

Lincoln Electric®

Australasia

REDI-MIG® 210c, 250c, 250s, 325c & 325s Operator's Manual



This manual applies to

Part No.	Code	Description	Volts
K32048-1	70169	REDI-MIG® 210c	240
K32049-1	70170	REDI-MIG® 250c	240
K32049-2	70171	REDI-MIG® 250s	240
K32050-1	70172	REDI-MIG® 325c	415
K32050-2	70173	REDI-MIG® 325s	415

Safety Depends on You

Lincoln Electric welders are designed and built with safety in mind. However, your overall safety can be increased by proper installation and thoughtful operation on your part. Read and observe the general safety precautions on page 2 and follow specific installation and operating instructions included in this manual.

Most importantly, think before you act and be careful.

Warranty Registration

www.mylincolnwarranty.com.au

Complete your **warranty registration** online for your chance to win a Lincoln Electric welding helmet valued at \$299 – one winner drawn each month – and the chance to win a Hot Lap with V8 Supercar driver Jason Bright*.

*Competition terms and conditions can be viewed at: www.mylincolnwarranty.com.au

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PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. READ AND UNDERSTAND BOTH THE SPECIFIC INFORMATION GIVEN IN THE OPERATING MANUAL FOR THE WELDER AND/OR OTHER EQUIPMENT TO BE USED AS WELL AS THE FOLLOWING GENERAL INFORMATION.

ARC WELDING SAFETY PRECAUTIONS



ELECTRIC SHOCK can kill

1. a. The electrode and work (or ground) circuits are electrically "hot" when the welder is on. Do not touch these "hot" parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- b. In semi-automatic and automatic wire welding, the electrode, electrode reel, welding head and nozzle or semi-automatic welding gun are also electrically "hot".
- c. Insulate yourself from work and ground using dry insulation. When welding in damp locations, on metal framework such as floors, gratings or scaffolds, and when in positions such as sitting or Lying, make certain the insulation is large enough to cover your full area of physical contact with work and ground.
- d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- e. Ground the work or metal to be welded to a good electrical (earth) ground.
- f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- g. Never dip the electrode holder in water for cooling.
- h. Never simultaneously touch electrically "hot" parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- i. When working above floor level, protect yourself from a fall should you get a shock.
- j. Also see items 4c and 6.



FUMES AND GASES can be dangerous

2. a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. When welding on galvanised, lead or cadmium plated steel and other metals which produce toxic fumes, even greater care must be taken.
- b. Do not weld in locations near chlorinated hydrocarbon vapours coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapours to form phosgene, a highly toxic gas, and other irritating products.
- c. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to ensure breathing air is safe.
- d. Read and understand the manufacturer's instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer's safety practices.
- e. Also see Item 7b.



ARC RAYS can burn

3. a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to AS 1674.2-1990 standards.
- b. Use suitable clothing made from durable flame resistant material to protect your skin and that of your helpers from the arc rays.
- c. Protect other nearby personnel with suitable non flammable screening and/or warn them not to watch the arc or expose themselves to the arc rays or to hot spatter or metal.



WELDING SPARKS can cause fire or explosion

4. a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Have a fire extinguisher readily available.
- b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to AS1674 Parts 1 & 2 "Safety in Welding and Allied Processes", WTIA Technical Note 7 "Health and Safety in Welding" and the operating information for the equipment being used.
- c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapours from substances inside. These can cause an explosion even though the vessel has been "cleaned". For information refer to AS 1674 .1 & .2 (latest editions).
- e. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- g. Connect the work cable to the work as close to the welding area as possible. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- h. Also see Item 7c.



CYLINDER may explode if damaged

5. a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators, designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- b. Always keep cylinders in an upright position and securely chained to an undercarriage or fixed support.
- c. Cylinders should be located :
 - Away from areas where they may be struck or subjected to physical damage.
 - A safe distance from arc welding or cutting operations and any other source of heat, sparks or flame.
- d. Never allow the electrode, electrode holder, or any other electrically "hot" parts to touch a cylinder.
- e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- f. Valve protection caps should always be in place and hand-tight except when the cylinder is in use or connected for use.
- g. Read and follow the instructions on compressed gas cylinders and associated equipment, and AS 2030 Parts 1 & 2.



