HandyArc MIG 160i

Instruction manual

0448 314 001 GB 20240610

Valid for: Serial number:
GC412YY-XXXXXX

EU DECLARATION OF CONFORMITY

According to:

The Low Voltage Directive 2014/35/EU; The EMC Directive 2014/30/EU;
The RoHS Directive 2011/65/EU; The Ecodesign Directive 2009/125/EC;

Type of equipment

Arc welding power source

Type designation

HandyArc MIG160i from serial number GC412 YY XX XXXX
X and Y represents digits, 0 to 9 in the serial number, where YY indicates year of production.

Brand name or trademark

ESAB

Manufacturer or his authorised representative established within the EEA

ESAB AB
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden
Phone: +46 31 50 90 00, www.esab.com

The following EN standards and regulations in force within the EEA has been used in the design:

EN IEC 60974-1:2022+A11:2022	Arc Welding Equipment - Part 1: Welding power sources
EN IEC 60974-5:2019	Arc Welding Equipment - Part 5: Wire feeders
EU reg. no. 2019/1784	Ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC
EN IEC 60974-10:2021	Arc Welding Equipment - Part 10: Electromagnetic compatibility (EMC) requirements

Additional Information:

Restrictive use, Class A equipment, intended for use in locations other than residential.

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 and environmental requirements stated above.

Place/Date

Gothenburg
2024-03-13

Signature

Peter Burchfield
General Manager, Equipment Solutions

CE

1 SAFETY

1.1 Meaning of symbols

As used throughout this manual: Means Attention! Be Alert!

DANGER!
Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.

WARNING!
Means potential hazards which could result in personal injury or loss of life.

CAUTION!
Means hazards which could result in minor personal injury.

WARNING!
Before use, read and understand the instruction manual and follow all labels, employer´s safety practices and Safety Data Sheets (SDSs).

1.2 Safety precautions

Users of ESAB equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the equipment must be familiar with:
   - its operation
   - location of emergency stops
   - its function
   - relevant safety precautions
   - welding and cutting or other applicable operation of the equipment
2. The operator must ensure that:
   - no unauthorised person is stationed within the working area of the equipment when it is started up
   - no-one is unprotected when the arc is struck or work is started with the equipment
3. The workplace must:
   - be suitable for the purpose
   - be free from drafts
4. Personal safety equipment:
   - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
   - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns

5. General precautions:
   - Make sure the return cable is connected securely
   - Work on high voltage equipment **may only be carried out by a qualified electrician**
   - Appropriate fire extinguishing equipment must be clearly marked and close at hand
   - Lubrication and maintenance must **not** be carried out on the equipment during operation

WARNING!
Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.

ELECTRIC SHOCK - Can kill

- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing
- Insulate yourself from work and ground.
- Ensure your working position is safe

ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health

- Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
- Exposure to EMF may have other health effects which are unknown.
- Welders should use the following procedures to minimize exposure to EMF:
  - Route the electrode and work cables together on the same side of your body. Secure them with tape when possible. Do not place your body between the torch and work cables. Never coil the torch or work cable around your body. Keep welding power source and cables as far away from your body as possible.
  - Connect the work cable to the workpiece as close as possible to the area being welded.

FUMES AND GASES - Can be dangerous to health

- Keep your head out of the fumes
- Use ventilation, extraction at the arc, or both, to take fumes and gases away from your breathing zone and the general area

ARC RAYS - Can injure eyes and burn skin

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing
- Protect bystanders with suitable screens or curtains

NOISE - Excessive noise can damage hearing

Protect your ears. Use earmuffs or other hearing protection.

MOVING PARTS - Can cause injuries

- Keep all doors, panels, guards and covers closed and securely in place.
- Have only qualified people remove covers for maintenance and troubleshooting as necessary.

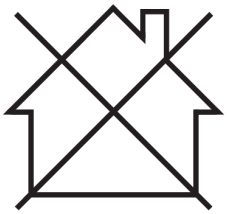
- Keep hands, hair, loose clothing and tools away from moving parts.
- Reinstall panels or covers and close doors when service is finished and before starting the unit.

FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby
- Do not use on closed containers.

CAUTION!
This product is solely intended for arc welding.

CAUTION!
Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.

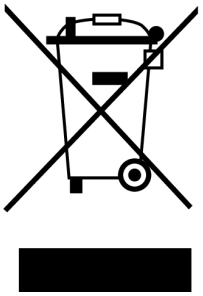


NOTE!
Dispose of electronic equipment at the recycling facility!

In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical and/or electronic equipment that has reached the end of its life must be disposed of at a recycling facility.

As the person responsible for the equipment, it is your responsibility to obtain information on approved collection stations.

For further information contact the nearest ESAB dealer.



ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.

2 INTRODUCTION

The **HandyArc MIG 160i** is a self-contained single phase welding system that is capable of performing MIG / MAG / GMAW / FCAW and MMA / SMAW / Stick welding processes.

ESAB accessories for the product can be found in the "ACCESSORIES" chapter of this manual.

2.1 Equipment

The system is supplied with:

- HandyArc MIG 160i power source
- MIG / MAG / GMAW / FCAW torch, 150 A, Euro, 3.0 m
- Contact tips, 0.6mm, 0.8 mm (fitted), 1.0 mm
- Work clamp lead set, 2 m, 16 mm^2, OKC 25
- Feedroll, 0.8/0.9 mm gasless (fitted)
- Feedroll, 0.6/0.8 mm solid (spare)
- Electrode holder, 2 m, 16 mm^2, OKC 25
- Shoulder strap
- Safety instructions
- QSG

3 TECHNICAL DATA

HandyArc MIG 160i	
Mains voltage	230 V ±10 %, 1ph, 50/60 Hz
Idle power	20 W
Welding output MIG / MAG / GMAW / FCAW	
15% duty cycle	160 A / 22.0 V
60% duty cycle	80 A / 18.0 V
100% duty cycle	62 A / 17.1 V
Welding output MMA / SMAW / Stick	
15% duty cycle	140 A / 25.6 V
60% duty cycle	70 A / 22.8 V
100% duty cycle	54 A / 22.2 V
Current range	
MIG / MAG / GMAW / FCAW	30 - 160 A
MMA / SMAW / Stick	10 - 140 A
Wire dimensions	
Mild steel and stainless steel	0.6 – 0.8 mm
Cored wire	0.8 – 1.0 mm
Wire feed speed	2.0 – 11.0 m/min
Spool diameter	100 mm and 200 mm
Open circuit voltage	78 (<35) VDC
Power efficiency	84%
Rated kVA	4,6 kVA
Power factor at max current	0.7
Operating temperature	-10 to +40 °C
Certification mark (standards)	CE
Dimensions l × w × h	439.7 × 206.3 × 308 mm
Weight	10.2 kg
Enclosure class	IP 21S

Duty cycle
The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading. The duty cycle is valid for 40 °C / 104 °F, or below.

Enclosure class
The **IP** code indicates the enclosure class, i.e. the degree of protection against penetration by solid objects or water.

