



# ADVANCEARC 400/500 MMA (STICK) WELDERS

## OPERATING INSTRUCTIONS



400V  
THREE  
PHASE



IGBT  
INVERTER  
TECHNOLOGY



DIRECT  
CURRENT  
OUTPUT



SPIKE/  
GENERATOR  
SAFE



VOLTAGE  
REDUCTION  
DEVICE



PHASE  
LOSS  
PROTECTION



INTELLIGENT  
PROTECTION  
SYSTEM



IP23 CORROSION  
& SALT SPRAY  
RESISTANT



LIFT TIG  
(OPTIONAL  
TORCH)



CONSTANT  
CURRENT



CELLULOSE  
WELDING RODS



## ADVANCEARC 400 • ADVANCEARC 500

### **Congratulations on your new Strata product!**

The Strata range from Euroquip uses latest technology design and engineering to produce welding products that combine market leading value and features with durability. Designed for discerning operators who seek professional results and product quality without the price tag of a full professional setup. Design emphasis is placed on simple, functional design and operation. Strata product is subject to stringent quality control and designed and manufactured to NZ & Australian standards.

Common use of Strata products include:

- Light Engineering
- Automotive
- Home/ Hobby Engineering
- Farming
- Industrial Maintenance & Repairs

For industrial welding solutions, check out the Strata range from Euroquip:

**[www.strata.co.nz](http://www.strata.co.nz)**

Euroquip is a market leading provider of innovative power equipment solutions to a wide range of industries across New Zealand and Australia. Key product categories are; welding equipment, air compressors, power generators and cleaning equipment.

Euroquip's slogan is 'empowering industries', find out more about the advantage Euroquip brings at **[www.euroquip.co.nz](http://www.euroquip.co.nz)**.

Providing exceptional product support is a key component of Euroquip's market leading customer advantage focus. As part of this program, it is required for all products to be registered with Euroquip to qualify for product support. Products not registered with Euroquip are supported by a base 12 month warranty only. Spare parts and technical support will not be available for an unregistered product outside of this base warranty period. If a Euroquip dealer has not already registered your product, please register it online at [www.euroquip.co.nz](http://www.euroquip.co.nz). To request a physical registration form, please download one at [www.euroquip.co.nz](http://www.euroquip.co.nz) under the 'Contact Us' tab.



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# MMA (STICK) WELDERS

• **ADVANCEARC 400** • **ADVANCEARC 500** •

The Advance Series 3 Phase MMA (Stick) Welders include the latest IGBT technology & high tech features for industrial use. IGBT means increased reliability and performance for demanding industrial conditions. Bulletproof overspec Internals factory tested to 550V and IP23 External (abuse) rating means the Advance 3 Phase Series will be with you for life.



- IGBT Module Inverter Technology for smooth and stable output, increased reliability and high duty cycle
- Phase loss protection prevents damage as machine automatically shuts down if power supply phase loss occurs
- Designed for using cellulose welding rods
- Selectable VRD Protection for increased safety
- Damage resistant industrial casing with front panel protection
- Microprocessor control system for superior and dynamic arc characteristics
- Lightweight & compact design, ideal for portable applications
- Adjustable arc force, hot start & anti-stick for greater control and ease of use
- Digital current display meter for accurate pre-setting and feedback of welding parameters & output.
- Temperature, voltage and current sensors for increased reliability & safety
- Power source wind tunnel cooling construction for protection against environmental contamination.