FOR ELECTRICALLY powered equipment

6. a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- b. Install equipment in accordance with the SAA Wiring Rules, all local codes and the manufacturer's recommendations.
- c. Earth the equipment in accordance with the SAA Wiring Rules and the manufacturer's recommendations.



FOR ENGINE powered equipment

7. a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.



- b. Operate engines in open, well ventilated areas or vent the engine exhaust fumes outdoors.



- c. Do not add fuel near an open flame, welding arc or when the engine is running. Stop the engine and allow it to cool before refuelling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.



- d. Keep all equipment, safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.
- e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.
- f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.
- g. To prevent accidentally starting petrol engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.



- h. To avoid scalding do not remove the radiator pressure cap when the engine is hot.

HAVE ALL INSTALLATIONS, OPERATION, MAINTENANCE AND REPAIR WORK PERFORMED BY QUALIFIED PEOPLE

For more detailed information it is strongly recommended that you purchase a copy of "Safety in Welding and Cutting - ANSI Standard Z 49.1" and WTIA Technical Note 7. All WTIA publications and ANSI/AWS Standards are available from the Welding Technology Institute of Australia, P.O. Box 6165, Silverwater NSW 2128. For copies of various Australian Standards contact your local S.A.A. office.

For more detailed information it is strongly recommended that you review copies of "Safety in Welding and Allied processes - AS 1674.1 & .2" and WTIA Technical Note 7 – TN07. Australian Standards are available from SAI Global – www.saiglobal.com and WTIA publications are available from the Welding Technology Institute of Australia – www.wtia.com.au.

HOW TO ORDER REPLACEMENT PARTS

To ensure that you receive the correct replacement part the following procedure should be followed:

1. Quote Serial Number and Code Number.
2. Quote the Description, Item Number and Parts List Number of the desired part. When ordering parts for items carrying brand names of other companies, such as fan motors, drive shafts, etc., be sure to include the other company's name and part number and other relevant information.
3. Should the primary cord be damaged, a special cord is required, and is available from Lincoln Electric.
4. Parts should be ordered from Lincoln, its offices or the nearest Authorised Field Service Shop. (The "Lincoln Service Directory" listing these shops geographically is available on request.)

Note: "Hardware" in the Lincoln Parts Lists are not Lincoln stock items but can be obtained via the Field Service Shop network.

Component parts of assemblies such as stator coils or armature coils, etc., which require electrical testing or locating fixtures are not considered replaceable items. This is to ensure that the customer receives parts which will keep the welder in the best operating condition.

BUY ONLY GENUINE REPAIR PARTS

WELDING, EMF & PACEMAKERS

All welders should follow safe practices that minimise their exposure to electric and magnetic fields (EMF).

For welders wearing implanted pacemakers, safe welding practices are particularly important and additional procedures should be followed by those who have decided to continue to weld. (Hopefully in keeping with a doctor's advice).

The following procedures will not eliminate exposure to EMF or the possibility of arc welding having an effect on a pacemaker, however if followed, they will significantly reduce exposure to electric and magnetic fields. Electric and magnetic fields are created any time electric current flows through a conductor, however it is not clear whether such exposure affects one's health.

Some researchers have reported that exposure to EMF may cause leukemia or other illnesses. These claims originally arose in relation to high voltage electric power lines and are very much in dispute in the medical and scientific arena, however the best advice is to minimise your exposure to EMF to protect your health should doctors eventually decide there is a risk.

There are four fundamental facts about EMF:

- With direct current (DC), the field strength is relatively constant and does not change.
- With alternating current (AC), the field strength constantly changes.
- The greater the current flow, i.e. the higher the amps, the stronger the field created by the current
- The closer the conductor or electrical device is to the body, the greater the exposure to the field.

Minimising exposure

All welders should use the following procedures to minimise EMF exposure.

- Route electrode or gun and work cables together. Secure them with tape if possible.
- Never coil the electrode lead around your body.
- Do not place your body between the electrode and work cables. If your electrode cable is on your right side the work cable should also be on your right side.
- Connect the work cable to the work piece as close as possible to the area being welded. (This is also a good practice to eliminate a common problem on welding - a poor work connection.
- Do not work next to the welding power source.