Equipment marked **IP21S** is intended for indoor use.

3.1 ECO design information

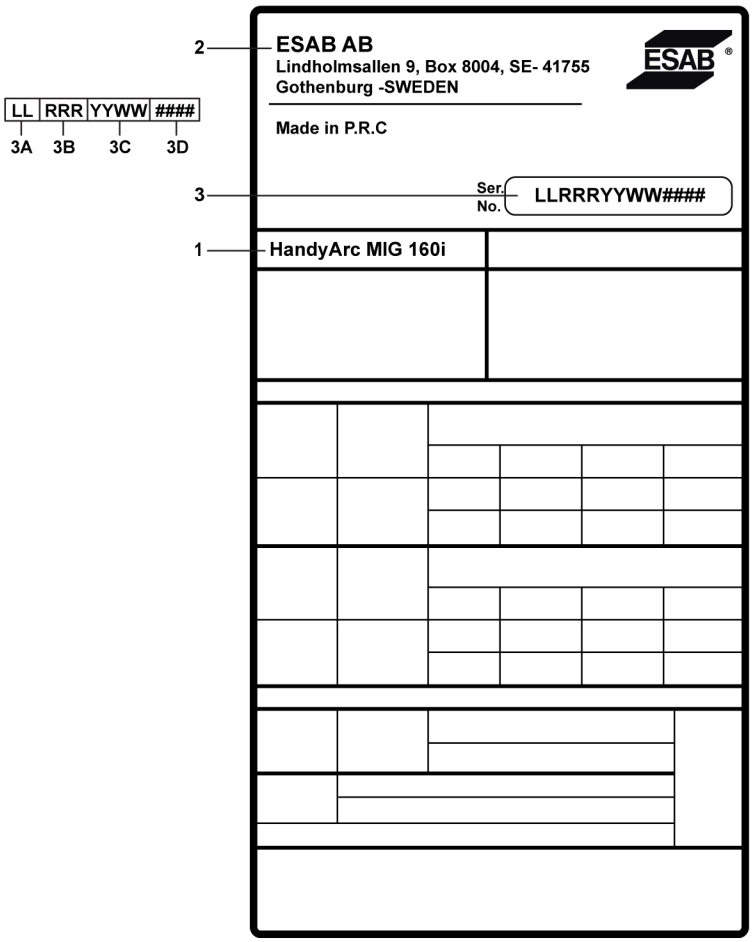
The equipment has been designed in order to be compliant with the Directive 2009/125/EC and the Regulation 2019/1784/EU.

Efficiency and idle power consumption:

Name	Idle power	Efficiency when max power consumption
HandyArc MIG 160i	20 W	84%

The value of efficiency and consumption in idle state have been measured by method and conditions defined in the product standard EN 60974-1:2012.

Manufacturer’s name, product name, serial number, and date of production can be read from rating plate.



1. Product name
2. Manufacturer's name and address
3. Serial number
   3A. Manufacturing location code
   3B. Revision level (last digit of year and week number)
   3C. Year & week produced (last two digits of year and week number)
   3D. Sequential number system (each week starts with 0001)

4 INSTALLATION

The installation must be carried out by a professional.

CAUTION!
This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the user's responsibility to take adequate precautions.

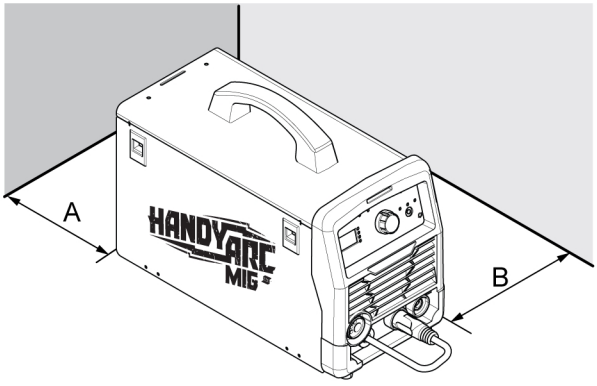
CAUTION!
Remove any packaging material prior to use. Do not block the air vents at the front or rear of the welding power source.

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

4.1 Location

Position the power source according to the following guidelines:

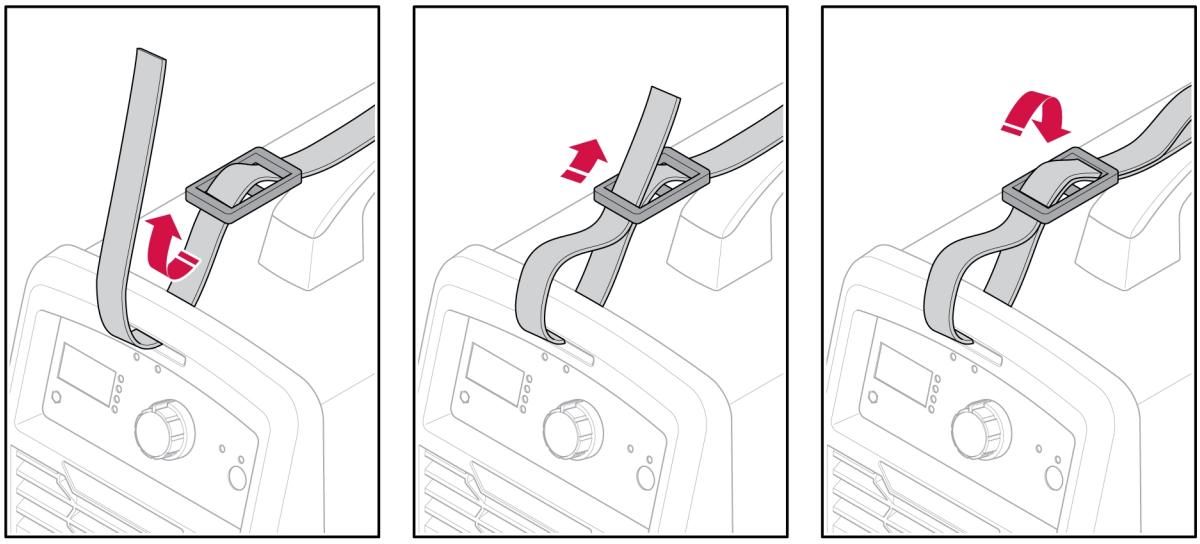
- In areas free from moisture and dust.
- Ambient temperature between -10° C to 40° C.
- In areas free from oil, steam, and corrosive gases.
- In areas not subjected to abnormal vibration or shock.
- In areas not exposed to direct sunlight or rain.
- Placed at a distance of 300 mm or more from walls or similar that could restrict natural air flow for cooling.