## ADVANCEARC 400

DIMENSIONS:	WEIGHT:	INPUT POWER SUPPLY:	MAX. INPUT CURRENT:	GENERATOR CAPACITY:	MMA CURRENT OUTPUT:	MMA O/C VOLTAGE:	DUTY CYCLE:	STANDARDS:	MMA ROD SIZE:	MAX WELD THICKNESS
485 x 240 x 445mm	19kg	400V AC 50Hz 3 Phase	33A	23KVA	20A-400A	90V	60% @400A	EN60974-1:2012	1.6 - 6.0mm	12mm +

## ADVANCEARC 500

DIMENSIONS:	WEIGHT:	INPUT POWER SUPPLY:	MAX. INPUT CURRENT:	GENERATOR CAPACITY:	MMA CURRENT OUTPUT:	MMA O/C VOLTAGE:	DUTY CYCLE:	STANDARDS:	MMA ROD SIZE:	MAX WELD THICKNESS
550 x 240 x 445mm	23kg	400V AC 50Hz 3 Phase	45A	32KVA	20A-500A	90V	60% @400A	EN60974-1:2012	1.6 - 6.0mm	12mm +



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IP23 CORROSION  
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LIFT TIG  
(OPTIONAL  
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CONSTANT  
CURRENT



CELLULOSE  
WELDING RODS



## Know Your Machine

\*Denotes more detailed explanation of function to follow.

1. Welding current control knob.
2. Digital current display meter.
3. Power Indicator. Lights when input power connected and machine switched on.
4. Error/ Overload Indicator\*
5. Welding output mode button. Sets power source in MMA, MMA VRD\* or Lift TIG mode.
6. MMA mode indicator
7. MMA VRD mode indicator
8. Lift TIG mode indicator
9. Arc Force control knob\*
10. Hot Start control knob\*
11. Positive (+) welding power output connection socket
12. Negative (-) welding power output connection socket.



## Further Controls Explained

### Overload/ Error Indicator

Lights when over voltage, over current, input phase loss or electrical overheating (due to exceeding duty cycle) is detected and protection is activated.

When protection is activated, welding output will be disabled until the safety system senses the overload has reduced sufficiently and indicator lamp goes out. May also trigger if machine experiences an internal power circuit failure.

### Arc Force Control Knob

An MMA welding power source is designed to produce constant output current (CC). This means with different types of electrode and arc length; the welding voltage varies to keep the current constant. This can cause instability in some welding conditions as MMA welding electrodes will have a minimum voltage

they can operate with and still have a stable arc. Arc Force control boosts the welding power if it senses the welding voltage is getting too low. The higher the arc force adjustment, the higher the minimum voltage that the power source will allow. This effect will also cause the welding current to increase. 0 is Arc Force off, 10 is maximum Arc Force. This is practically useful for electrode types that have a higher operating voltage requirement or joint types that require a short arc length such as out of position welds.

### Hot Start Control Knob

Hot start provides extra power when the weld starts to counteract the high resistance of the electrode and workpiece as the arc is started.

### Lift TIG Mode

Lift TIG is an arc ignition system for basic TIG welding that removes the need to 'scratch' start or strike the tungsten on the work piece to start the arc, which can have a negative effect on the weld quality due to tungsten contamination. Lift arc starting works by gently touching the tungsten on the work piece and then lifting it off. The control circuit will sense when the tungsten is removed from the work piece and send a pulse of electricity through the torch that will cause the TIG arc to initiate.



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### VRD Function

VRD stands for Voltage Reduction Device.

This is a safety system that reduces the output voltage from the welding terminals in MMA mode while the welding output is not in use, to reduce the risk of electric shock from the live output voltage.

The disadvantage of this system is that it makes the striking of the arc more difficult, especially on restarts and with some types of electrode such as low hydrogen electrodes.

### Duty Cycle Rating

Welding duty cycle is the percentage of actual welding time that can occur in a ten minute cycle. E.g. 20% at 160 amps - this means the welder can weld at 160 amps for 2 minutes and then the unit will need to be rested for 8 minutes. All duty cycle ratings are based on an ambient air temperature of 40°C with 50% humidity, which is the international standard for such a rating. In an environment with temperatures exceeding 40°C, the duty cycle will be less than stated. In ambient temperature less than 40°C, duty cycle performance will be higher.

## Quick Start Guide - Welder Installation

### Electrical Connection

- The ADVANCEARC 400 is designed to operate on a 3 Phase 32A 400V AC power supply.
- The ADVANCEARC 500 is designed to operate on a 3 Phase 36A 400V AC power supply.

Operating with a lower current rated supply circuit will reduce the rated duty cycle performance.

