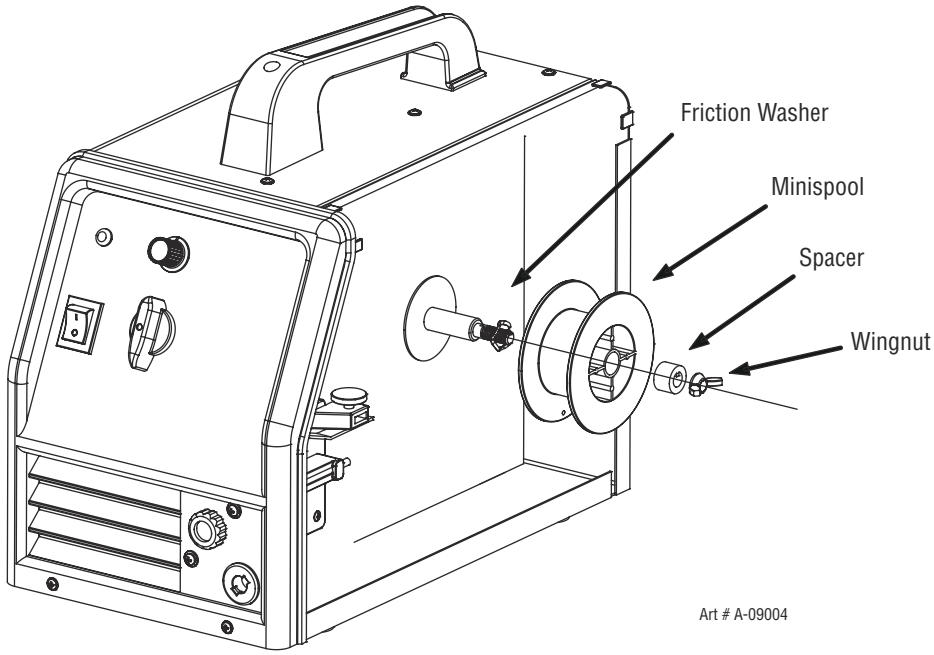


Figure 3-9: 100mm Spool Installation

3.13 Installing Handispool (200mm diameter) – WeldSkill 135 and 150 MIG

As delivered from the factory, the unit is set for a Minispool (100mm diameter).

Assemble parts in sequence shown below in figure 3-10.

1. Remove Minispool (if already in place).
2. Friction Washer
3. Wire spool hub Handispool (200mm) (if not already in place)
4. Handispool
   Ensure that pin on Wire spool hub aligns with hole allocated in Handispool.
5. Spacer
6. Wingnut
   Adjustment of this wingnut will control the Mig Wire Spool Brake. Clockwise rotation of the wingnut tightens the brake. The Brake is correctly adjusted when the spool stops within 10 to 20mm (measured at the outer edge of the spool) after Mig Torch trigger is released. Wire should be slack without becoming dislodged from the spool.

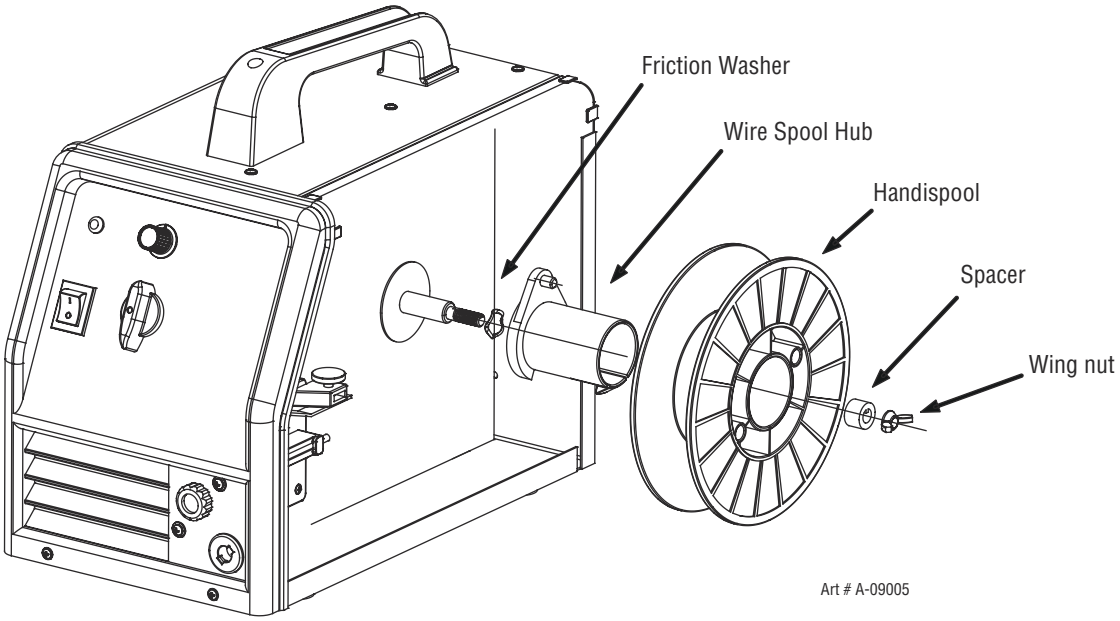


Figure 3-10 200mm Spool Installation

3.14 Inserting Wire into the Wire Feed Mechanism

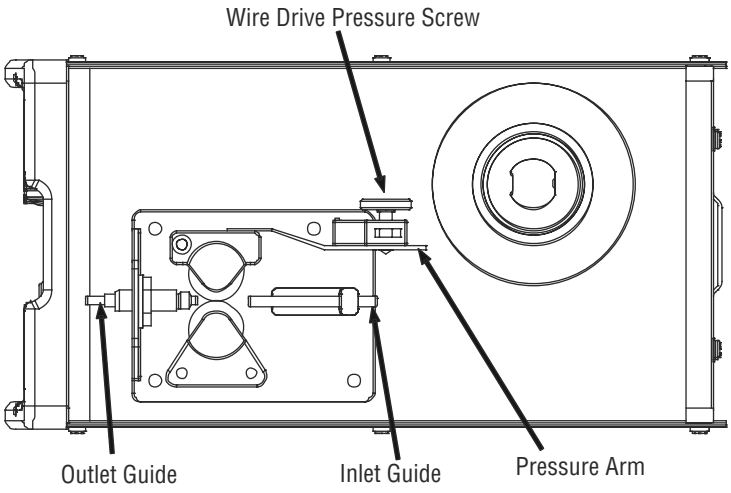
Lift up the pressure arm and pass the electrode wire through the inlet guide, between the rollers, through the outlet guide and into the MIG torch. Lower the pressure arm and adjust the pressure accordingly. Plug the mains supply lead into a suitable 240VAC outlet and turn the front panel Control Power switch to ON. With the Mig Torch lead reasonably straight, feed the wire through the torch by depressing the trigger switch. Fit the appropriate contact tip for the electrode wire size being used.

WARNING

The electrode wire will be at welding voltage potential whilst it is being fed through the system.

WARNING

Keep Mig Torch away from eyes and face.
Moving Parts can cause injury.



WeldSkill 100 MIG

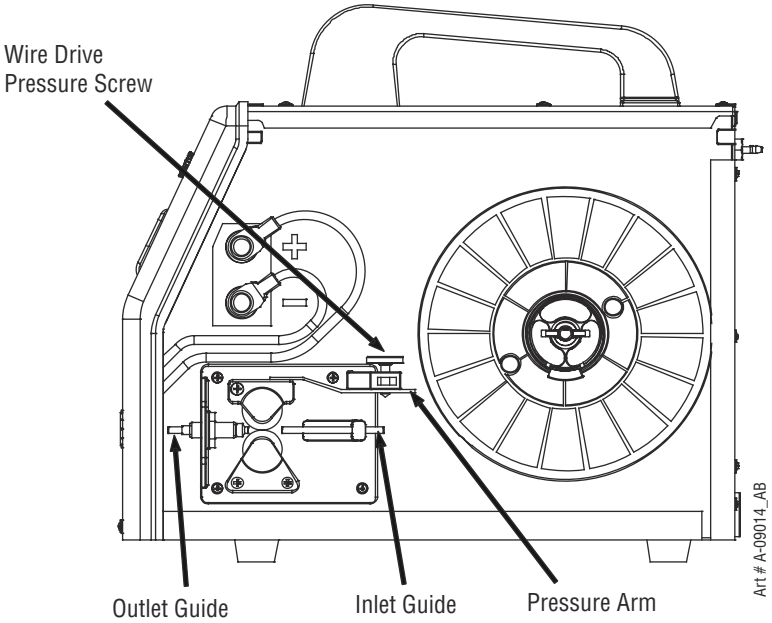


Figure 3-11 WeldSkill 135 Mig and 150 Mig

3.15 Drive Roller Pressure Adjustment

The pressure roller applies pressure to the grooved feed roller via an adjustable pressure screw. These devices should be adjusted to a minimum pressure that will provide satisfactory wirefeed without slippage. If slipping occurs, and inspection of the wire contact tip reveals no wear, distortion or burn back jam, the conduit liner should be checked for kinks and clogging by metal flakes and swarf. If it is not the cause of slipping, the feedroll pressure can be increased by rotating the pressure screw clockwise. The use of excessive pressure may cause rapid wear of the feed rollers, shafts and bearing.

3.16 Changing the Drive Roll

To change drive roller remove retaining screws. Remove drive roller retaining bracket by sliding outward then remove drive roller from shaft. To replace drive roller simply reverse these directions.

A dual groove feed roll is supplied as standard. Select the groove size required with the chosen wire size marking facing outwards.

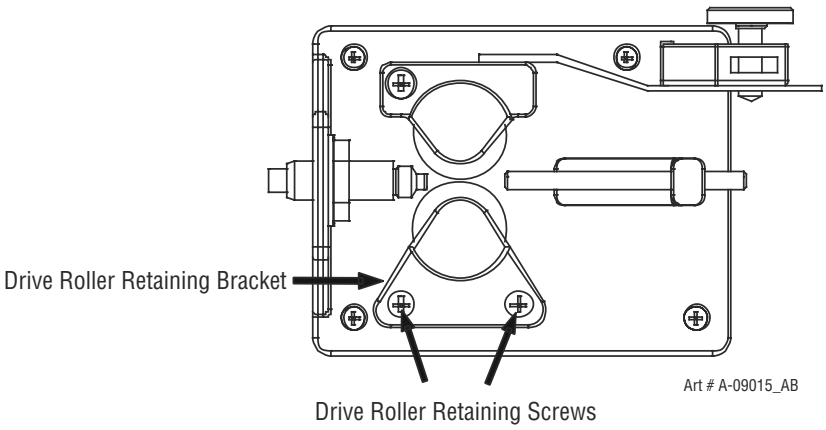


Figure 3-12

WARNING

Moving Parts can cause injury.

3.17 Setup For WeldSkill 100 MIG

WARNING

Before connecting the work clamp to the work and inserting the electrode wire into the Mig Torch make sure the Mains power supply is switched off.