A. Minimum 8 in. (200 mm)

B. Minimum 8 in. (200 mm)

4.2 Assembling the shoulder strap

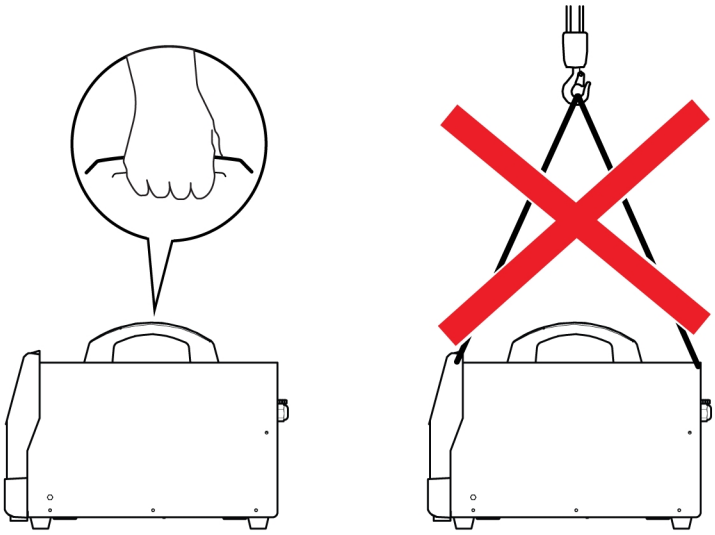


A black nylon shoulder strap is supplied with the power source. The strap is designed to be fitted into the sheet metal slot at the rear of the power source and through the plastic horizontal slot in the front panel housing.

1) Keep the buckle on the nylon strap in the upward facing direction.
2) Feed the strap through the rear of the plastic front panel housing by approximately 250 mm.
3) Pull the strap towards the rear of the power source in line with the plastic buckle.
4) Whilst holding the back of the plastic buckle, position the buckle so the nylon strap falls away from the front slotted hole on the buckle. This allows you to feed the nylon strap up through the front slotted hole, over the top of the other nylon strap, and up and out of the slot.
5) Pull the nylon strap approximately 70 mm out through the buckle front slot.
6) Position the rear slotted hole on the buckle into the vertical position, which allows the nylon strap to be pushed through the rear slotted hole on the buckle.
7) Pull the strap through the slot in the direction towards the rear of the power source, leaving 30-40 mm of strap hanging out.

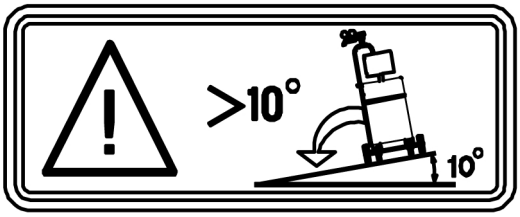
4.3 Lifting instructions

The unit is equipped with a handle for carrying purposes.



- Lift unit with handle on top of case.
- Use handcart or similar device of adequate capacity.
- If using a fork lift, place and secure unit on a proper skid before transporting.

WARNING!
Secure the equipment - particularly if the ground is uneven or sloping.



4.4 Mains supply

The mains supply voltage should be 230V +/- 10%. Too low of supply voltage may cause poor welding performance. Too high of welding supply voltage will cause components to overheat and possibly fail.

WARNING!
Contact the local electric utility for information about the type of electrical service available, how proper connections should be made, and inspection required.

The power source must be:

- Correctly installed by a qualified electrician.
- Correctly earthed (electrically) in accordance with local regulations.
- Connected to the correct size power point and fuse according to "Recommended fuse and cable sizes" chapter.

4.5 Recommended fuse and cable sizes

WARNING!
An electrical shock or fire hazard is probable if the following electrical service guide recommendations are not followed. These recommendations are for a dedicated branch circuit sized for the rated output and duty cycle of the welding power source

	230 V, 1 ~ 50/60 Hz
Supply voltage	**230 V AC**
Input current at maximum output	23 A
Maximum recommended fuse* or circuit breaker rating * Time delay fuse	25 A
Maximum recommended fuse of circuit breaker rating	32.0 A
Minimum recommended cord size	2.5 mm^2 (14 AWG)
Maximum recommended extension cord length	100 m (325 ft)
Minimum recommended grounding conductor size	2.5 mm^2 (14 AWG)

4.6 Supply from power generators

The power source can be supplied from different types of generators. However, some generators may not provide sufficient power for the welding power source to operate correctly.

Generators with Automatic Voltage Regulation (AVR) or with equivalent or better type of regulation, with rated power 7 kW, are recommended.

5 OPERATION

General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!

WARNING!
Electric shock! Do not touch the workpiece or the welding head during operation!

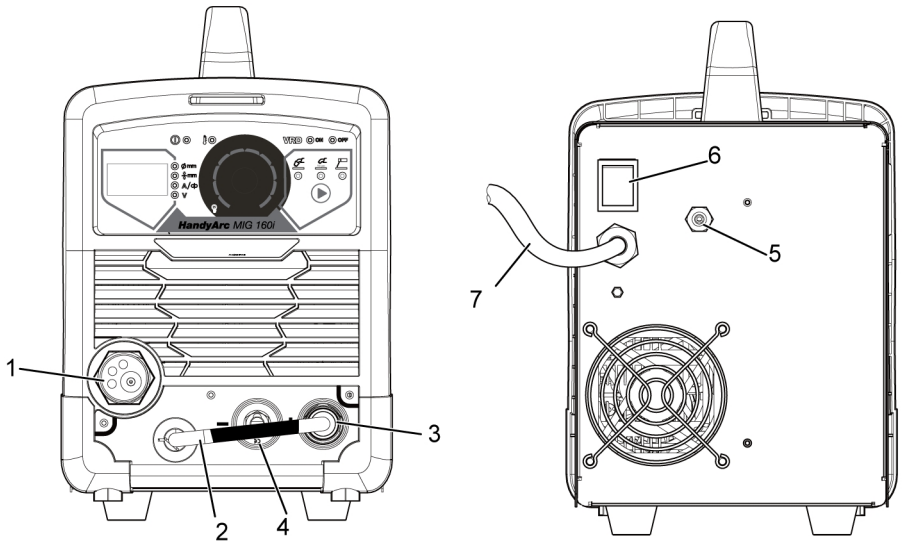
WARNING!
Assure that the side panels are closed during operation.

WARNING!
Tighten the bobbin locking nut in order to prevent it from sliding off the hub.

WARNING!
Rotating parts can cause injury, take great care.

NOTE!
When moving the equipment use intended handle. Never pull the cables.