### Operating Environment

Adequate ventilation is required to provide proper cooling for the ADVANCEARC 400/500. Ensure that the machine is placed on a stable level surface where clean cool air can easily flow through the unit. The ADVANCEARC 400/500 has electrical components and control circuit boards which may be damaged by excessive dust and dirt, so a clean operating environment is important.

### Basic Operation

#### 1. ARC/ MMA Welding Operation

- 1.1 Connect the earth cable quick connector to the negative welding power output socket (12) Connect the earth clamp to the work piece. Contact with the work piece must be firm. Contact with clean, bare metal, with no corrosion, paint or scale at the contact point.

- 1.2 Insert an electrode into the electrode holder and connect the electrode holder and work lead to the positive welding power output socket (11).

*Note: This polarity connection configuration is valid for most GP (General Purpose) MMA electrodes. There are variances to this. If in doubt, check the electrode specifications or consult the electrode manufacturer.*

- 1.3 Connect the machine to suitable mains power using the mains input power lead. Switch the mains power switch to 'on' to power up the machine. Select MMA welding mode (6) or MMA VRD welding mode (7) using the button (5).

- 1.4 Set the welding output current (3), hot start (10) and arc force (9) using the control knobs. You are now ready to weld!

#### 2. Lift TIG Operation

*Note: Lift TIG operation requires an optional valve control TIG torch, and argon gas cylinder.*

- 2.1 Connect the earth cable quick connector to the positive welding power output socket (11). Connect the earth clamp to the work piece. Contact with the work piece must be firm contact with clean, bare metal, with no corrosion, paint or scale at the contact point.
- 2.2 Insert TIG torch power connection into the negative welding power output socket (12). Connect valve TIG torch gas line to the regulator, ensuring all connections are tight.



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- 2.3 Open gas cylinder valve and adjust regulator, flow should be between 5-10 l/min depending on application. Re-check regulator flow pressure with torch valve open as static gas flow setting may drop once gas is flowing.
- 2.4 Connect the machine to suitable mains power using the mains input power lead. Switch the mains power switch to 'on' to power up the machine. Select Lift TIG welding mode (8) using the button (5).

- 2.5 Select the required output current using the current control knob (1). You are now ready to weld!

Please note, the AdvanceArc 400/500 is a DC (Direct Current) output welder only, this means that it is unable to TIG weld reactive metals such as Aluminium alloys and Brass (which require AC output). DC TIG output is suitable for steel, stainless steel and copper. The AdvanceArc ACDC series are the models in the range that are designed for TIG welding Aluminium and its alloys.

## Effects of MMA Welding Various Materials

### High Tensile and Alloy Steels

The two most prominent effects of welding these steels are the formation of a hardened zone in the weld area, and, if suitable precautions are not taken, the occurrence in this zone of under-bead cracks. Hardened zone and underbead cracks in the weld area may be reduced by using the correct electrodes, pre-heating, using higher current settings, using larger electrode sizes, short runs for larger electrode deposits or tempering in a furnace.

### Manganese Steels

The effect on manganese steel of slow cooling from high temperatures causes embrittlement. For this reason it is absolutely essential to keep manganese steel cool during welding by quenching after each weld or skip welding to distribute the heat.

### Cast Iron

Most types of cast iron, except white iron, are weldable. White iron, because of its extreme brittleness, generally cracks when attempts are made to weld it. Trouble may also be experienced when welding white-heart malleable, due to the porosity caused by gas held in this type of iron.

### Copper and Alloys

The most important factor is the high rate of heat conductivity of copper, making pre-heating of heavy sections necessary to give proper fusion of weld and base metal.

### Types of Electrodes

ARC Welding electrodes are classified into a number of groups depending on their applications. There are a great number of electrodes used for specialised industrial purposes which are not of particular interest for everyday general work. These include some low hydrogen types for high tensile steel, cellulose types for welding large diameter pipes, etc. The range of electrodes dealt with in this publication will cover the vast majority of applications likely to be encountered; are all easy to use.