Welders with pacemakers

There is no question that the fields in arc welding can interfere with a pacemaker's function. Generally the interference does not permanently damage the pacemaker. Once the wearer leaves the arc welding environment or stops welding, the pacemaker returns to normal functioning. The welding arc has little or no effect on the operation of some pacemakers, especially designs that are bi-polar or designed to filter out such interference.

For a welder or anyone working around electrical equipment the selection of a pacemaker is very important. Get a doctor's advice about which pacemaker is the least sensitive to interference from welding while still being medically suitable.

In addition to the normal safety precautions, the following additional procedures should be adopted by welders with pacemakers.

- Use gas welding when the application is suitable.
- Use the lowest current setting appropriate for the application. Do not exceed 400 amps. Low current (75-200 amps) direct current (DC) welding should be used if arc welding is necessary. Do not TIG weld with high frequency.
- Do not use repeated, short welds. Wait about ten seconds between stopping one weld and starting the next. When having difficulty starting an electrode, do not re-strike the rod repeatedly.
- If you feel light headed, dizzy or faint, immediately stop welding. Lay the electrode holder down so that it does not contact the work and move away from any welding being performed. Arrange your work in advance so that, if you become dizzy and drop the electrode holder, the electrode holder will not fall on your body or strike the work.
- Do not work on a ladder or other elevated position or in a cramped, confined place.
- Do not work alone. Work only in the presence of an individual who understands these precautions and the possible effect welding may have on your pacemaker.
- Do not work near spot welding equipment.
- If you have a pacemaker and wish to continue arc welding, discuss this and any other questions you may have with your physician and follow his or her advice. The doctor may wish to contact the pacemaker manufacturer for a recommendation. As mentioned before, the design of the pacemaker significantly affects the degree to which it is subject to interference from a welding circuit. Do not rely on the fact that you know another welder with a pacemaker who has welded for years without experiencing a problem. That welder and his or her pacemaker may be quite different from you and your pacemaker.

INSTRUCTIONS FOR ELECTROMAGNETIC COMPATIBILITY



WARNING

This welding machine must be used by trained operators only. Read this manual carefully before attempting to use the welding machine.

Conformance

Products displaying the C-Tick mark are in conformity with Australian/New Zealand requirements for Electromagnetic Compatibility (EMC). They are:

- manufactured in conformity with Australian/New Zealand Standard (Emission):- AS/NZS 3652 'Electromagnetic Compatibility - Arc Welding Equipment' (Identical to and reproduced from British Standard EN 50199)
- for using with other Lincoln Electric/LiquidArc equipment.
- designed for industrial and professional use.

Introduction

All electrical equipment generates small amounts of electromagnetic emission. Electrical emission may be transmitted through power lines or radiated through space, similar to a radio transmitter. When emissions are received by other equipment, electrical interference may result. Electrical emissions may affect many kinds of electrical equipment: other nearby welding equipment, radio and TV transmitters and receivers, numerical controlled machines, telephone systems, computers, etc. Be aware that interference may result and extra precautions may be required when a welding power source is used in a domestic establishment.

Installation and Use

The purchaser/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 purchaser/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 (grounding) the welding circuit (see note below). In other cases it could involve constructing an electromagnetic screen enclosing the power source and the work complete with associated input filters. In all cases electromagnetic disturbances must be reduced to the point where they are no longer troublesome.

Note: The welding circuit may or may not be earthed for safety reasons according to national codes. Changing the earthing arrangements should only be authorised by a person who is competent to assess whether the changes increase the risk of injury, eg. by allowing parallel welding current return paths which may damage the earth circuits of other equipment.

Assessment of Area

Before installing welding equipment the purchaser/user shall make an assessment of potential problems in the surrounding area.