Moving Parts can cause injury.

CAUTION

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

NOTE

Suitable for Gasless Mig Wire only. Refer to the set up guide located on the inside of the wirefeed compartment door.

A. Switch the Control Switch located on the front panel to the OFF position.

B. Place the MIG wire spool onto the spool holder. Refer to Section 3.11 for 100mm diameter spools.

C. Feed Wire through the wire drive mechanism. Refer to Section 3.14 for this procedure.

D. Power source settings are adjusted using the Output Voltage Switch located on the front panel. (Refer to Section 4.01D).

E. As a guide for the Welding Parameter settings for the welding job refer to the Weld Guide located on the inside of the wirefeed compartment top cover.

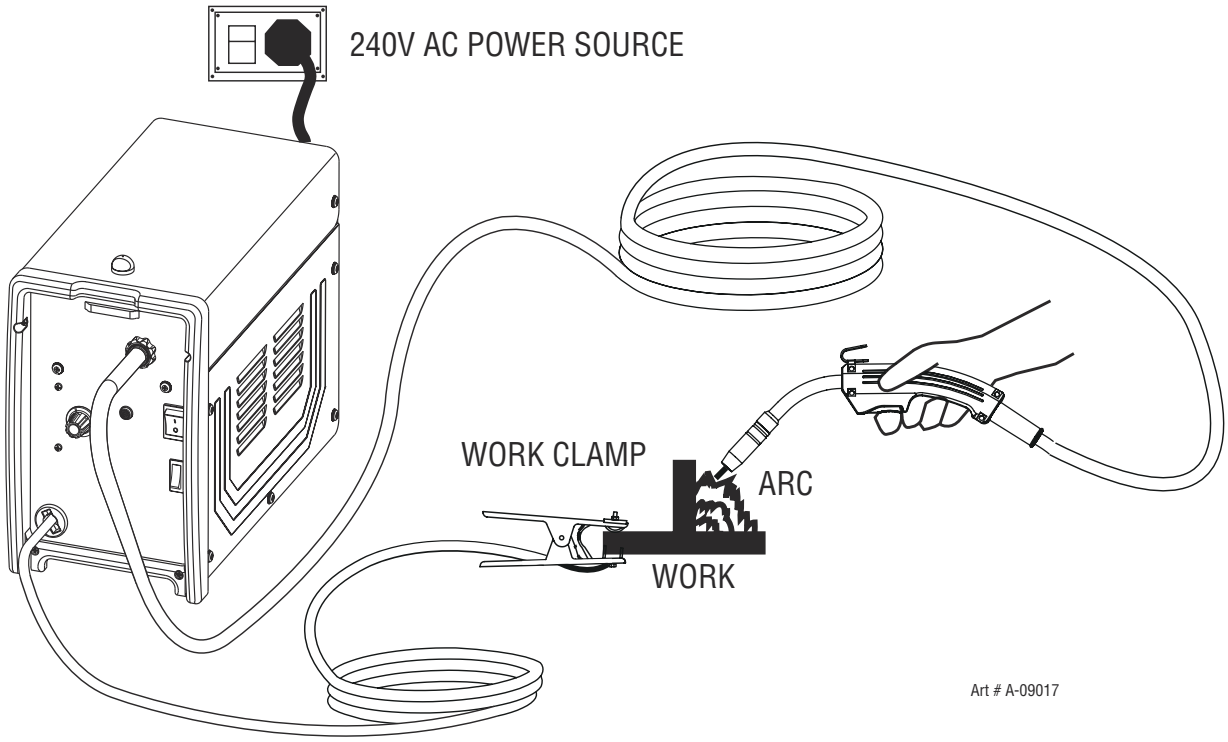


Figure 3-13: Set-up for WeldSkill 100 Mig

3.18 Setup for WeldSkill 135 Mig with Gasless MIG Wire

WARNING

Before connecting the work clamp to the work and inserting the electrode wire in the Mig Torch make sure the Mains power supply is switched off.

Moving Parts can cause injury.

CAUTION

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

NOTE

Refer to the set up guide located on the inside of the wirefeed compartment door.

A. Switch the Control Switch located on the front panel to the OFF position.

B. Place the MIG wire spool onto the spool holder. Refer to Section 3.12 or Section 3.13 depending on the spool diameter being used.

C. Feed Wire through the wire drive mechanism. Refer to Section 3.14 for this procedure.

D. Refer to Connection for FCAW (Gasless MIG Wire) below for Polarity Terminal Connections. Also refer to Section 3.10 for further details.

E. Power source settings are adjusted using the Output Voltage Switch located on the front panel. (Refer to Section 4.02B).

Note that when this switch is in the Off position welding output will NOT be available this must be switched to a position between 1 to 4 depending on the application to enable welding output.

F. As a guide for the Welding Parameter settings for the welding job refer to the Weld Guide located on the inside of the wirefeed compartment door.

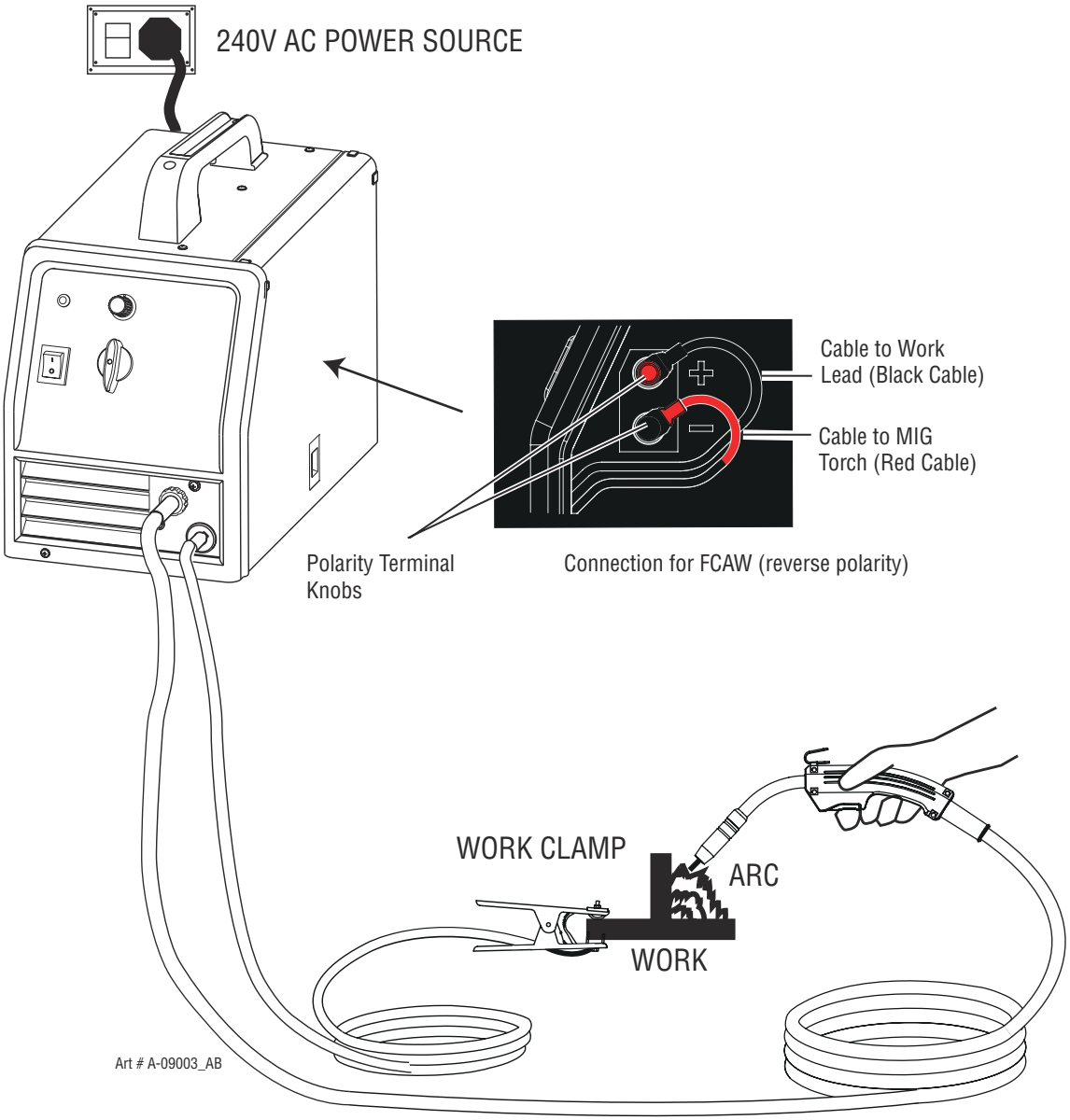


Figure 3-14: Gasless Set-up for WeldSkill 135 MIG

3.19 Setup for WeldSkill 135 MIG with Gas Shielded Mig Wire

WARNING

Before connecting the work clamp to the work and inserting the electrode wire in the Mig Torch 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.

Moving Parts can cause injury.

CAUTION

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

NOTE

Refer to the set up guide located on the inside of the wirefeed compartment door.

A. Switch the Control Switch located on the front panel to the OFF position.

B. Place the MIG wire spool onto the spool holder. Refer to Section 3.12 or Section 3.13 depending on the spool diameter being used.

C. Feed Wire through the wire drive mechanism. Refer to Section 3.14 for this procedure.

D. Refer to Connection for GMAW (Gas Shielded MIG Wire) below for Polarity Terminal Connections. Also refer to Section 3.10 for further details.

E. Power source settings are adjusted using the Output Voltage Switch located on the front panel. (Refer to Section 4.02B). Note that when this switch is in the Off position welding output will NOT be available this must be switched to a position between 1 to 4 depending on the application to enable welding output.

F. As a guide for the Welding Parameter settings for the welding job refer to the Weld Guide located on the inside of the wirefeed compartment door.