### Electrodes for Joining Different Metals

#### MILD STEEL :

**E6011** - This electrode is used for all-position welding or for welding on rusty, dirty, less-than- new metal. It has a deep, penetrating arc and is often the first choice for repair or maintenance work.

**E6013** - This all-position electrode is used for welding clean, new sheet metal. Its soft arc has minimal spatter, moderate penetration and an easy-to-clean slag.

**E7014** - All positional, ease to use electrode for use on thicker steel than E6013. Especially suitable for sheet metal lap joints, fillet welds and general purpose plate welding.

**E7018** - A low-hydrogen, all-position electrode used when quality is an issue or for hard-to-weld metals. It has the capability of producing more uniform weld metal, which has better impact properties at low temperatures.

#### CAST IRON

**ENI-CL** - Suitable for joining all cast irons except white cast iron.

#### STAINLESS STEEL:

**E318L-16** - High corrosion resistances. Ideal for dairy work etc.



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### Available Parts & Accessories

<b>ADVANCEARC 400/500:</b>			
PDL15	Plug, 3 Pin 15A 250V straight	ETCPH6840	Overcord 4.0mm Electrodes (350mm)
17478	Earth Lead 50mm <sup>2</sup> cable, 35-70mm plug, 5m	ETCPH6850	Overcord 5.0mm Electrodes (350mm)
17479	Arc Lead 50mm <sup>2</sup> cable, 35-70mm plug, 5m	ETCPH7725	Supercito 2.5mm Electrodes (350mm)
CP3550	Cable Plug - 35-50mm <sup>2</sup> - Male	ETCPH7732	Supercito 3.2mm Electrodes (450mm)
S600EH	600A Screw Type Elect. Holder	ETCPH7740	Supercito 4.0mm Electrodes (450mm)
S500EC	Strata 500a Earth Clamp	ETCPH7750	Supercito 5.0mm Electrodes (450mm)
AG500EC	500A 'G' Style Earth Clamp	ETCPH56S25	Tenax 56S 2.5mm Electrodes (350mm)
DW3000	Auto Darkening Helmet, Shade 9-13	ETCPH56S32	Tenax 56S 3.2mm Electrodes (350mm)
DW4000	Auto Darkening Helmet, Shade 9-13 with Grinding Visor	ETCPH56S40	Tenax 56S 4.0mm Electrodes (450mm)
DW7000	Auto Darkening Helmet, Shade 9-13 with Grinding Visor and PRSL Filtration System.	ETCPH56S50	Tenax 56S 5.0mm Electrodes (450mm)
		TWP17V-25-2	WP17 Valve Torch, 25ft, 2pc, 3550 Cable Plug
ETCPH4825	Overcord R92 2.5mm Electrodes (350mm)	TWP26V-12-2	WP26 Valve 12ft 2pc
ETCPH4832	Overcord R92 3.2mm Electrodes (350mm)	GR101AR	Argon Twin Gauge Regulator
ETCPH4840	Overcord R92 4.0mm Electrodes (350mm)	GTK4000	1000A Gouging Torch
ETCPH6825	Overcord 2.5mm Electrodes (350mm)	G048DC	Gouging Carbons - 4.8mm
ETCPH6832	Overcord 3.2mm Electrodes (350mm)	G080DC	Gouging Carbons - 8.0mm

These accessories listed are available from your Strata Supplier. Refer to the Strata Catalogue, your Strata Supplier or look online at [www.strata.co.nz](http://www.strata.co.nz) for other accessories and consumables available.