The following shall be taken into account:

- a. Other supply cables, control cables, signalling and telephone cables above, below and adjacent to the welding equipment;
- b. Radio and television transmitters and receivers;
- c. Computer and other control equipment;
- d. Safety critical safety equipment, eg. guarding of industrial equipment;
- e. The health of people around, eg. the use of pacemakers and hearing aids;;
- f. Equipment used for calibration or measurement;
- g. The immunity of other equipment in the environment. The

purchaser/user shall ensure that other equipment being used in the environment is compatible. This may require additional protection measures;

- h. The time of the day that welding or other activities are to be carried out.

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.

Methods of Reducing Emissions

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 the mains supply. Consideration should be given to shielding the supply cable of permanently installed welding equipment in metallic conduit or equivalent. Shielding should be electrically continuous throughout its length. The shielding should be connected to the welding power source so that good electrical contact is maintained between the conduit and the welding power source enclosure.

Maintenance of the 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 adjustment covered in the manufacturer's instructions. In particular, the spark gaps of arc initiation and stabilising devices should be adjusted and maintained according to the manufacturer's recommendations.

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.

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 these metallic components and the electrode at the same time. The operator should be insulated from all such bonded metallic components.

Earthing of the workpiece

Where the workpiece is not bonded to earth for electrical safety, nor connected to earth because of its size and position, eg. 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 work pieces 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.

Screening and Shielding

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

* Portions of the preceding text are contained in AS/NZS3652: 'Electromagnetic Compatibility - Arc Welding Equipment'.

Thank You

for selecting a **QUALITY** product by Lincoln Electric. We want you to take pride in operating this Lincoln Electric Company product - as much pride as we have in bringing this product to you!

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Model Name & Number _____

Code & Serial Number _____

Date of Purchase _____

Whenever you request replacement parts or information on this equipment, always supply the information you have recorded above.

Read this Operator's Manual completely before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the Safety Instructions we have provided for your protection. The level of seriousness to be applied to each is explained below:



WARNING

This statement appears where the information must be followed exactly to avoid serious personal injury or loss of life.



CAUTION

This statement appears where the information must be followed to avoid minor personal injury or damage to this equipment.

PRODUCT DESCRIPTION

The REDI-MIG® family is the latest development in step controlled MIG welding machines designed and built by Lincoln Electric Australia. Incorporating the proven Diamond Core Technology™ as used in other Lincoln Electric machines such as the Vantage® range of engine drives, Invertec® V350pro, and Power Wave® power sources, these machines deliver a wider voltage “sweet spot” giving the operator a larger operating envelop. This makes tuning in the right welding parameters a breeze, even for less skilled operators.

Lincoln Electric’s new REDI-MIG® family comprises of five models in both compact and separate wire feeder. The REDI-MIG® 210c, 250c and 250s are for 240 volt supply and the REDI-MIG® 325c and 325s are for 415 volt supply. Excellent arc characteristics are provided for gas shielded and self shielded welding within the respective machine’s current ranges.

Specifications	210C	250C	250S	325C	325S	4S
Part No.	K32048-1	K32049-1	K32049-2	K32050-1	K32050-2	K32051-1
Maximum Open Circuit Voltage	35V	38V	38V	45V	45V	
Output Current Range	25 to 220A	25A to 250A	25A to 250A	25A to 400A	25A to 400A	
Duty Cycle	170A, 22V @ 30% 140A, 21V@60% 120A, 20V@100%	250A, 26.5V@30% 180A, 23V@60% 140A, 21V@100%	250A, 26.5V@30% 180A, 23V@60% 140A, 21V@100%	325A, 30V@30% 240A, 26V@60% 190A, 23.5V@100%	325A, 30V@30% 240A, 26V@60% 190A, 23.5V@100%	
Rated Input AS60974.1	240V 1 phase 50/60Hz 15 amp	240V 1 phase 50/60Hz 25 amp	240V 1 phase 50/60Hz 25 amp	415V 3 phase 50/60Hz 13.5amp	415V 3 phase 50/60Hz 13.5 amp	42V AC 5 amp
Wire Speed Range	1-20 m/min	1-20 m/min	1-20 m/min	1-20 m/min	1-20 m/min	1-20 m/min
H x W x L (mm) Over handle	880 x 355 x 810	880 x 355 x 810	880 x 355 x 810	880 x 355 x 810	880 x 355 x 810	510 x 260 x 440
Operating Temperature	-20°C to 40°C	-20°C to 40°C	-20°C to 40°C	-20°C to 40°C	-20°C to 40°C	-20°C to 40°C
IP Rating	IP23	IP23	IP23	IP23	IP23	IP23
Weight (complete with u/c)	82 kg	91 kg	90 kg*	104 kg	103 kg*	24 kg

* Weights listed for the 250s and 325s must have the weight of the 4s wire feeder added to get the weights of the total package.