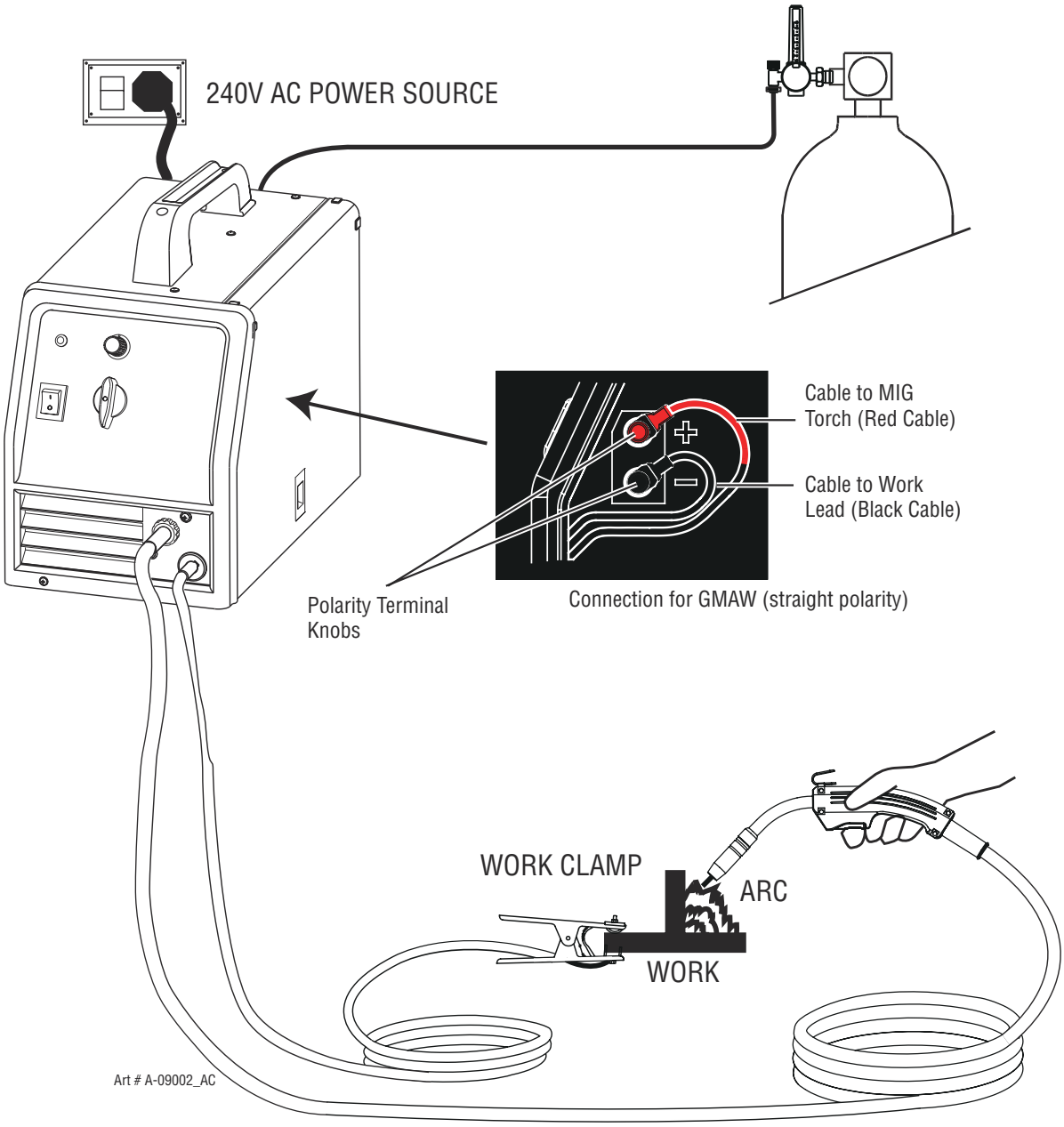


Figure 3-15: Gas Shielded Set-up for WeldSkill 135 Mig

3.20 Setup for WeldSkill 150 Mig with Gasless MIG Wire

WARNING

Before connecting the work clamp to the work and inserting the electrode wire in the Mig Torch make sure the Mains power supply is switched off.

Moving Parts can cause injury.

CAUTION

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

NOTE

Refer to the set up guide located on the inside of the wirefeed compartment door.

A. Switch the Control Switch located on the front panel to the OFF position.

B. Place the MIG wire spool onto the spool holder. Refer to Section 3.12 or Section 3.13 depending on the spool diameter being used.

C. Feed Wire through the wire drive mechanism. Refer to Section 3.14 for this procedure.

D. Refer to Connection for FCAW (Gasless MIG Wire) below for Polarity Terminal Connections. Also refer to Section 3.10 for further details.

E. Power source settings are adjusted using the Output Voltage Switch located on the front panel. (Refer to Section 4.03B). Note that when this switch is in the Off position welding output will NOT be available this must be switched to a position between 1 to 4 depending on the application to enable welding output.

F. As a guide for the Welding Parameter settings for the welding job refer to the Weld Guide located on the inside of the wirefeed compartment door.

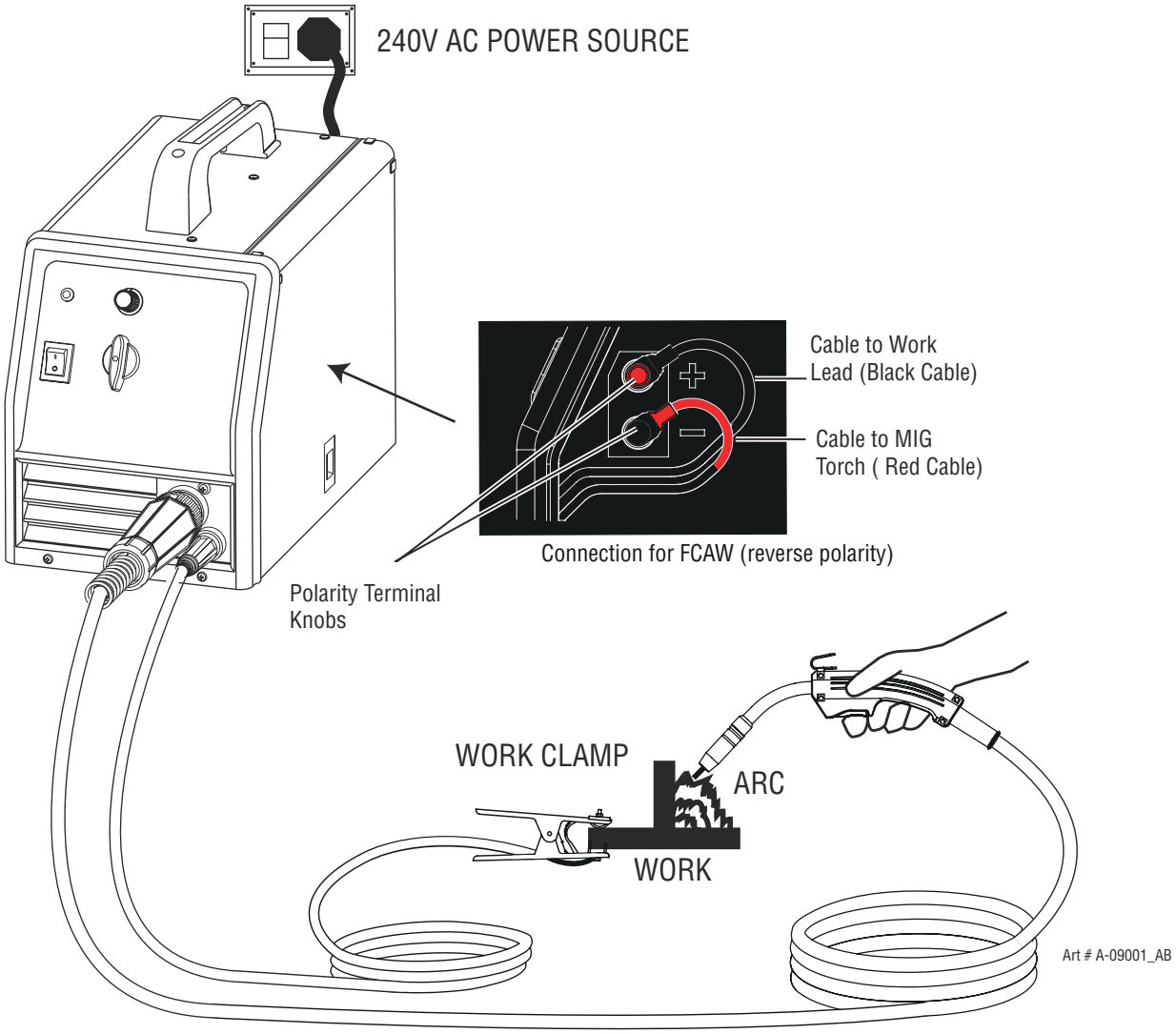


Figure 3-16: Gasless Set-up for WeldSkill 150 Mig

3.21 Setup for WeldSkill 150 Mig with Gas Shielded MIG Wire

WARNING

Before connecting the work clamp to the work and inserting the electrode wire in the Mig Torch 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.

Moving Parts can cause injury.

CAUTION

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

NOTE

Refer to the set up guide located on the inside of the wirefeed compartment door.

A. Switch the Control Switch located on the front panel to the OFF position.

B. Place the MIG wire spool onto the spool holder. Refer to Section 3.12 or Section 3.13 depending on the spool diameter being used.

C. Feed Wire through the wire drive mechanism. Refer to Section 3.14 for this procedure.

D. Refer to Connection for GMAW (Gas Shielded MIG Wire) below for Polarity Terminal Connections. Also refer to Section 3.10 for further details.

E. Power source settings are adjusted using the Output Voltage Switch located on the front panel. (Refer to Section 4.03B). Note that when this switch is in the Off position welding output will NOT be available this must be switched to a position between 1 to 4 depending on the application to enable welding output.

F. As a guide for the Welding Parameter settings for the welding job refer to the Weld Guide located on the inside of the wirefeed compartment door.