### Other Knowledge & Resources

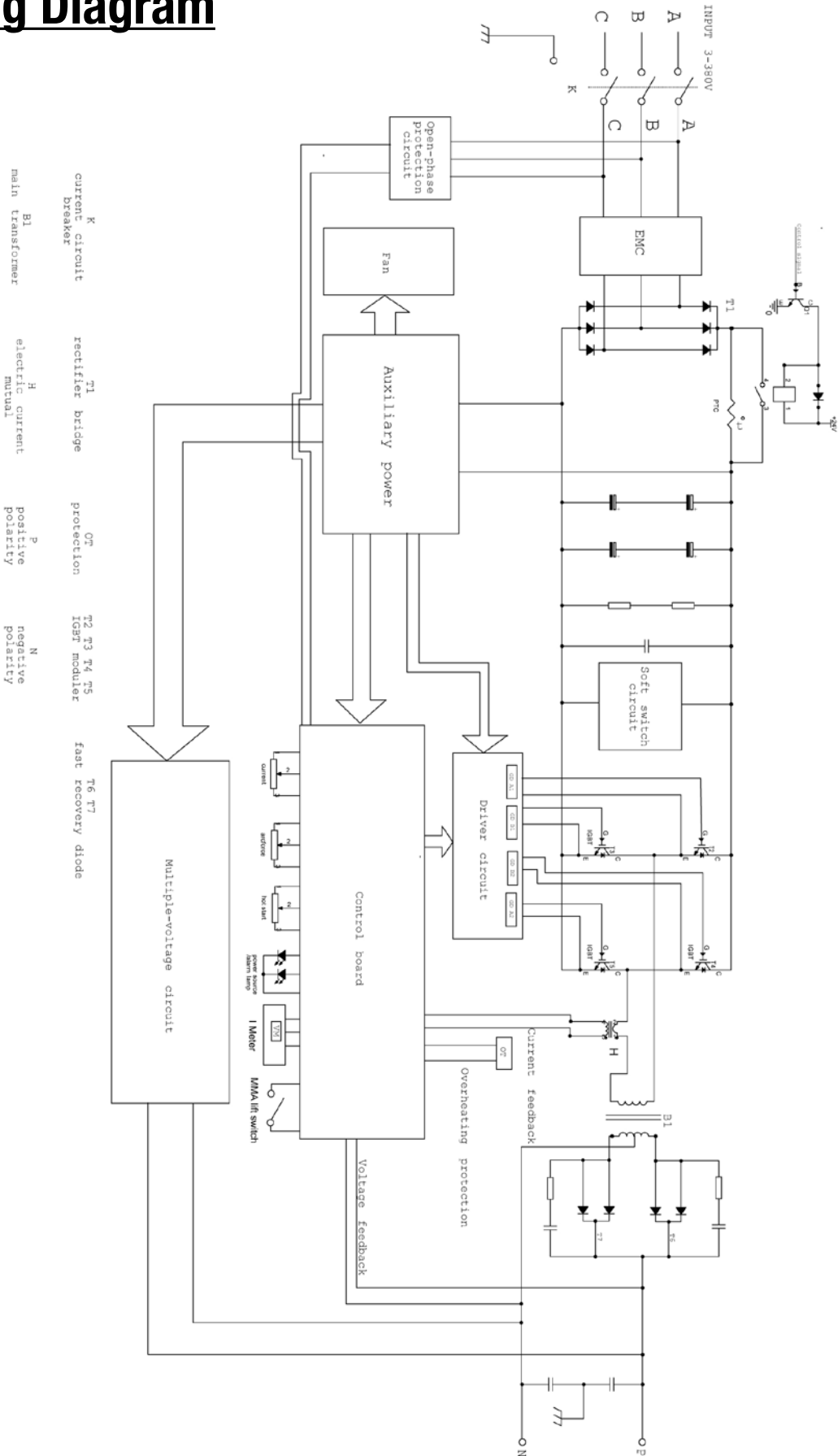
Please refer to Euroquip website  
[www.euroquip.co.nz/ Downloads.html](http://www.euroquip.co.nz/Downloads.html)  
 for knowledgebase articles & operation videos.