Section 1 - INSTALLATION

WARNING

- Turn the input power off at the disconnect switch before installing or servicing this machine.
- Do not touch electrically “hot” parts such as output terminals or internal wiring.
- Connect earthing screw (⊥) to a good earth ground.
- Do not operate with covers removed.
- Turn power switch “off” before connecting or disconnecting cables or other equipment.

HIGH VOLTAGE can kill

Only qualified personnel should install or service this equipment.

Machine Installation

1.1 Location

Place the welder where clean cooling air can freely circulate in through the back louvers and out through the front louvres. Dirt, dust or any foreign material that can be drawn into the welder should be kept at a minimum. Failure to observe these precautions can result in excessive operating temperatures and nuisance thermostat trips.

1.2 Connection to Mains Supply

Before connecting the machine to the mains supply check that the voltage and current capacity correspond to the machine voltage and rated input current. Use a fuse or C/B per AS3000 or local wiring rules.

The machine is supplied with an input lead fitted.

Have a qualified electrician fit a suitable input plug.

The REDI-MIG® 210c, 250c & 250s are supplied with factory fitted 240 volt 15 amp plug. The REDI- MIG® 250c & 250s are limited to 205 Amp at 20% Duty Cycle with this lead fitted. To obtain full output as per the nameplate ratings they require Input Lead part Number K32017 to be fitted.

CAUTION

Never connect the green/yellow conductor to any of the active supply lines from the mains. This conductor is to earth the machine as required by Electrical Regulations. Once the above has been followed the machine can be plugged into the mains outlet.

1.3 Shielding Gas Supply (For the Gas Metal Arc Welding Process)

Obtain cylinder of appropriate type shielding gas for the process being used.



WARNING

Refer to “Safety in Welding and Cutting” - ANSI Standard Z49-1 and WTIA Technical Note 7 available from the Welding Technology Institute of Australia.

Please also refer to “Safety in Welding and Allied processes - AS 1674.1 & .2” and WTIA Technical Note 7 – TN07. Australian Standards are available from SAI Global – www.saiglobal.com and WTIA publications are available from the Welding Technology Institute of Australia – www.wtia.com.au”.



CYLINDER may explode if damaged

1. Set gas cylinder on rear platform of the machine. Hook chain in place to secure cylinder to rear of welder.
2. Remove the cylinder cap. Inspect the cylinder valve for damaged threads, dirt and dust. For cylinders having an external thread fitting, remove any dust and dirt from the threads with a clean cloth.

DO NOT ATTACH THE REGULATOR/FLOWMETER IF OIL, GREASE OR CYLINDER VALVE DAMAGE IS PRESENT. OIL OR GREASE IN THE PRESENCE OF HIGH PRESSURE OXYGEN IS EXPLOSIVE! Inform your gas supplier of this condition.

3. Stand to one side away from the outlet and open the cylinder valve for an instant. This blows away any dust or dirt which may have accumulated in the valve outlet.
4. Inspect the regulator/flowmeter for damaged threads and seals, dirt and dust. Remove dust and dirt with a clean cloth.

DO NOT USE THE REGULATOR/FLOWMETER IF DAMAGE IS PRESENT! Have an authorised repair station repair any damage.



WARNING

Gas under pressure is explosive. Always keep gas cylinders in an upright position and always keep chained to undercarriage or stationary support. Refer “Safety in Welding and Cutting” - ANSI Standard Z49-1 and WTIA Technical Note 7 available from the Welding Technology Institute of Australia.

5. Attach the regulator/flowmeter to the cylinder valve and tighten the union nut(s) securely with a spanner.
6. Attach the machines inlet gas hose to the outlet fitting of the regulator/flowmeter, and tighten the union nut securely with a spanner.
7. Before opening the cylinder valve, turn the regulator adjusting knob counter-clockwise until the adjusting spring pressure is released.