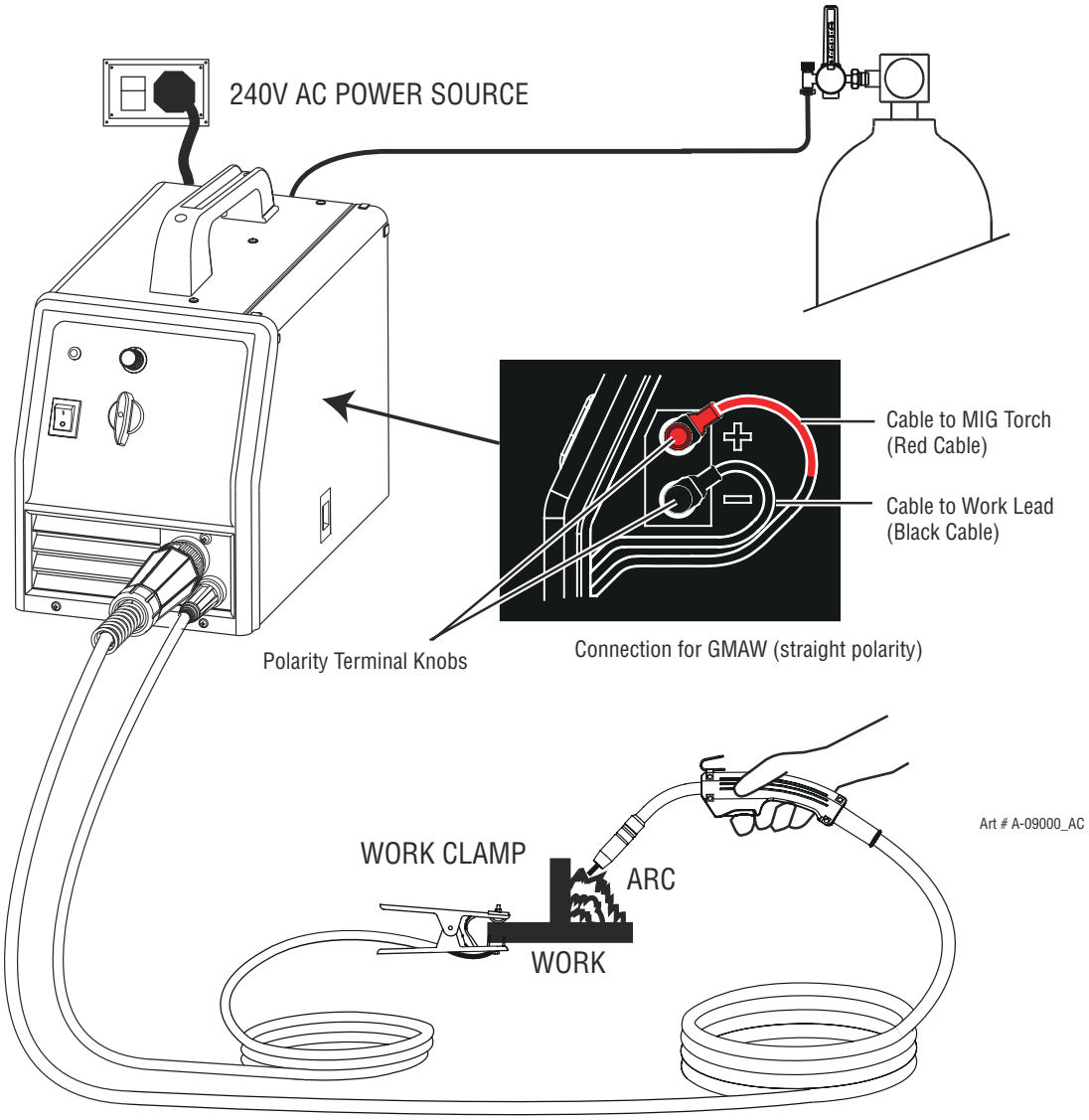


Figure 3-17: Gas Shielded Set-up for WeldSkill 150 Mig

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SECTION 4: OPERATION

4.01 WeldSkill 100 Mig Power Source Controls, Indicators and Features

A. MIG Gun Cable End Port

The MIG Torch cable and MIG Torch switch leads are routed through this opening.

B. Over Heat Indicator

The Power Source is protected by a self resetting thermostat. The Indicator will illuminate and welding current ceases if the duty cycle of the power source has been exceeded. If the Over Heat Indicator Illuminates wait for the Over Heat Indicator to extinguish before resuming welding.

C. Control On/Off Switch with in-built Indicator Light

The Control On/Off Switch Indicator illuminates when the Control On/Off switch is in the On position and the correct mains voltage is present.

D. Output Voltage Control Switch

The Output Voltage Control Switch sets the voltage range of the welding output.

CAUTION

The Output Voltage Switch MUST NOT BE SWITCHED during the welding process.

WARNING

Some internal electrical components are at Mains voltage potential with the Control switch in the OFF position.

E. Work Cable and Clamp Port

The work cable and clamp are routed through this opening.

F. Wirespeed Control

The Wirespeed Control knob controls the welding current via the electrode wire feed rate which determines the speed of the wire feed motor.

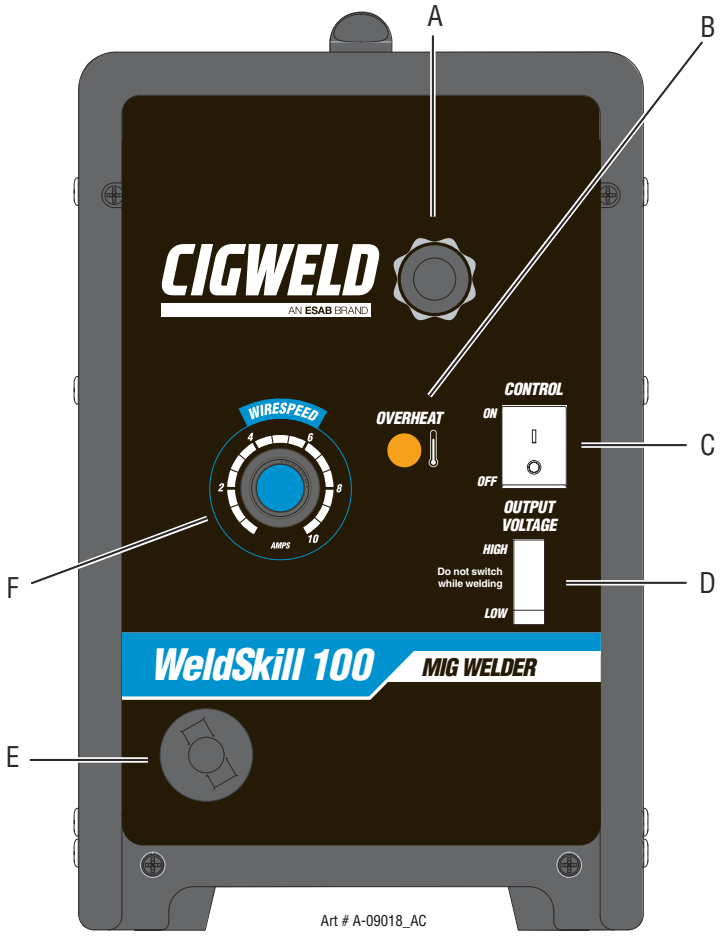


Figure 4-1: Weldskill 100 Mig Front Panel

4.02 WeldSkill 135 Mig Power Source Controls, Indicators and Features

A. Wirespeed Control

The Wirespeed Control knob controls the welding current via the electrode wire feed rate which determines the speed of the wire feed motor.

B. Output Voltage Control Switch

The Output Voltage Control Switch sets the voltage level to the welding terminals as it is rotated in the clockwise direction. There are 4 positions available. The OFF switch position disconnects the power from the controls.

CAUTION

The Output Voltage Switch MUST NOT BE SWITCHED during the welding process.

WARNING

Some internal electrical components are at Mains voltage potential with the Control switch in the OFF position.

C. MIG Torch Cable End Port

The MIG Torch cable and MIG Torch switch leads are routed through this opening.

D. Work Cable and Clamp Port

The work cable and clamp are routed through this opening.

E. Control On/Off Switch with in-built Indicator Light

The Control On/Off Switch Indicator illuminates when the Control On/Off switch is in the On position and the correct mains voltage is present.

F. Over Heat Indicator

The Power Source is protected by a self resetting thermostat. The Indicator will illuminate and welding current ceases if the duty cycle of the power source has been exceeded. If the Over Heat Indicator Illuminates wait for the Over Heat Indicator to extinguish before resuming welding.

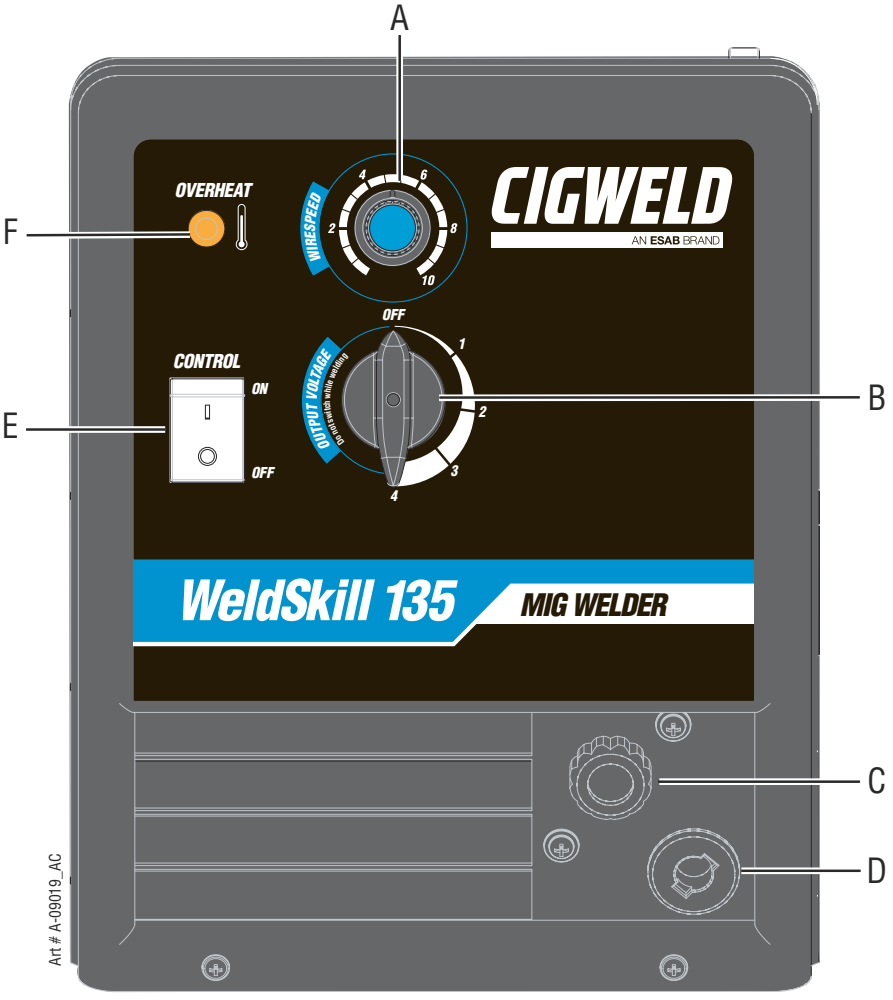


Figure 4-2: Weldskill 135 Mig Front Panel

4.03 WeldSkill 150 Mig Power Source Controls, Indicators and Features

A. Wirespeed Control

The Wirespeed Control knob controls the welding current via the electrode wire feed rate which determines the speed of the wire feed motor.

B. Output Voltage Control Switch

The Output Voltage Control Switch sets the voltage level to the welding terminals as it is rotated in the clockwise direction. There are 4 positions available. The OFF switch position disconnects the power from the controls.

CAUTION

The Output Voltage Switch MUST NOT BE SWITCHED during the welding process.

WARNING

Some internal electrical components are at Mains voltage potential with the Control switch in the OFF position.

C. MIG Torch Connection (Euro)

Fit the MIG Torch to the Power Source by pushing the torch connector into the torch adaptor and screwing the plastic torch nut clockwise to secure the torch to the torch adaptor.

D. Work Cable and Clamp Port Dinse Connector Socket

The work cable and clamp are routed through this opening.

E. Control On/Off Switch with in-built Indicator Light

The Control On/Off Switch Indicator illuminates when the Control On/Off switch is in the On position and the correct mains voltage is present.

F. Over Heat Indicator

The Power Source is protected by a self resetting thermostat. The Indicator will illuminate and welding current ceases if the duty cycle of the power source has been exceeded. If the Over Heat Indicator Illuminates wait for the Over Heat Indicator to extinguish before resuming welding.