# ADVANCEARC 400 • ADVANCEARC 500

## Wiring Diagram





## Care & Maintenance

### Keep your Welding Machine in Top Condition

The ADVANCEARC 400/500 does not require any special maintenance, however the user should take care of the machine as follows:

- Regularly clean the ventilation slots.
- Keep the casing clean.
- Check all cables before use.
- Check electrode holders, work lead/clamps and welding torches before use.
- Replace worn electrode holders and earth clamps, which do not provide a good connection.
- Replace worn consumable parts in a timely manner.
- Use a soft cloth or brush to clean electrical components.
- Do not use liquid cleaning products, water or especially solvents.
- Do not use compressed air to clean electrical components as this can force dirt and dust further into components, causing electrical short circuits.
- Check for damaged parts. Do not use the welder with damaged parts.
- A damaged welder must be carefully checked by a qualified person to determine that it will operate properly. Check for breakage of parts, mountings and other conditions that may affect its operation. An authorised service centre should properly repair a damaged part. Have your welder repaired by an expert.

This appliance is manufactured in accordance with relevant safety standards. Only experts must carry out repairing of electrical appliances, otherwise

considerable danger for the user may result. Use only genuine replacement parts. Do not use modified or non-genuine parts.

### Storing the Welder

When not in use the welder should be stored in the dry and frost-free environment.

**⚠ WARNING!** Before performing cleaning/maintenance, replacing cables / connections, make sure the welding machine is switched off and disconnected from the power supply.



## Electrodes

### Size of Electrodes

The electrode size is determined by the thickness of metals being joined and can also be governed by the type of welding machine available. Small welding machines will only provide current (amperage) to run smaller sized electrodes.

For thin sections, it is necessary to use smaller electrodes otherwise the arc may burn holes through the job. A little practice will soon establish the most suitable electrode for a given application.

### Storage of Electrodes

Always store electrodes in a dry place and in their original containers.

### Electrode Polarity

Electrodes are generally connected to the electrode holder with the electrode holder connected positive polarity.

The work lead is connected to the negative polarity and is connected to the work piece. If in doubt consult the electrode data sheet.



## Safety

### Store and Retain this Manual

Retain this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number into the NOTES section at the rear, and keep this manual and the receipt in a safe and dry place for future reference.

### Important Safety Information

Failure to follow the warnings and instructions may result in electric shock, fire, serious injury and/or death. Save all warnings and instructions for future reference.



This is the safety alert symbol to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



**DANGER!** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING!** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTE**, used to address practices not related to personal injury.

**CAUTION**, without the safety alert symbol, is used to address practices not related to personal injury.

### General Safety Warnings

**1. Maintain labels and nameplates on the welder.** These carry important information. If unreadable or missing, contact Euroquip for a replacement.

**2. Avoid unintentional starting.** Make sure the welder is setup correctly and you are prepared to begin work before turning on the welder.

**3. Unplug before performing maintenance.**

Always unplug the welder from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

**4. Never leave the welder unattended while energized.** Turn power off before leaving the welder unattended.

**5. Do not touch live electrical parts.** Wear dry, insulating gloves. Do not touch the electrode or the conductor tong with bare hands. Do not wear wet or damaged gloves.

**6. Protect yourself from electric shock.** Do not use the welder outdoors. Insulate yourself from the work piece and the ground. Use non-flammable, dry insulating material if possible, or use dry rubber mats, dry wood or plywood, or other dry insulating material large enough to cover the area of contact with the work or the ground.

**7. Avoid inhaling dust.** Some dust created by power sanding, sawing, grinding, drilling, cutting, welding and other construction activities, contain chemicals known to cause cancer, birth defects or other harm. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

**8. People with pacemakers should consult their physician(s) before using this machine.**



**WARNING!**

Electromagnetic fields in close proximity to a heart pacemaker could cause interference, or failure of the pacemaker. The use of a Welder is NOT RECOMMENDED for pacemaker wearers. Consult your doctor.

**9. Ensure that the unit is placed on a stable location before use.**



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### WARNING!

If this unit falls while plugged in, severe injury, electric shock, or fire may result.

**10. Transportation Methods** Lift unit with the handles provided, or use a handcart or similar device of adequate capacity. If using a fork lift vehicle, secure the unit to a skid before transporting.



### CAUTION!

Disconnect input power conductors from de-energized supply line before moving the welding power source.