5.1 Connections



1. MIG / MAG / GMAW / FCAW torch central connector, Euro Style
2. Polarity changeover cable
3. Electrode positive terminal (+)
4. Electrode negative terminal (-)
5. Gas inlet
6. Mains supply switch, ON/OFF
7. Mains supply cable

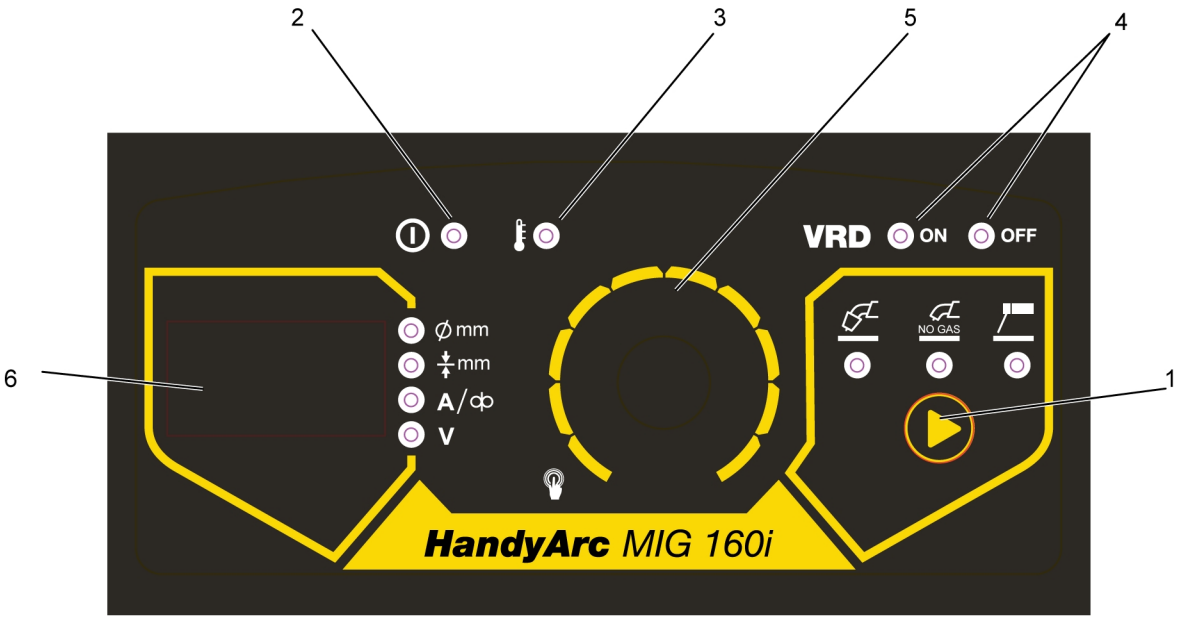
Gas inlet
The gas inlet connection is a quick connect type inlet fitting located on the rear of the power source which is used to supply the appropriate MIG / MAG / GMAW welding gas to the unit.

WARNING!
Only inert shielding gases specifically designed for welding applications should be used.

On/Off switch
This switch is used to turn the unit on/off. When this switch is turned to ON, the power indicator on the front panel illuminates.

NOTE!
If the power source is repeatedly switched on and off rapidly, or the supply to the power source is turned on and then off rapidly, the power source may not turn on due to inbuilt protective devices acting. If this occurs, leave the power source turned off for several minutes to allow for the protective devices to reset.

5.2 User interface



1. Process selection control
2. Power ON indication LED
3. Over temp indicator
4. VRD On/Off indicator lights (MMA / SMAW / Stick mode only)
5. Push-button encoder
6. Digital meter

Process selection control
The process selection control is used to select the desired welding mode. Three modes are available, MIG / MAG / GMAW, FCAW and MMA / SMAW / Stick.

NOTE!
When the unit is powered off in MMA / SMAW / Stick mode, the mode selection control will automatically default to FCAW. When you turn the power source on it will start up in FCAW mode. It will be required to select the MMA / SMAW / Stick mode again if desired.

Power ON indication LED
The power ON indication LED is illuminated when mains power is applied to the power source and mains supply switch is in the ON position.

Over temp indicator
The over temp indicator illuminates and the error E01 is displayed when the power source has over heated which occurs when the duty cycle of the power source has been exceeded. If the over temp indicator illuminates, the output of the power source is disabled. Leave the power source turned on to allow the internal components to cool down.

NOTE!
The on/off switch should remain in the ON position such that the fan continues to operate thus allowing the power source to cool sufficiently. Do not switch the power source off if an over temp condition is present.

VRD ON/OFF indicator lights (only for MMA / SMAW / Stick Mode)
A VRD (voltage reduction device) is a hazard reducing device designed to reduce electric shock hazards present on the output of welding power source when operating in MMA / SMAW / Stick mode.

The green VRD ON light illuminates when the VRD is active, the red VRD OFF light illuminates when VRD is disabled. Under this condition, the open circuit voltage of the unit is limited to below 35 V DC, thus reducing the potential of serious electric shock.

The red VRD OFF light illuminates when the VRD is disabled during welding. Under this condition the output voltage of the unit is at welding potential may exceed 35 V DC.

Push-button encoder
HandyArc MIG 160i is equipped with the quick set feature allowing the user to select the welding process, wire diameter, material thickness. The predetermined welding parameters are set and the unit is ready to weld. With additional pressing of the push-button encoder, the user can manually set wire feed speed and voltage as desired.

Turn the push-button encoder to the desired parameter; press the push-button encoder to select and make the adjustment.

Turn the push-button encoder slowly for fine adjustment and rapidly for course adjustments.

Wire Feed Speed (WFS) function

If the welding current is too high or too low, adjust the wire feed speed to the desired value.

Voltage function (Volts)

Voltage function has two options, preview voltage and voltage trim. To trim the voltage, press the control knob for three seconds to enter the trim option and make the adjustment.

The display shows 0.0 when in the factory quick set value for the selected wire and plate thickness. To return to the factory parameters if the value has been changed, set the voltage trim to 0.0.

For example, if the pre-set voltage is 15 V and in voltage trim mode and is changed to -2.0, the pre-set voltage will now be 13 V. If the voltage trim mode and is changed to 4.0, the Pre-set Voltage will be 19 V.

Digital meter
MIG / MAG / GMAW / FCAW mode

In MIG / MAG / GMAW / FCAW mode, the digital meter displays the wire (symbol) diameter, material plate thickness, pre-set wire feed speed (MPM), pre-set voltage, voltage trim setting in MIG / MAG / GMAW / FCAW mode and actual welding amperage while welding.

At the completion of welding, the digital meter will hold the last recorded amperage value for approximately ten seconds.

MMA / SMAW / Stick mode

In MMA / SMAW / Stick mode, the digital meter displays the pre-set amperage and actual welding amperage while welding. When not welding, the amperage meter displays a pre-set amperage value. This value can be adjusted by turning the push-button encoder.

At the completion of welding, the digital meter holds the last recorded amperage value for approximately ten seconds.

NOTE!
The pre-set functionality provided is intended to act as a guide only. Some differences may be observed between pre-set values and actual welding values due to factors including the mode of welding, differences in consumables/gas mixtures, individual welding techniques and the arc transfer mode.

Restore factory default settings
Press and hold the push-button encoder and process selection control button at the same time for three seconds. The LED Digital meter flashes three times displaying “- - -” to indicate a factory reset has been completed.

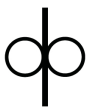
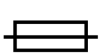
Hot start (not adjustable)
Controls the amount of additional amperage at arc initiation to prevent the electrode from sticking to the work piece and preventing a cold start at the beginning of the weld.