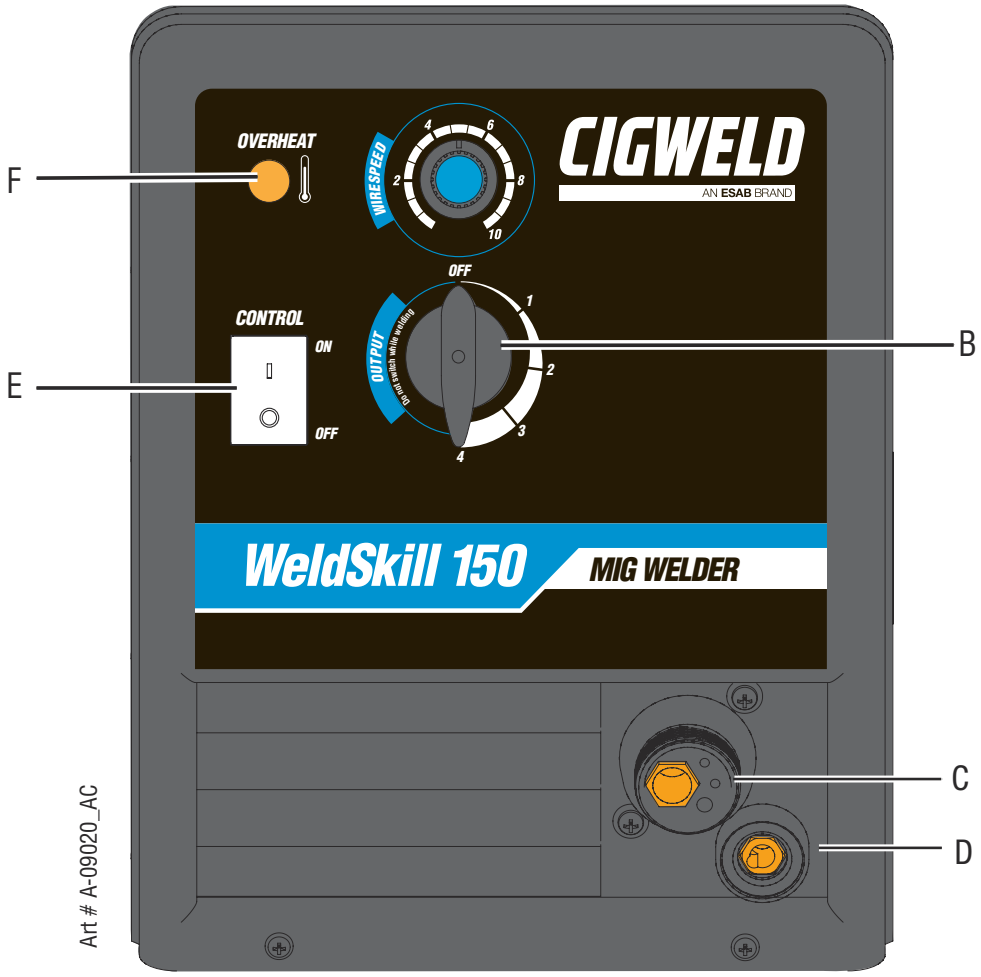


Figure 4-3: Weldskill 150 Mig Front Panel

4.04 Cigweld MIG Wire Selection Chart

Cigweld Welding Wire Selection Chart

Description	Diameter	Pack	Part Number	Application
WeldSkill Gasless Mild Steel Wire	0.8mm	Minispool 0.9kg	WG0908	General purpose all positional wire ideal for the home handyman. Applications include steel gates, trailers and general maintenance. Excellent performance on galvanised steels. Note that a shielding gas is not required.
	0.8mm	Handispool 4.5kg	WG4508	
	0.9mm	Minispool 0.9kg	WG0909	
	0.9mm	Handispool 4.5kg	WG4509	
WeldSkill Solid Mild Steel Mig Wire	0.6mm	Minispool 0.9kg	WS0906	General purpose all positional wire providing excellent results when used with correct shielding gas. Applications include steel gates, trailers and general maintenance.
	0.6mm	Handispool 5kg	WS5006	
	0.8mm	Minispool 0.9kg	WS0908	
	0.8mm	Handispool 5kg	WS5008	
	0.9mm	Minispool 0.9kg	WS0909	
	0.9mm	Handispool 5kg	WS5009	
Autocraft 316LSi Solid Stainless Steel Mig Wire	0.8mm	Minispool 1kg	721285	General purpose all positional stainless steel wire providing excellent results when used with correct shielding gas. Suitable for the general welding of a wide range of stainless steels (300 & 400 series).
	0.9mm	Handispool 5kg	720283	
Autocraft AL5356 Solid Aluminium Mig Wire	1.0 mm	Handispool 2kg	723224	Excellent general purpose Aluminium Mig wire suitable for the welding of a wide range of wrought and cast Aluminium alloys containing Magnesium. Note that a suitable shielding gas is required.

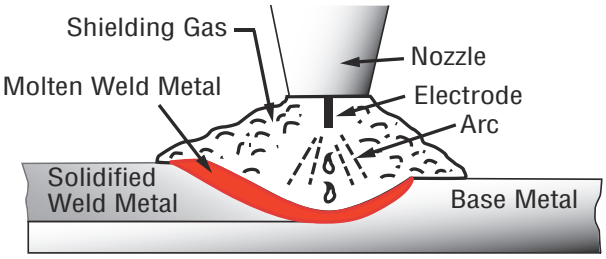
Note Minispool = 100mm diameter, Handispool = 200mm diameter.

Figure 4-4 Cigweld MIG Wire Selection Chart

4.05 Basic Welding Technique

Two different welding processes are covered in this section, with the intention of providing the very basic concepts in using the Mig mode of welding, where a welding gun is hand held, and the electrode (welding wire) is fed into a weld puddle, and the arc is shielded by a gas or gas mixture.

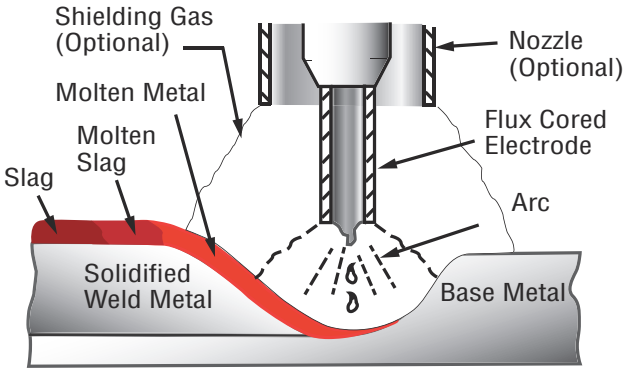
GAS METAL ARC WELDING (GMAW): This process, also known as MIG welding, CO2 welding, Micro Wire Welding, short arc welding, dip transfer welding, wire welding etc., is an electric arc welding process which fuses together the parts to be welded by heating them with an arc between a solid continuous, consumable electrode and the work. Shielding is obtained from an externally supplied gas or gas mixture. The process is normally applied semiautomatically; however the process may be operated automatically and can be machine operated. The process can be used to weld thin and fairly thick steels, and some non-ferrous metals in all positions.



GMAW Process Art # A-8991_AB

Figure 4-5

FLUX CORED ARC WELDING (FCAW): This is an electric arc welding process which fuses together the parts to be welded by heating them with an arc between a continuous flux filled electrode wire and the work. Shielding is obtained through decomposition of the flux within the tubular wire. Additional shielding may or may not be obtained from an externally supplied gas or gas mixture. The process is normally applied semiautomatically; however the process may be applied automatically or by machine. It is commonly used to weld large diameter electrodes in the flat and horizontal position and small electrode diameters in all positions. The process is used to a lesser degree for welding stainless steel and for overlay work.



FCAW Process Art # A-08992_AB

Figure 4-6

Position of MIG Torch

The angle of MIG torch to the weld has an effect on the width of the weld.

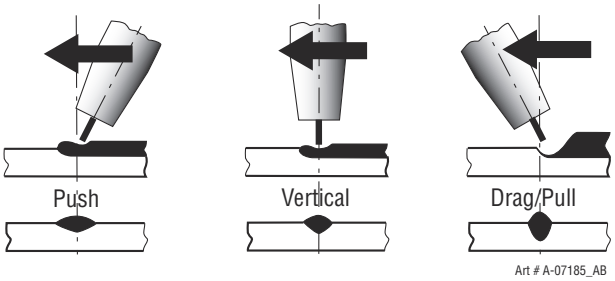


Figure 4-7

The welding gun should be held at an angle to the weld joint. (see Secondary Adjustment Variables below)

Hold the gun so that the welding seam is viewed at all times. Always wear the welding helmet with proper filter lenses and use the proper safety equipment.

CAUTION

Do not pull the welding gun back when the arc is established. This will create excessive wire extension (stick-out) and make a very poor weld.

The electrode wire is not energized until the gun trigger switch is depressed. The wire may therefore be placed on the seam or joint prior to lowering the helmet.

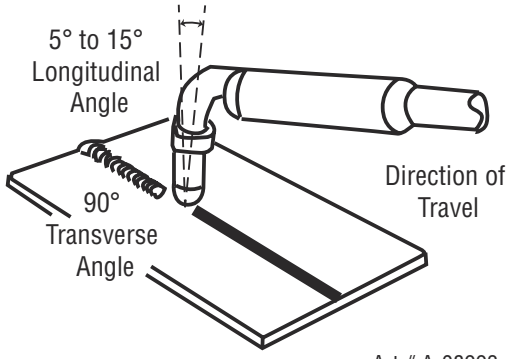


Figure 4-8

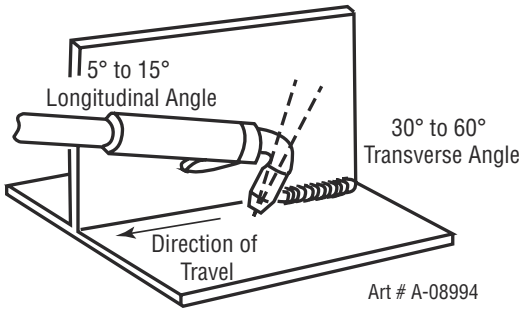
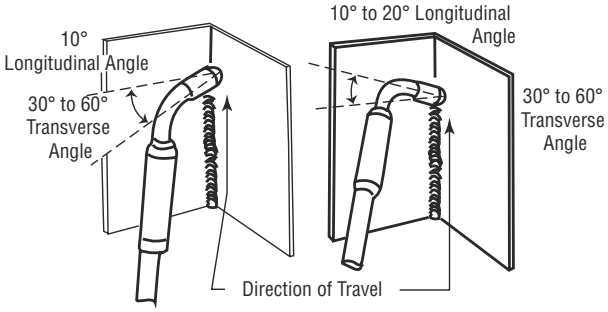


Figure 4-9



Vertical Fillet Welds Art # A-08995

Figure 4-10

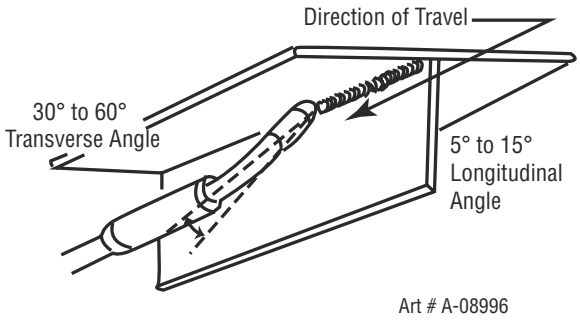


Figure 4-11

Distance from the MIG Torch Nozzle to the Work Piece

The electrode wire stick out from the MIG Torch nozzle should be between 10mm to 20.0mm. This distance may vary depending on the type of joint that is being welded.