**11. Exercise good work practices.** The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be considered by the operator.

## Welding Safety Instructions & Warnings



### WARNING!

Protect yourself and others from possible serious injury or death. Keep children away. Read the operating/Instruction manual before installing, operating or servicing this equipment. Have all installation, operation, maintenance, and repair work performed by qualified people.

If an operator does not strictly observe all safety rules and take precautionary actions, welding products and welding processes can cause serious injury or death, or damage to other equipment or property. 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 European Standard EN60974-1 entitled: Safety in welding and allied processes.



### WARNING!

Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye and breathing protection must be AS/NZS compliant for the specific hazards in the work area.



### DANGER!

Always wear AS/NZS compliant safety glasses and full face shield fitted with appropriate filter shade number (Refer Filter Table on page 17.)



### CAUTION!

Heavy-duty work gloves, non-skid safety shoes and hearing protection used for appropriate conditions will reduce personal injuries.



### CAUTION!

Have the equipment serviced by a qualified repair person using identical replacement parts. This will ensure that the safety of the power tool is maintained.

## Personal Safety



### CAUTION!

Keep the work area well lit. Make sure there is adequate space surrounding the work area. Always keep the work area free of obstructions, grease, oil, trash, and other debris. Do not use equipment in areas near flammable chemicals, dust, and vapours. Do not use this product in a damp or wet location.

1. Stay alert, watch what you are doing and use common sense when operating equipment. Do not use a tool while you are tired or under the influence of drugs, alcohol or medication. A moment of distraction when operating equipment may result in serious personal injury.
2. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.



## Arc Rays can Burn Eyes and Skin



### DANGER!

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin.

1. Use a Welding Helmet or Welding Face Shield fitted with a proper shade filter (refer AS 60974-1, AS/NZS 1337.1 and AS/NZS 1338.1 Safety Standards) to protect your face and eyes when welding or watching. (See Filter Table on Page 20)
2. Wear approved safety glasses. Side shields are 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 safety protection.
5. Never wear contact lenses while welding.

## Noise Can Damage Hearing



### CAUTION!

Noise from some processes can damage hearing. Use AS/NZS compliant ear plugs or ear muffs if the noise level is high.

## Work Environment Safety



### DANGER!

Remove any combustible material from the work area.

1. When possible, move the work to a location well away from combustible materials. If relocation is not possible, protect the combustibles with a cover made of fire resistant material.
2. Remove or make safe all combustible materials for a radius of 10 metres around the work area. Use a fire resistant material to cover or block all doorways, windows, cracks, and other openings.
3. Enclose the work area with portable fire resistant screens. Protect combustible walls, ceilings, floors, etc., from sparks and heat with fire resistant covers.

4. If working on a metal wall, ceiling, etc., prevent ignition of combustibles on the other side by moving the combustibles to a safe location. If relocation of combustibles is not possible, designate someone to serve as a fire watch, equipped with a fire extinguisher, during the welding process and well after the welding is completed.
5. Do not weld or cut on materials having a combustible coating or combustible internal structure, as in walls or ceilings, without an approved method for eliminating the hazard.
6. After welding, make a thorough examination for evidence of fire. Be aware that visible smoke or flame may not be present for some time after the fire has started. Do not weld or cut in atmospheres containing dangerously reactive or flammable gases, vapours, liquids, and dust. Provide adequate ventilation in work areas to prevent accumulation of flammable gases, vapours, and dust.
7. Do not apply heat to a container that has held an unknown substance or a combustible material whose contents, when heated, can produce flammable or explosive vapours. Clean and purge containers before applying heat. Vent closed containers, including castings, before preheating, welding, or cutting.

## Electricity Can Kill



### DANGER!

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 semi-automatic 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 the work and the ground using dry insulating mats or covers.



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4. Disconnect input power 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 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 the 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. Connect work piece to a good electrical ground.
11. Do not touch the electrode while in contact with the work (ground) circuit.

**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 (MMA)	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
Gas Metal Arc Welding (GWAW) (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 for comprehensive information regarding the above table.