WARNING

Never stand directly in front of or behind the regulator/flowmeter when opening the cylinder valve. Always stand to one side.

8. Open the cylinder valve slowly a fraction of a turn. When the cylinder pressure gauge pointer stops moving, open the valve fully.

9. The regulator/flowmeter is adjustable. Set it for the flow rate recommended for the procedure and process being used before starting to weld.

1.4 Gun and Cable Installation



WARNING

Turn the welder power switch off before installing gun and cable.

LINC Gun® 240G / 360G MIG gun (as supplied)

1. Lay the cable out straight.
2. Make sure all pins on the gun cable connector are aligned with the proper mating sockets on the front panel gun connector and then join the connectors and tighten the hand nut on the gun cable connector.

Note: If a gun and cable other than the supplied gun is to be used, it must conform to standard European-style connector specifications. See Picture.

The gun trigger switch must be capable of switching 10 milliamps at 60 volts DC—resistive.



CAUTION

The gun trigger switch connected to the gun trigger control cable must be a normally open, momentary switch. The terminals of the switch must be insulated from the welding circuit. Improper operation of, or damage to, the machine might result if this switch is common to an electrical circuit other than the machine trigger circuit.



WARNING

Turn the welder power switch off before changing polarity.

1.5 Output Polarity Connection 210c, 250c, 325c only

The electrode cable is located between output terminals.

The electrode cable is connected to the required output terminal on the front of the REDI-MIG® 210c, 250c, and 325c.

The gun polarity can be changed by placing the electrode cable to the required output terminal, eg. for electrode (-)ve, connect the electrode cable to the (-)ve output stud. Connect the work lead to the other output terminal.






Output Polarity Connection 250s and 325s

The REDI-MIG® 4s is connected to the REDI-MIG® 250s & 325s separate power source via a control/electrode/gas cable assembly. The electrode cable is connected to the required output terminal on the front of the REDI-MIG® 250s & 325s separate power source.

The control cable connects to the plug on the front of the REDI-MIG® 250s & 325s separate power source, between the output terminals.

The gun polarity can be changed by placing the electrode cable to the required output terminal on the front of the REDI-MIG® 250s & 325s, eg. for electrode (-)ve, connect the electrode cable to the (-)ve output terminal. Connect the work lead to the other output terminal.

Section 2 - OPERATING INSTRUCTIONS

 WARNING	
	<ul style="list-style-type: none"> Do not touch electrically live parts or electrode with skin or wet clothing. Insulate yourself from work and ground. Always wear dry insulating gloves.
ELECTRIC SHOCK can kill	
	<ul style="list-style-type: none"> Keep your head out of fumes. Use ventilation or exhaust to remove fumes from breathing zone.
FUMES AND GASES can be dangerous	
	<ul style="list-style-type: none"> Keep flammable material away. Do not weld upon containers which have held combustibles.
WELDING SPARKS can cause fire or explosion	
	<ul style="list-style-type: none"> Wear eye, ear and body protection.
ARC RAYS can burn	

IMPORTANT SAFETY NOTE: In 2T mode (refer point 10 below), this DC Constant Voltage wire welder provides "COLD" electrode when the gun trigger is not operated. Conversely, the output terminals are "LIVE" when the gun trigger is "activated" when pressed in 2T mode, or triggered on in 4T mode.

Welding voltage values for REDI-MIG® 210c, 250c & 250s

	REDI-MIG 210c	REDI-MIG 250c	REDI-MIG 250s
Position	Volts	Volts	Volts
1	14.5V	15.0V	15.0V
2	15.0V	17.5V	17.5V
3	16.0V	19.0V	19.0V
4	17.0V	20.5V	20.5V
5	18.5V	22.0V	22.0V
6	20.0V	24.0V	24.0V
7	21.5V	26.5V	26.5V
8	24.0V	29.0V	29.0V

1. POWER SWITCH – Turns power on and off with built-in indicator light.

2. OVER TEMPERATURE LIGHT – Indicates when exceeding duty cycle i.e. based on 10 minute time period for 60% duty cycle, if actual welding time exceeds 6 minutes the light will come on. The input power remains on keeping the cooling fan operative.