Travel Speed

The speed at which the molten pool travels influences the width of the weld and penetration of the welding run.

MIG Welding (GMAW) Varialbes

Most of the welding done by all processes is on carbon steel. The items below describe the welding variables in short-arc welding of 24gauge (0.024", 0.6mm) to ¼" (6.4mm) mild sheet or plate. The applied techniques and end results in the GMAW process are controlled by these variables.

Preselected Variables

Preselected variables depend upon the type of material being welded, the thickness of the material, the welding position, the deposition rate and the mechanical properties. These variables are:

1. Type of electrode wire
2. Size of electrode wire
3. Type of gas (not applicable to self shielding wires FCAW)
4. Gas flow rate (not applicable to self shielding wires FCAW)

Primary Adjustable Variables

These control the process after preselected variables have been found. They control the penetration, bead width, bead height, arc stability, deposition rate and weld soundness. They are:

1. Arc Voltage
2. Welding current (wire feed speed)
3. Travel speed

Secondary Adjustable Variables

These variables cause changes in primary adjustable variables which in turn cause the desired change in the bead formation. They are:

1. Stick-out (distance between the end of the contact tube (tip) and the end of the electrode wire). Maintain at about 10mm stick-out

2. Wire Feed Speed. Increase in wire feed speed increases weld current, Decrease in wire feed speed decreases weld current.

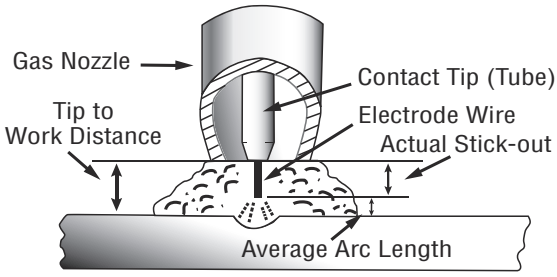


Figure 4-12

3. Nozzle Angle. This refers to the position of the welding gun in relation to the joint. The transverse angle is usually one half the included angle between plates forming the joint. The longitudinal angle is the angle between the centre line of the welding gun and a line perpendicular to the axis of the weld. The longitudinal angle is generally called the Nozzle Angle and can be either trailing (pulling) or leading (pushing). Whether the operator is left handed or right handed has to be considered to realize the effects of each angle in relation to the direction of travel.

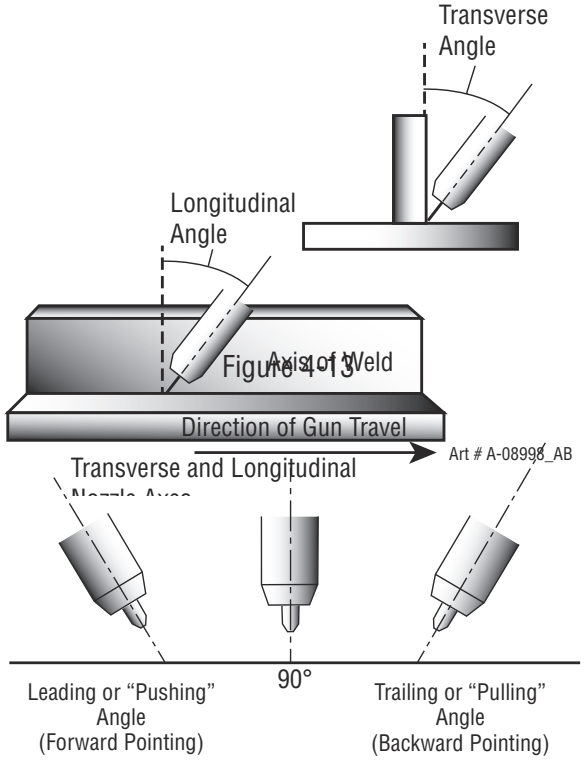


Figure 4-13

Nozzle Angle, Right Handed Operator Art # A-08999_AC

Figure 4-14

Establishing the Arc and Making Weld Beads

Before attempting to weld on a finished piece of work, it is recommended that practice welds be made on a sample metal of the same material as that of the finished piece.

The easiest welding procedure for the beginner to experiment with MIG welding is the flat position. The equipment is capable of flat, vertical and overhead positions.

For practicing MIG welding, secure some pieces of 16 or 18 gauge (0.06" 1.5mm or 0.08" 2.0mm) mild steel plate 6" x 6" (150 x 150mm). Use 0.024" (0.8mm) flux cored gasless wire or a solid wire with shielding gas.

Setting of the Power Source

Power source and Wirefeeder setting requires some practice by the operator, as the welding plant has two control settings that have to balance. These are the Wirespeed control and the welding Voltage Control. The welding current is determined by the Wirespeed control, the current will increase with increased Wirespeed, resulting in a shorter arc. Less wire speed will reduce the current and lengthen the arc. Increasing the welding voltage hardly alters the current level, but lengthens the arc. By decreasing the voltage, a shorter arc is obtained with a little change in current level.

When changing to a different electrode wire diameter, different control settings are required. A thinner electrode wire needs more Wirespeed to achieve the same current level.

A satisfactory weld cannot be obtained if the Wirespeed and Voltage settings are not adjusted to suit the electrode wire diameter and the dimensions of the work piece.

If the Wirespeed is too high for the welding voltage, "stubbing" will occur as the wire dips into the molten pool and does not melt. Welding in these conditions normally produces a poor weld due to lack of fusion. If, however, the welding voltage is too high, large drops will form on the end of the wire, causing spatter. The correct setting of voltage and Wirespeed can be seen in the shape of the weld deposit and heard by a smooth regular arc sound.

Electrode Wire Size Selection

The choice of Electrode wire size and shielding gas used depends on the following

- Thickness of the metal to be welded
- Type of joint
- Capacity of the wire feed unit and Power Source
- The amount of penetration required
- The deposition rate required
- The bead profile desired
- The position of welding
- Cost of the wire

SECTION 5: SERVICE

5.01 Routine Maintenance & Inspection

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. Disconnect the Welding Power Source from the Mains Supply Voltage before disassembling.

Welding equipment should be regularly checked by a qualified electrical tradesperson to ensure that:

- The main earth wire of the electrical installation is intact.
- Power point for the Welding Power Source is effectively earthed and of adequate current rating.
- Plugs and cord extension sockets are correctly wired.
- Flexible cord is of the 3-core tough rubber or plastic sheathed type of adequate rating, correctly connected and in good condition.
- Welding terminals are shrouded to prevent inadvertent contact or short circuit.
- The frame of the Welding Power Source is effectively earthed.
- Welding leads and electrode holder are in good condition.
- The Welding Power Source is clean internally, especially from metal filing, slag, and loose material. If any parts are damaged for any reason, replacement is recommended.

5.02 Cleaning the Welding Power Source

WARNING

Refer to WARNING on page 3-2.

To clean the Welding Power Source, open the enclosure and use a vacuum cleaner to remove any accumulated dirt, metal filings, slag and loose material. Keep the shunt and lead screw surfaces clean as accumulated foreign material may reduce the welders output welding current.

5.03 Cleaning the Feed Rolls

Clean the grooves in the drive rolls frequently. This can be done by using a small wire brush. Also wipe off, or clean the grooves on the upper feed roll. After cleaning, tighten the feed roll retaining knobs.

CAUTION

Do not use compressed air to clean the Welding Power Source. Compressed air can force metal particles to lodge between live electrical parts and earthed metal parts within the Welding Power Source. This may result in arcing between this parts and their eventual failure.

5.04 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.

5.05 Welding Problems

Solving Problems Beyond the Welding Terminals.

The general approach to fix Gas Metal Arc Welding (GMAW) problems is to start at the wire spool then work through to the MIG torch. There are two main areas where problems occur with GMAW, Porosity and Inconsistent wire feed

Solving Problems Beyond the Welding Terminals - Porosity

When there is a gas problem the result is usually porosity within the weld metal. Porosity always stems from some contaminant within the molten weld pool which is in the process of escaping during solidification of the molten metal. Contaminants range from no gas around the welding arc to dirt on the work piece surface. Porosity can be reduced by checking the following points.

	FAULT		CAUSE
1	Gas cylinder contents and flow meter.		Ensure that the gas cylinder is not empty and the flow meter is correctly adjusted to 15 litres per minute.
2	Gas leaks.		Check for gas leaks between the regulator/cylinder connection and in the gas hose to the Power Source.
3	Internal gas hose in the Power Source.		Ensure the hose from the solenoid valve to the torch adaptor has not fractured and that it is connected to the torch adaptor.
4	Welding in a windy environment.		Shield the weld area from the wind or increase the gas flow.
5	Welding dirty, oily, painted, oxidised or greasy plate.		Clean contaminates off the work piece.
6	Distance between the MIG torch nozzle and the work piece.		Keep the distance between the MIG torch nozzle and the work piece to a minimum. Refer to section 2.03
7	Maintain the MIG torch in good working order.	A	Ensure that the gas holes are not blocked and gas is exiting out of the torch nozzle.
		B	Do not restrict gas flow by allowing spatter to build up inside the torch nozzle.
		C	Check that the MIG torch O-rings are not damaged.

Table 5-1

WARNING

Disengage the drive roll when testing for gas flow by ear.

Solving Problems Beyond the Welding Terminals - Inconsistent Wire Feed

Wire feeding problems can be reduced by checking the following points.