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12. Use only well-maintained equipment. Repair or replace damaged parts as soon as practical.
13. In confined spaces or damp locations, do not use a welder with AC output unless equipped with a voltage reducer.

Arc rays from the welding process produce intense heat and strong ultraviolet rays that can burn eyes and skin. Use the following table to select the appropriate shade number for a Welding Helmet or Welding Face Shield.

### Fumes And Gases



#### WARNING!

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

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

### Fire & Explosive Risks



#### WARNING!

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, work piece, and hot equipment can cause fires and burns.

Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metal.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within 10m of the welding site.
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 the work lead/clamp to the job as close to the welding area as practical to prevent welding current from travelling long, possibly unknown paths and causing electric shock and fire hazards.
9. Do not use a welder to thaw frozen pipes.
10. Remove the stick electrode from the holder or cut off the welding wire at the contact tip when not in use.

### Sparks & Hot Metal



#### WARNING!

Chipping and grinding causes flying metal, and as welds cool they can throw off slag.

1. Wear an AS/NZS approved face shield or safety goggles. Side shields are recommended.
2. Wear appropriate safety equipment to protect the skin and body.



## Cylinders



### **WARNING!**

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 appropriate shielding gas, regulators, hoses, and fittings designed for the specific application; maintain them and their associated parts in good condition.
6. Turn your face away from the valve outlet when opening the cylinder valve.





# ADVANCEARC 400 • ADVANCEARC 500



# **ADVANCEARC 400 • ADVANCEARC 500**



## ADVANCEARC 400 • ADVANCEARC 500

### Warranty

As part of an on-going commitment to excellence in product support, Euroquip offers a comprehensive product warranty program.

In order to qualify for full warranty support, your product must be registered. Product not registered with Euroquip is supported by a base 12 month warranty only. Spare parts and technical support will not be available for an unregistered product outside of this base warranty period. If a Euroquip dealer has not already registered your product, please register it online or download a physical registration form at [www.euroquip.co.nz](http://www.euroquip.co.nz).

#### **Registered warranty period for the ADVANCEARC 400/500:**

**Commercial Use: 36 Months**

**Domestic Use: 36 Months**

Warranty covers failure caused by manufacturing and material defects in the product, during the warranty period specified. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty does not cover parts that are subject to wear and tear from usage.

Warranty covers failure of a product caused by defective materials and/or manufacturing for the period given and the usage specified by Euroquip. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty also does not cover failure caused by the untimely replacement or service of the above wearing parts. Evidence must be provided that the product has been maintained and serviced suitably for a claim to be considered under warranty.

Failure caused by incorrect operation of the product, lack of proper care and maintenance of the product, external damage, external circumstances such as contaminated fuel or poor water supply, modifications to the product, attempted repair/ service by a party other than an Approved Service Agent, is not covered under warranty.

Warranty does not cover pre delivery service and adjustment, or failure that may occur as a result of lack of/ incorrect pre delivery service and adjustment.

Warranty does not cover any incidental, indirect or consequential loss, damage or expense that may result from any defect, failure or malfunction of a product.

Should any issue be found to be a combination of a warranty failure and a non-warranty issue, the repair cost component to rectify and repair the non-warranty failure is the customers' full responsibility.

The decision that an issue with a product qualifies as a warranty claim is made at the sole jurisdiction of Euroquip.

No costs incurred will be considered under warranty if repairs are carried out by a party other than a Euroquip Approved Service Agent, unless with prior consent in writing from Euroquip.

It is the responsibility of the purchaser to deliver a product under warranty to the nearest relevant service agent or product reseller. Warranty does not cover call outs, mileage and freight costs.

If a product is repaired under warranty, parts and labour required for the repair will be supplied at no charge. Warranty assessment and repair will be scheduled and executed according to the normal work flow at the service location and depending on the availability of suitable replacement parts.

This warranty policy is an additional benefit and does not affect the legal rights of any end user, reseller or service agent.



Scan here to register your product

<http://www.euroquip.co.nz/Contact+Us/Product+Registration+Form.html>



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