3. WIRE FEED SPEED CONTROL (WFS) – Use this control to adjust the speed at which the wire feeds when welding. This is in effect a current control as the power source will deliver the current necessary to melt the wire. The higher the speed, the more current will be required. Wire feed speed range is approximately 1 to 20 m/min.

Operation of the gun trigger switches the wire feed motor on and off. The wire feed motor is dynamically braked to minimise wire over run after welding has ceased.

4. TORCH CONNECTION – Euro torch connection

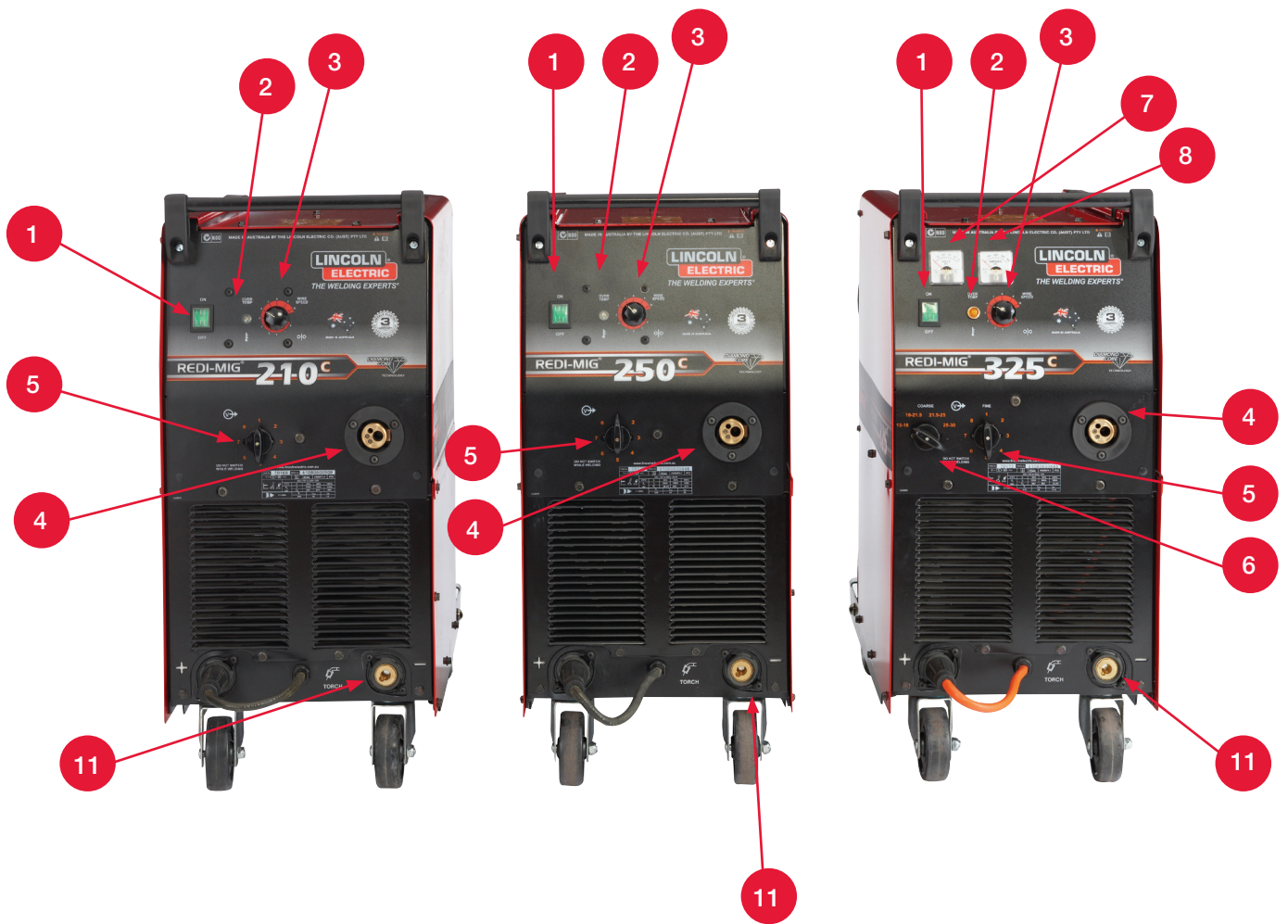
5 & 6. ARC VOLTAGE CONTROL – The output voltage is controlled by rotary switch. The REDI-MIG® 210c, 250c & 250s have a single switch that provides the user with 8 voltage settings. The REDI-MIG® 325c & 325s have a 4 position coarse and 8 position fine voltage selection, allowing the user to select up to 32 welding voltages.