Anti stick (not adjustable)
This feature operates in MMA / SMAW / Stick mode. The anti stick feature senses when the electrode sticks and automatically reduces the current to prevent the stick electrode from sticking to the work piece.

Arc force (not adjustable)
This feature operates in MMA / SMAW / Stick mode. This feature controls the amount of additional amperage when in short arc length condition.

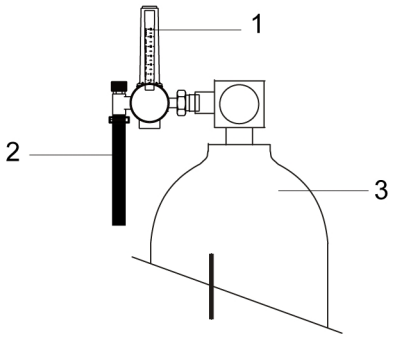
5.3 Symbols

NOTE!
Not all symbols will appear on your model.

	On		Single phase		Wire feed function
	Off		Three phase		Wire feed towards workpiece with output voltage off.
	Dangerous voltage		Three phase static frequency Converter-Transformer-Rectifier		Welding torch
	Increase/Decrease		Remote		Purging of gas
	Circuit breaker		Duty cycle		Continuous weld mode
	AC Auxiliary power		Percentage		Spot weld mode
	Fuse		Panel/Local		Spot time
	Amperage		Shielded Metal Arc Welding (SMAW)		Preflow time

V	Voltage		Gas Metal Arc Welding (GMAW)	t2	Postflow time
Hz	Hertz (cycles/sec)		Gas Tungsten Arc Welding (GTAW)	CONTROL	Quick set plate thickness pre-sets
f	Frequency		Air Carbon Arc Cutting (CAC-A)	115V 15A	Receptacle rating- Auxiliary power
—	Negative		Constant current	V	Voltage input
+	Positive		Constant voltage or constant potential	t	Burnback time
⎓	Direct Current (DC)		High temperature		Disturbance in ground system
	Protective earth (ground)		Fault indication	IPM	Inches per minute
	Line		Arc force	MPM	Metres per minute
	Line connection		Touch start (GTAW)		Spool torch
	Auxiliary power		Variable inductance		

5.4 Connecting the regulator/flow gauge to cylinder



1. Regulator/flow gauge
2. Gas hose
3. Cylinder

For MIG / MAG / GMAW welding, see the following instructions. For other types of welding, follow the instructions in "Attaching the MIG / MAG / GMAW / FCAW torch to the central adapter" chapter.

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.

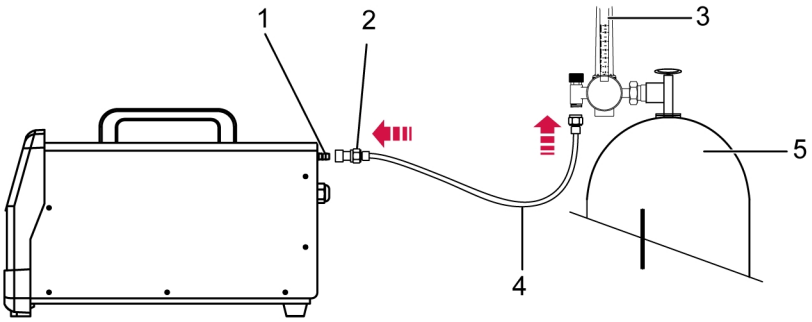
   With the outlet pointing away from people and sources of ignition, crack the valve (open then close) momentarily. Wipe with clean lint free cloth.

2) Match regulator to cylinder. Before connecting, check that the regulator label and cylinder marking agree and that the regulator inlet and cylinder outlet match. **Never** connect a regulator designed for a particular gas or gases to a cylinder containing any other gas.

3) Connect the regulator inlet connection to cylinder or pipeline and tighten it firmly but not excessively, with a suitable spanner. The regulator must be in the vertical position to read accurately.

4) Connect and tighten the outlet hose firmly and attach the hose to the power source with quick connect fitting. Ensure no gas leakage.

5.5 Connecting the shielding gas regulator to the power source



1. Gas inlet fitting
2. Quick connect fitting
3. Regulator/flow gauge
4. Gas hose
5. Cylinder

The shielding gas regulator/flow gauge must be connected to a cylinder according to instructions.

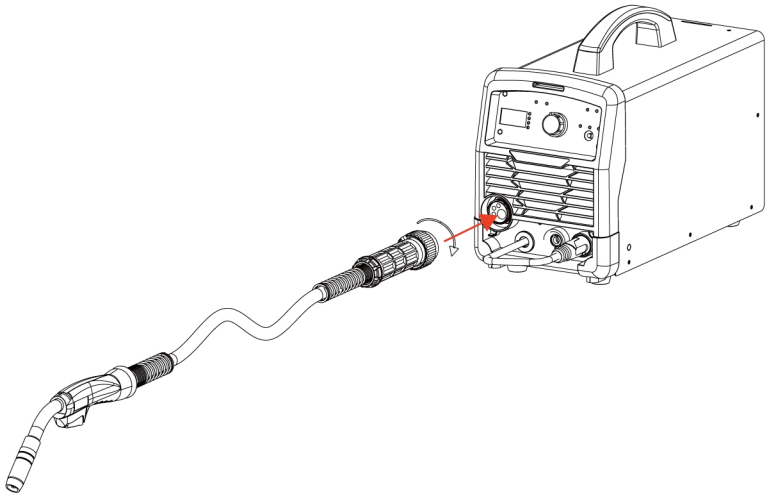
1) Connect the gas hose to gas inlet fitting on the rear panel of the power source quick connect fitting.

2) Check for any leaks with soapy water in a squeeze bottle, and look for bubbles (when the gas is on), this will highlight any gas leaks.

The gas flow, LPM (litres per minute), for shielding the molten weld metal from the atmosphere is adjustable and depends on the job and surrounding area you encounter when welding. As a general rule for MIG / MAG / GMAW welding, always use a minimum of 12 LPM when welding with an amperage range of under 100 Amps, a min. of 15 LPM when the amperage is under 180 Amps and a minimum of 18 LPM for welding amperages over 200 Amps. A low gas flow will affect the welding quality and cause a porous weld while high gas flow results in higher consumption of gas.