	FAULT		CAUSE
1	Wire spool brake is too tight		Feed roller driven by motor in the cabinet will slip.
2	Wire spool brake is too loose		Wire spool can unwind and tangle.
3	Worn or incorrect feed roller size	A	Use a feed roller matched to the size you are welding.
		B	Replace feed roller if worn.
4	Mis-alignment of inlet/outlet guides		Wire will rub against the mis-aligned guides and reduces wire feedability.
5	Liner blocked with swarf	A	Increased amounts of swarf are produced by the wire passing through the feed roller when excessive pressure is applied to the pressure roller adjuster.
		B	Swarf can also be produced by the wire passing through an incorrect feed roller groove shape or size.
		C	Swarf is fed into the conduit liner where it accumulates thus reducing wire feedability.
6	Incorrect or worn contact tip	A	The contact tip transfers the weld current to the electrode wire. If the hole in the contact tip is too large then arcing may occur inside the contact tip resulting in the wire jamming in the contact tip
		B	When using soft wire such as aluminium it may become jammed in the contact tip due to expansion of the wire when heated. A contact tip designed for soft wires should be used.
7	Poor work lead contact to work piece		If the work lead has a poor electrical contact to the work piece then the connection point will heat up and result in a reduction of power at the arc.
8	Bent liner		This will cause friction between the wire and the liner thus reducing wire feedability

Table 5-2

Welding Problems

	FAULT		CAUSE		REMEDY
1	Undercut	A	Welding arc voltage too high.	A	Reduce voltage by reducing the Output Voltage Control Switch positions or turn the Wirespeed control knob anticlockwise.
		B	Incorrect torch angle	B	Adjust angle
		C	Excessive heat input	C	Increase the torch travel speed or reduce welding current by reducing the Output Voltage Control Switch positions and turn the Wirespeed control knob anti-clockwise.
2	Lack of penetration	A	Welding current too low	A	Increase welding current by increasing the Wirespeed control knob clockwise and increasing Output Voltage Control Switch positions.
		B	Joint preparation too narrow or gap too tight	B	Increase joint angle or gap
		C	Shielding gas incorrect	C	Change to a gas which gives higher penetration
3	Lack of fusion		Arc voltage to low		Increase Arc voltage by increasing the Output Voltage Control Switch positions.
4	Excessive spatter	A	Arc voltage too high	A	Lower voltage by reducing the Output Voltage Control Switch positions or turn the Wirespeed control knob anti-clockwise.
		B	Arc voltage too low	B	Raise voltage by increasing the Output Voltage Control Switches or turn the Wirespeed control knob clockwise.
5	Irregular weld shape	A	Incorrect voltage and current settings. Convex, Arc voltage too low Concave, voltage too high	A	Adjust voltage and current by adjusting the Output Voltage Control Switch positions and the Wirespeed control knob.
		B	Wire is wandering	B	Replace contact tip
		C	Incorrect shielding gas	C	Check gas selection
		D	Insufficient or excessive heat input	D	Adjust the Wirespeed control knob or the Output Voltage Control Switch.
6	Arc does not have a crisp sound that short arc exhibits when the wirefeed speed and voltage are adjusted correctly		The MIG torch has been connected to the wrong voltage polarity.		Connect the MIG torch to the positive welding terminal (+) for solid wires and gas shielded flux cored wires. Refer to Section 3.10 Polarity Changeover.
7	Weld cracking	A	Weld beads too small	A	Decrease torch travel speed
		B	Weld penetration narrow and deep	B	Reduce current and voltage and increase the MIG Torch travel speed or select a lower penetration shielding gas.
		C	Excessive weld stresses	C	Increase weld metal strength or revise design
		D	Excessive voltage	D	Decrease voltage by reducing the Output Voltage Control Switch.
		E	Cooling rate too fast	E	Slow the cooling rate by preheating part to be welded or cool slowly.

8	Cold weld puddle	A	Faulty rectifier unit	A	Have an Accredited CIGWELD Service Provider test then replace the faulty component.
		B	Loss of a phase in the Mains supply voltage.	B	Check mains power
		C	Loose welding cable connection.	C	Check all welding cable connections.
		D	Low Mains supply voltage	D	Contact supply authority

Table 5-3

5.06 Power Source Problems

	FAULT		CAUSE		REMEDY
1	Control On/Off Switch Indicator light is ON but welding arc cannot be established.		Power Source Output Voltage Selector Switch is in the Off position (Models 135 Mig and 150 Mig only).		Set the Power Source Output Voltage Control Switch to either position 1, 2, 3 or 4 as desired (Models 135 Mig and 150 Mig only).
2	Mains supply voltage is ON. Control On/ Off Switch Indicator light is not lit and welding arc cannot be established.		Broken connection in primary circuit.		Have an Accredited CIGWELD Service Provider check primary circuit.
3	Control On/Off Switch indicator light is not lit but welding arc can be established.		Faulty Control On/Off Indicator light.		Have an Accredited CIGWELD Service Provider replace the Control On/Off Switch.
4	Mains supply voltage is ON and the Control Switch Indicator light is lit but when the torch trigger switch is depressed nothing happens.	A	Torch trigger switch leads are disconnected or broken.	A	Re connect or repair Torch trigger switch leads
		B	Internal Fuse is blown	B	Have an Accredited CIGWELD Service Provider investigate the fault.
		C	Printed Circuit Board Faulty.	C	Have an Accredited CIGWELD Service Provider investigate the fault.
5	Mains supply voltage is ON, no wire feed but gas flows from the MIG Torch (135 and 150 Mig) when the torch trigger switch is depressed.	A	Electrode wire stuck in conduit liner or contact tip (burn-back jam).	A	Check for clogged / kinked MIG Torch conduit liner or worn contract tip. Replace faulty components.
		B	Internal Fuse is blown	B	Have an Accredited CIGWELD Service Provider investigate the fault.
		C	Printed Circuit Board Faulty.	C	Have an Accredited CIGWELD Service Provider investigate the fault.
6	Wire feeds 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.

7	Jerky wire feed	A	Worn or dirty contact tip	A	Replace
		B	Worn feed roll.	B	Replace
		C	Excessive back tension from wire reel hub.	C	Reduce brake tension on spool hub
		D	Worn, kinked or dirty conduit liner	D	Clean or replace conduit liner
8	No gas flow	A	Gas hose is cut.	A	Replace or repair
		B	Gas passage contains impurities.	B	Disconnect gas hose from the rear of Power Source or wirefeeder then raise gas pressure and blow out impurities.
		C	Gas regulator turned off.	C	Turn on.
		D	Empty Cylinder	D	Replace cylinder.
		E	Gas Solenoid Valve or Printed Circuit Board Faulty.	E	Have an Accredited CIGWELD Service Provider investigate the fault.
9	Gas flow continues after the torch trigger switch has been released.		Gas Solenoid Valve has jammed open due to impurities in the gas or the gas line (150 Mig only).		Have an Accredited CIGWELD Service Agent repair or replace Gas Solenoid Valve.
10	Wire does not feed when torch trigger depressed	A	Faulty trigger switch / lead	A	Repair or replace Torch / trigger lead
		B	Internal Fuse is blown	B	Have an Accredited CIGWELD Service Provider investigate the fault.
		C	Printed Circuit Board Faulty	C	Have an Accredited CIGWELD Service Provider investigate the fault.
11	Wire continues to feed when torch trigger released	A	Torch trigger leads shorted	A	Repair or replace Torch / trigger lead
		B	Printed Circuit Board Faulty	B	Have an Accredited CIGWELD Service Provider investigate the fault.
12	OVERHEAT Indicator is illuminated		Power Source Over Heat Protection circuit has operated		Cease welding and leave the power source switched ON and allow it to cool. Note that Over Temp indicator must be extinguished prior to commencement of welding.

Table 5-4

5.07 Key Spare Parts

CIGWELD PART NUMBER	DESCRIPTION
W4012900	Feed Roll 0.6/0.8mm, 100/135/150 Mig
W4012901	Feed Roll 0.8/1.0mm, 100/135/150 Mig
W4012902	Feed Roll 1.0/1.2mm, 100/135/150 Mig
W4013000	Mig Torch, 100/135 Mig
W4013100	Mig Torch, 150 Mig
W7004600	PCB Assembly, 100/135/150 Mig
W7004601	Wire Drive Assembly, 100/135/150 Mig
W7004602	Rotary Output Voltage Switch, 135/150 Mig
W7004603	Fan Assembly, 100/135/150 Mig
W7004604	Gas Solenoid Valve, 150 Mig
W7004605	Rectifier Assembly, 130/150 Mig
7977159	Dinse Panel Socket 25mm 150 Mig
201030	CutSkill Preset Argon Regulator/Flowmeter Vertical Inlet
201031	CutSkill Preset Argon Regulator/Flowmeter Side Inlet
210254	WeldSkill Argon Regulator/Flowmeter 2 Gauge