The approximate weld voltages for the rotary switch positions for the 210c, 250c and 250s are below left. Data for the 325c and 325s are below right.

Welding voltage values for the REDI-MIG® 325c & 325s

Position	Position	Volts	Position	Position	Volts
13-18V	1	13	21.5-25V	1	21.5
13-18V	2	14	21.5-25V	2	22
13-18V	3	15	21.5-25V	3	22.5
13-18V	4	16	21.5-25V	4	23
13-18V	5	16.5	21.5-25V	5	23.5
13-18V	6	17	21.5 - 25V	6	24
13-18V	7	17.5	21.5-25V	7	24.5
13-18V	8	18	21.5-25V	8	25
18-21.5V	1	18	25-34V	1	25
18-21.5V	2	18.5	25-34V	2	25.5
18-21.5V	3	19	25-34V	3	26
18-21.5V	4	19.5	25-34V	4	26.5
18-21.5V	5	20	25-34V	5	27
18-21.5V	6	20.5	25-34V	6	28
18-21.5V	7	21	25-34V	7	29
18-21.5V	8	21.5	25-34V	8	30

Section 2 - OPERATING INSTRUCTIONS



7. VOLTAGE METER - Analogue meter displays welding voltage. Supplied as standard on REDI-MIG® 325c. Available as a field fit option for other REDI-MIG® models.

8. AMPERAGE METER - meter displays welding amperage. Supplied as standard on REDI-MIG® 325c. Available as a field fit option for other REDI-MIG® models.

9. GAS PURGE/WIRE INCH – A two position toggle switch located on the REDI-MIG® 4s Use the gas purge momentary toggle switch to operate the gas solenoid to purge air from the gas supply after connecting a new gas cylinder. Gas purge will only operate while the toggle switch is held upwards. Use the same toggle switch to operate the wire feed motor and “cold” inch the wire, by pushing the toggle switch downwards.

Section 2 - OPERATING INSTRUCTIONS



10. 2 STEP/4 STEP TRIGGER OPERATION – A two position toggle switch located on the REDI-MIG® 4s provides two modes of operation of the gun trigger. In 2 step mode, the gun trigger is pressed to start welding and released to stop.

In the 4 step mode, pressing the gun trigger only operates the gas solenoid, allowing shielding gas to flow. Releasing the gun trigger activates the contactor which starts the wire feed motor and connects welding current to the wire so that welding may commence. To stop welding, the trigger must again be operated; pressing it stops the wire feed, activates the burn back time delay and opens the contactor after the pre-set burn back time. Releasing the trigger stops the gas flow.

To recommence welding, the above cycle must be repeated.

11. Output Terminals – Dinse connection used to connect electrode cable and work return lead.

FOR OUT POLARITY CONNECTION REFER TO SECTION 1.5

12. CONTROL CABLE OUTPUT CONNECTION - The control cable connects to the output connection plug on the front of the REDI-MIG® 250s & 325s separate power source, between the output terminals. The control cable is used to connect the 4s wire feeder.

BURNBACK CONTROL – This control is located in the wire feed bay. The burnback control adjusts the time period from when the drive motor stops until the power source and gas solenoid are switched off (approximately 0.1 seconds when fully anti-clockwise to 1.1 seconds when adjusted fully clockwise).

The purpose of the burnback control is to prevent the electrode wire sticking in the weld crater at the finish of the weld. Adjustable burnback control is standard on the REDI-MIG® 250s, 325c & 325s. The REDI-MIG® 210c & 250c have a built-in preset burnback.