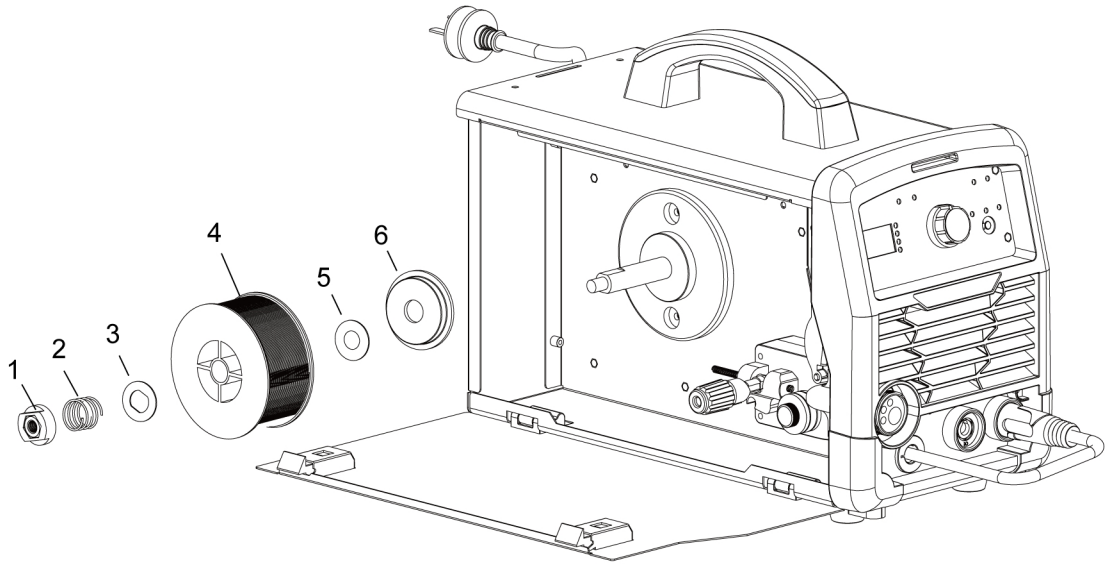
The flow rate is measured at the middle of the float ball.

5.6 Attaching the MIG / MAG / GMAW / FCAW torch to the central adapter



1) Check that the wire guide liner is fitted correctly.
2) Insert the central plug into the mating socket on the power supply and tighten the adapter nut firmly to secure it.
3) Ensure the central adapter and mating socket are connected properly by pulling on the torch coaxial cable. Movement should not be possible.

5.7 Installing the 100 mm wire spool



1. Nut
2. Spring
3. Washer
4. 100 mm spool
5. Washer
6. Spacer

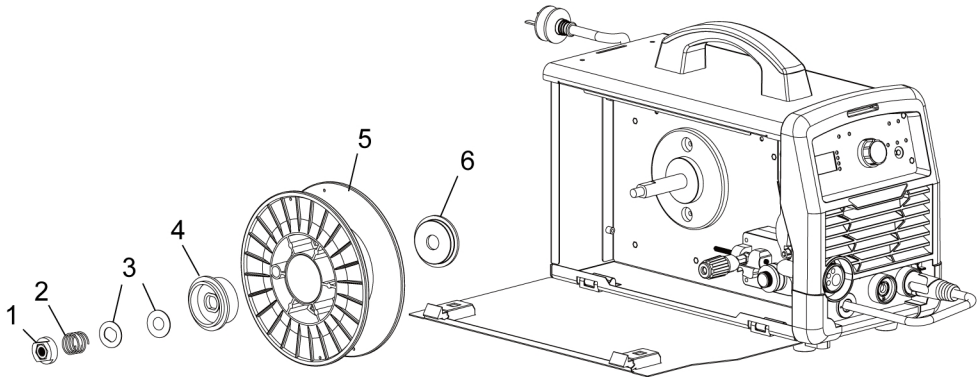
As delivered from the factory, the unit is fitted with a wire spool hub which accepts a 200 mm diameter spool.

1) Assemble the parts in the sequence shown in previous image.

2) Rotate the nut clockwise to tighten the MIG / MAG / GMAW / FCAW wire spool brake. The brake is correctly adjusted when the spool stops within 10 to 20 mm (measured at the outer edge of the spool) after MIG / MAG / GMAW / FCAW torch trigger is released.

Wire should be slack without unwinding from the spool.

5.8 Installing a 200 mm wire spool



1. Nut
2. Spring
3. Washer
4. Spacer
5. 200 mm spool
6. Spacer

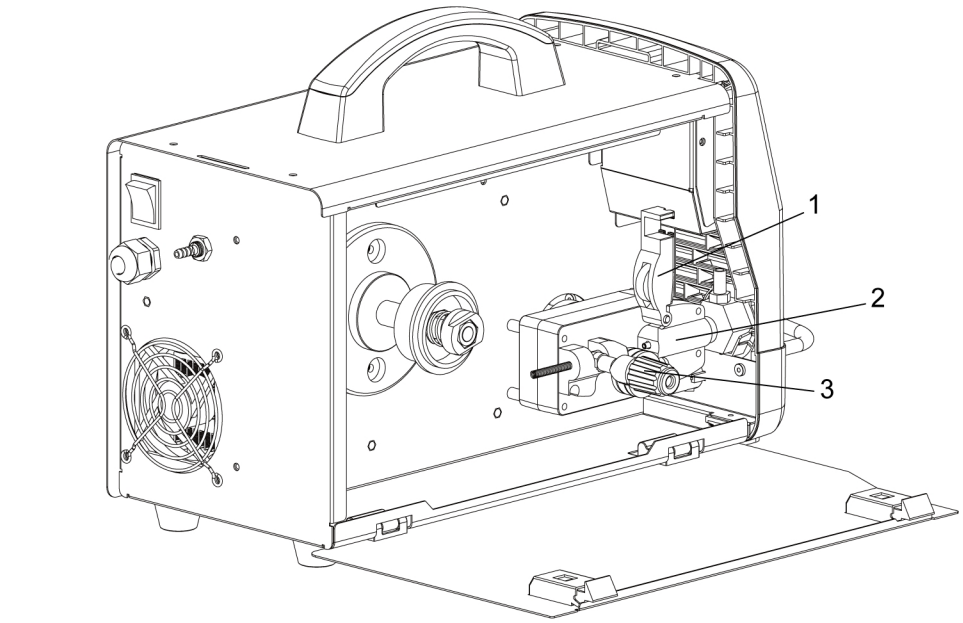
As delivered from the factory, the unit is fitted with a wire spool hub which accepts a 200 mm diameter spool.

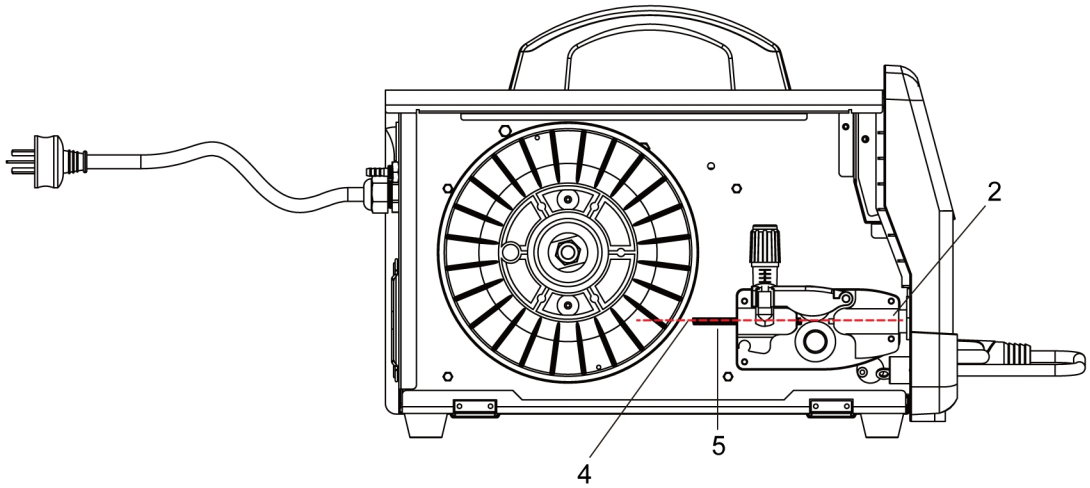
1) Assemble the parts in the sequence shown in previous image.