Table 5-5

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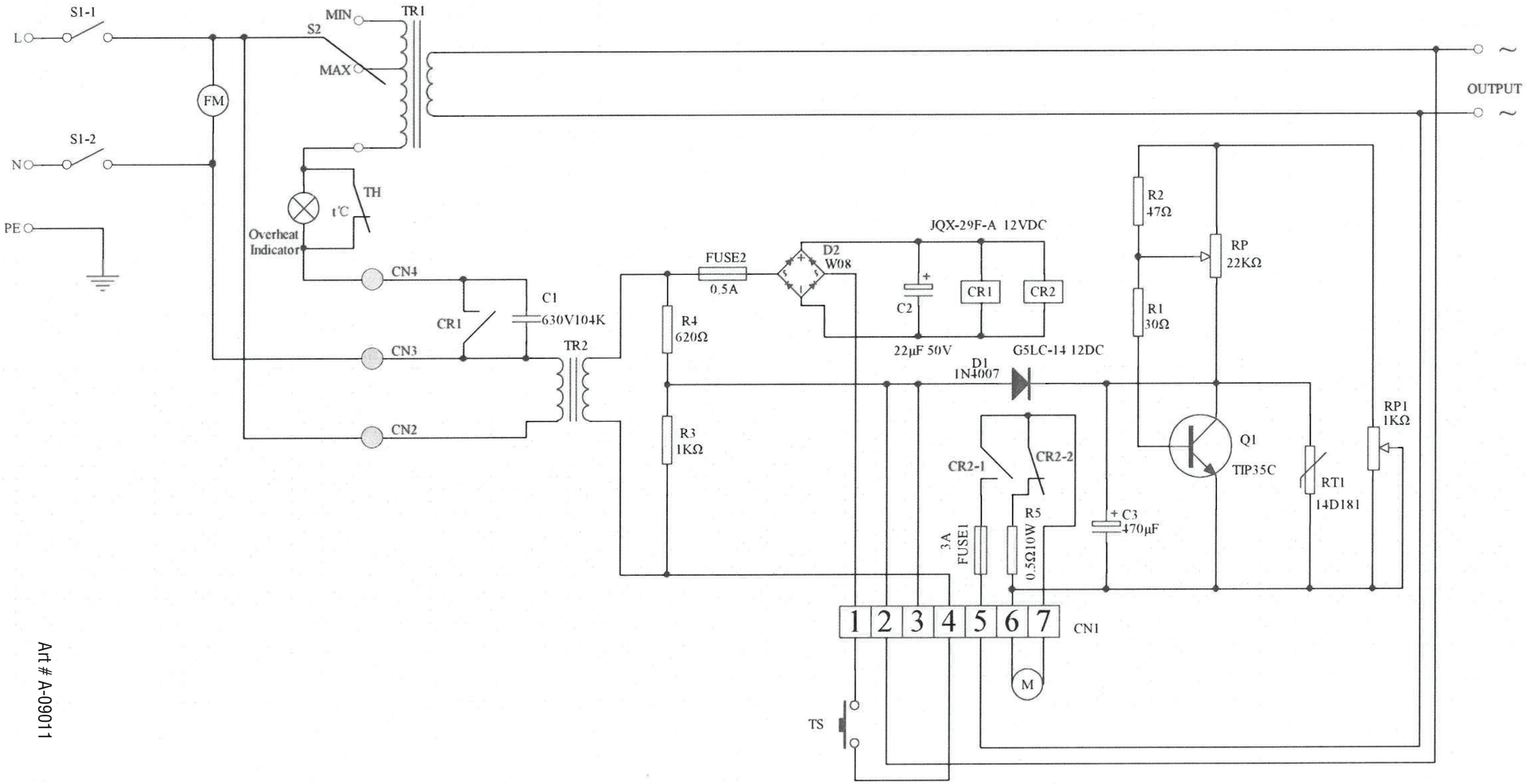
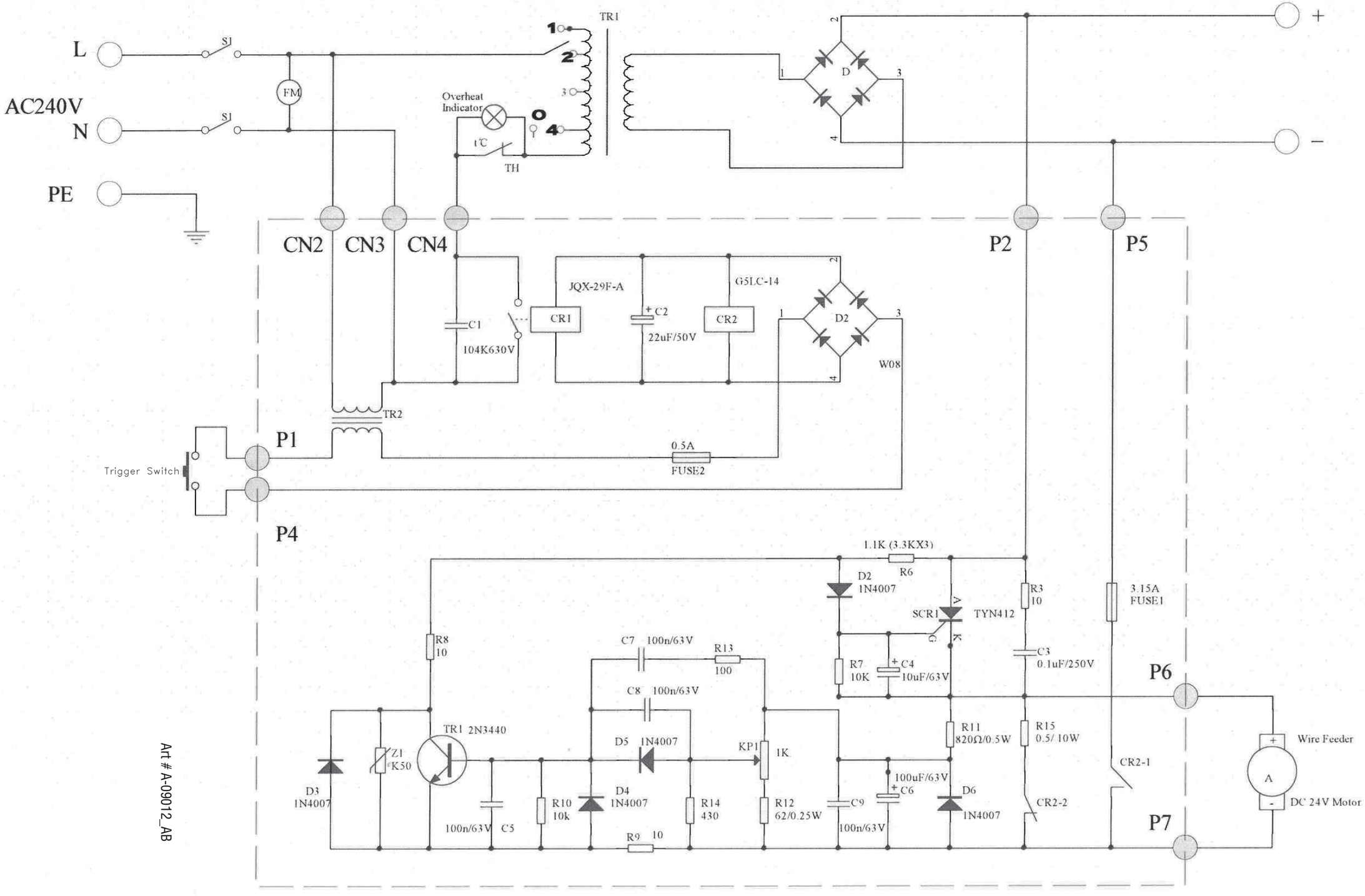
APPENDIX 1: 100 MIG CIRCUIT DIAGRAM



WeldSkill 100 MIG Circuit Diagram

Art # A-09011

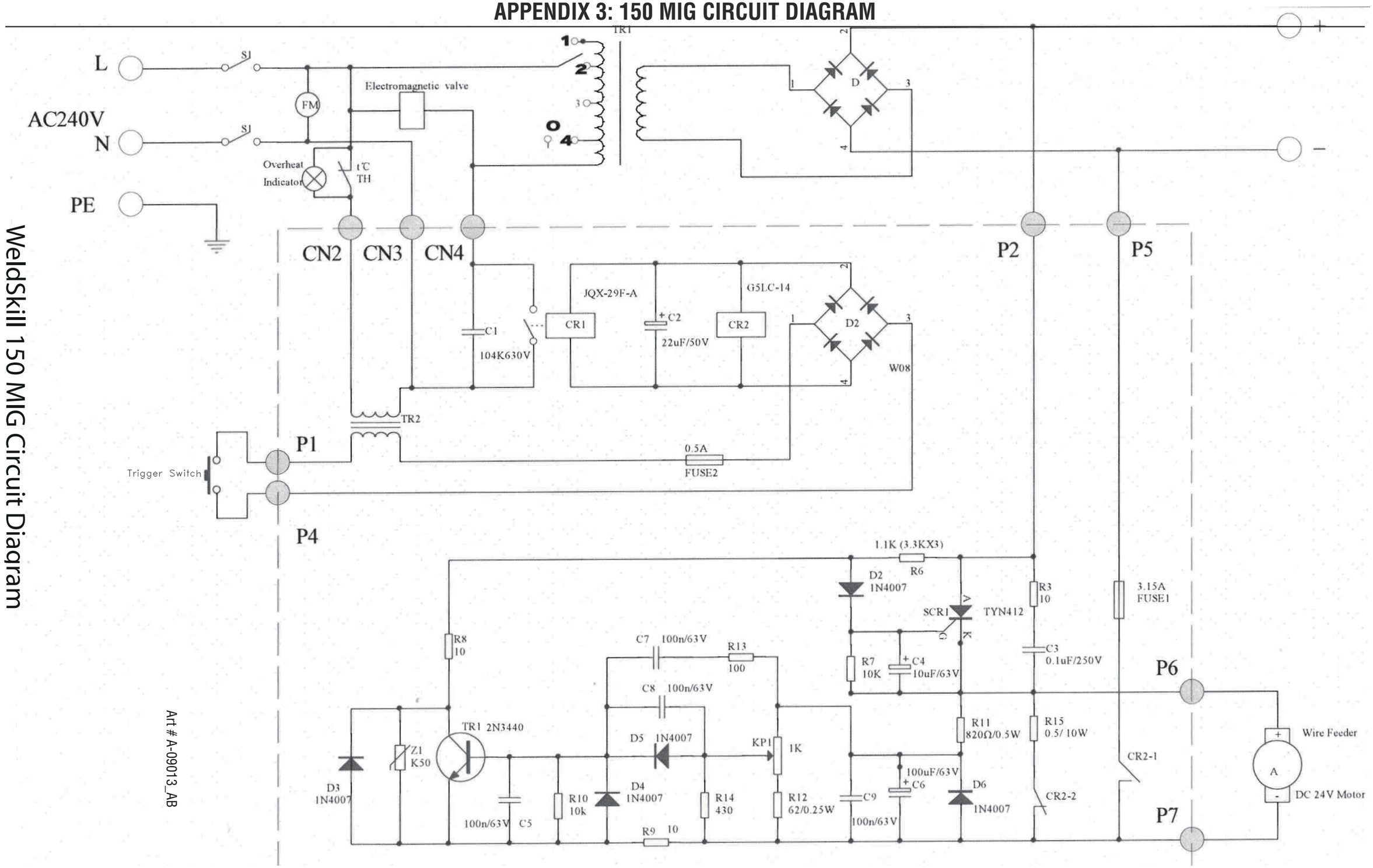
APPENDIX 2: 135 MIG CIRCUIT DIAGRAM



Art # A-09012_AB

WeldSkill 135 MIG Circuit Diagram

APPENDIX 3: 150 MIG CIRCUIT DIAGRAM



WeldSkill 150 MIG Circuit Diagram

Art # A-09013_AB

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CIGWELD - LIMITED WARRANTY TERMS

LIMITED WARRANTY: CIGWELD Pty Ltd, An ESAB Brand, 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.

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. CIGWELD reserves the right to request documented evidence of date of purchase. CIGWELD or our Accredited Distributor must be notified 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

This warranty is given.

Cigweld Pty Ltd

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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.

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

WARRANTY SCHEDULE – WELDSKILL 100, 135, 150 MIG

WARRANTY	WARRANTY PERIOD – (Parts and Labour)
WeldSkill 100 Mig, WeldSkill 135 Mig and WeldSkill 150 Mig Power Source	1 Year
ACCESSORIES	**WARRANTY PERIOD**
Mig Torch and Work Lead	3 Months
Mig Torch Consumable Items	NIL
Gas regulator/flowmeter (excluding seat assembly, pressure gauges, elastomer seals and "O" rings) (supplied with 150 MIG only)	3 Years
Regulator seat assemblies and pressure gauges (supplied with 150 MIG only)	12 Months
Elastomer seals and "O" rings used in the equipment (supplied with 150 MIG only)	3 Months

CIGWELD Limited Warranty does not apply to;

- Obsolete goods sold at auction, second-hand goods and prototype goods.
- Consumable Parts for MIG, TIG, Plasma welding, Plasma cutting and Oxy fuel torches, O-rings, fuses, filters or other parts that fail due to normal wear.

Note:

* No employee, agent, or representative of CIGWELD is authorized to change this warranty in any way or grant any other warranty, and CIGWELD shall not be bound by any such attempt. Correction of non-conformities, in the manner and time provided herein, constitutes fulfilment of CIGWELD's obligations to purchaser with respect to the product.

* This warranty is void, and seller bears no liability hereunder, if purchaser used replacement parts or accessories which, in CIGWELD's sole judgment, impaired the safety or performance of any CIGWELD product and if the unit is altered or serviced by an unauthorised CIGWELD Service Provider. Purchaser's rights under this warranty are void if the product is sold to purchaser by unauthorized persons.

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