2) Rotate the nut clockwise to tighten the MIG / MAG / GMAW / FCAW wire spool brake. The brake is correctly adjusted when the spool stops within 10 to 20 mm (measured at the outer edge of the spool) after MIG / MAG / GMAW / FCAW torch trigger is released.

Wire should be slack without unwinding from the spool.

5.9 Inserting and replacing wire





1. Pressure roller arm
2. Outlet guide
3. Wire drive tension knob
4. MIG / MAG / GMAW / FCAW welding wire
5. Inlet guide

WARNING!
Do not place or point the torch near the face, hand or body as this may result in personal injury.

WARNING!
Make sure that the power is turned off, before replacing or installing any parts.

WARNING!
Risk of crushing when replacing the wire bobbin! Do not use safety gloves when inserting the welding wire between the feed rollers.

1) Open the spool side door.

2) Release the pressure roller arm (1) by levering the wire drive tension knob (3).

3) Lift the pressure roller arm (1).

4) With the MIG / MAG / GMAW / FCAW welding wire feeding from the bottom of the spool, pass the electrode wire through the inlet guide (5), between the rollers, through the outlet guide and into the MIG / MAG / GMAW / FCAW torch. Ensure that the wire is aligned with the correct groove in the drive roll.

5) Re-secure the pressure roller arm and wire drive tension screw and adjust the pressure if necessary.

6) With the MIG / MAG / GMAW / FCAW torch lead reasonably straight, feed the wire through the MIG / MAG / GMAW / FCAW torch by pressing the wire inch button or trigger switch.

7) Close the spool side door.

5.10 Setting the wire feed pressure

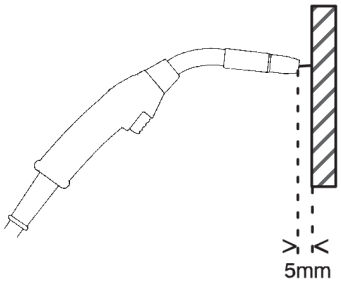


Illustration A

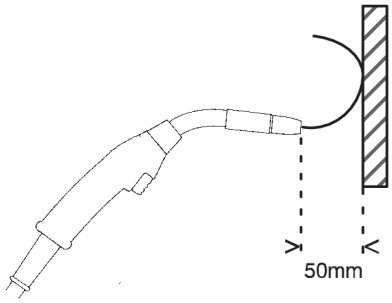


Illustration B

CAUTION!
Overtension of the brake will cause rapid wear of mechanical wire feeder parts, overheating of electrical components and possibly more incidences of contact tip burnback.

1) Make sure that the wire moves smoothly through the wire guide.

2) Set the pressure of the wire feeder's pressure rollers. It is important that the pressure is not too high.

3) To check that the feed pressure is set correctly, feed out the wire against an insulated object, e.g. a piece of wood.

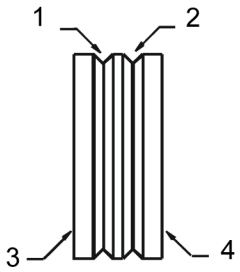
   When you hold the welding torch approximately 5 mm (0.2 in.) from the piece of wood (illustration A), the feed rollers should slip.

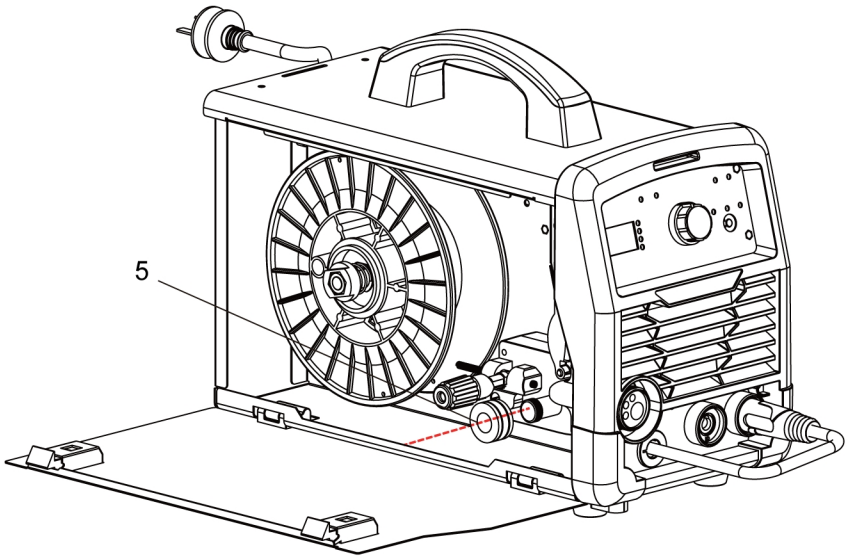
   If you hold the welding torch approximately 50 mm (2 in.) from the piece of wood, the wire should be fed out and bend (Illustration B).

4) The wire reel hub incorporates a friction brake which is adjusted during manufacture for optimum braking. If it is considered necessary, adjustment can be made by turning the thumb screw inside the open end of the hub clockwise to tighten the brake.

   Correct adjustment will result in the wire reel circumference continuing no further than 1/8 in.-3/16 in. (3-5 mm) after release of the trigger. The electrode wire should be slack without becoming dislodged from wire spool.

5.11 Changing the feed roll





1. Groove "A"
2. Groove "B"
3. Groove "B" size
4. Groove "A" size
5. Feed roll

A dual groove feed roll is fitted as standard. It can accommodate 0.8/0.9 mm gasless flux cored wires. Markings are indicated on the side edge of the feed roll, for example 0.8/0.030, 0.9/0.035.

1) Open the spool side door.

2) Release the pressure roller arm by levering the tension screw.

3) Lift the pressure roller arm.

4) Remove the feed roll retaining screw by turning it counterclockwise.

5) Change the feed roll.

6) Tighten the feed roll retaining screw by turning it clockwise.

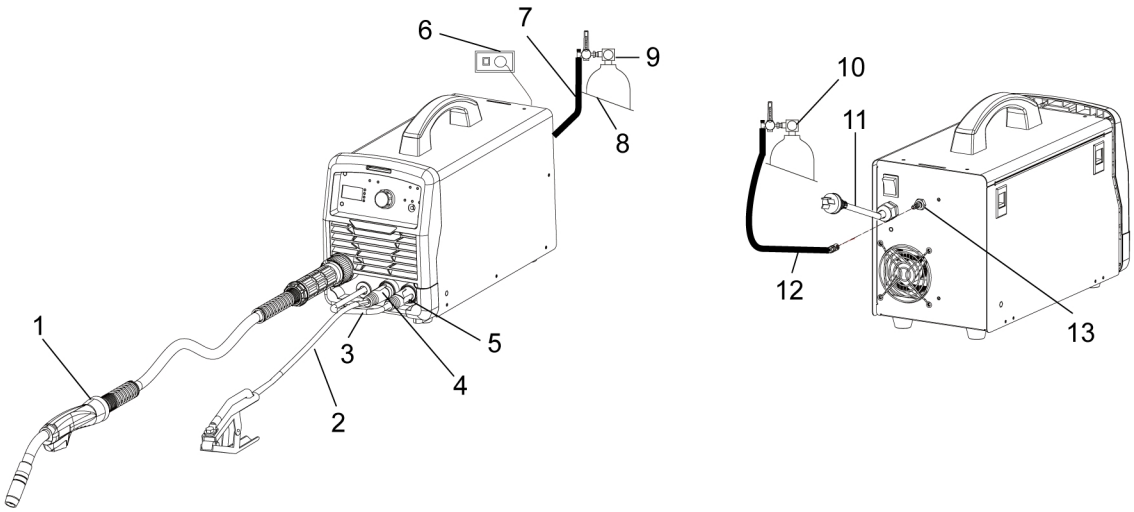
7) Secure the pressure roller arm and wire drive tension screw.

NOTE!
Visual indication on the face of the drive roll indicates the diameter of the groove on the outside of the drive roll and the groove that is in use for the selected wire diameter.

6 WELD PROCESS

6.1 Setting up

6.1.1 Setting up for MIG / MAG / GMAW welding with gas shielded wire



1. MIG / MAG / GMAW torch
2. Work lead
3. MIG / MAG / GMAW polarity lead
4. Negative welding terminal (-)
5. Positive welding terminal (+)
6. Mains supply
7. Gas hose
8. Shielding gas cylinder
9. Argon or mixed gas regulator
10. Argon or mixed gas regulator
11. Supply input lead
12. Shielding gas hose
13. Gas inlet connection

NOTE!
Due to the higher wire feed speed required to run ALU wire successfully it must be run in the 0.6 mm wire diameter, MIG / MAG / GMAW gas mode.

1) Ensure that the power source is turned off.

2) Fit the MIG / MAG / GMAW torch to the power source.

3) Connect the MIG / MAG / GMAW torch polarity lead to the positive welding terminal (+). Welding current flows from the power source via dinse terminals. It is essential, that the male dinse plug is inserted and turned securely.

4) Fit the correct feed roll for the wire diameter being used.

5) Place the MIG / MAG / GMAW wire spool onto the spool hub.

6) Turn on the power source. Ensure the power indicator on the front panel is illuminated.

7) Select MIG / MAG / GMAW gas (Solid) mode using the Process Selection control button.

8) Feed wire through the wire drive mechanism.

9) Connect the work lead to the negative welding terminal (-). Welding current flows from the power source via dinse terminals. It is essential, that the male plug is inserted and turned securely to achieve a sound electrical connection.

10) Fit the welding grade shielding gas regulator to the shielding gas cylinder. Ensure that the shielding gas hose connection is sufficiently tight at the regulator connection.

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

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

CAUTION!
Remove any packaging material prior to use. Do not block the air vents at the front or rear of the welding power source.

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

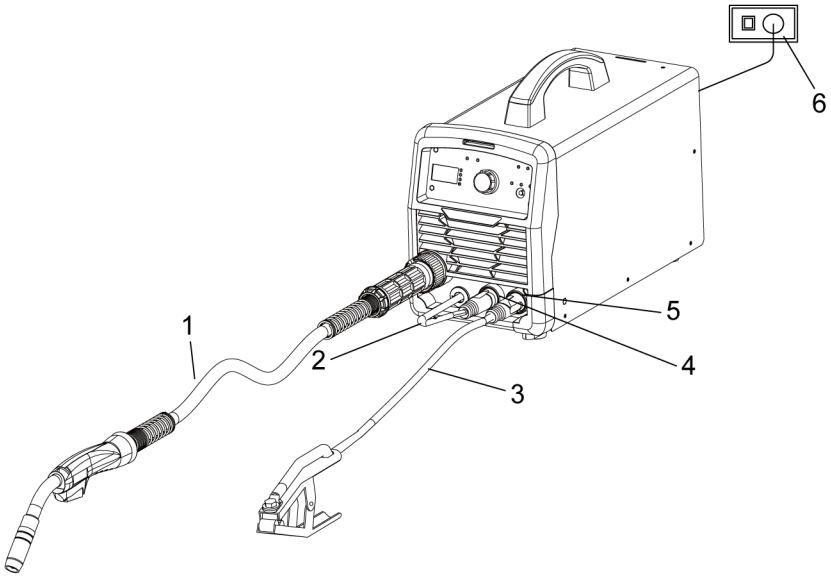
NOTE!
As a guide for the welding parameter settings for the welding job, refer to the Weld Guide located on the inside of the wirefeed compartment door. Power source settings are adjusted using the front panel controls.

NOTE!
For some wires, it is recommended to use negative polarity such as self-shielded flux-core. See wire manufacturers recommendation.

If the user wishes to adjust the quick set settings outside of the factory settings, refer to Section 5.1 "Connections", page 15. The following settings are available:

- Wire feed speed control (WFS / AMPS) adjustment
- Volts function (Volts)
- Preview voltage
- Volts trim
- Restoring factory weld settings

6.1.2 Setting up for FCAW welding with gasless FCAW wire



1. FCAW torch
2. FCAW polarity lead
3. Work lead
4. Negative welding terminal (-)
5. Positive welding terminal (+)
6. Mains supply

1) Ensure that the power source is turned off.

2) Fit the FCAW torch to the power source.

3) Connect the MIG / MAG / FCAW torch polarity lead to the negative welding terminal (-). Welding current flows from the power source via dinse terminals. It is essential, that the male dinse plug is inserted and turned securely.

4) Fit the correct feed roll for the gasless FCAW wire being used.

5) Place the FCAW wire spool onto the spool hub.

6) Turn on the power source. Ensure the power indicator on the front panel is illuminated.

7) Select FCAW gasless mode using the process selection control button.

8) Feed wire through the wire drive mechanism.

9) Connect the work lead to the positive welding terminal (+). Welding current flows from the power source via dinse terminals. It is essential, that the male plug is inserted and turned securely.

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

CAUTION!
Remove any packaging material prior to use. Do not block the air vents at the front or rear of the welding power source.

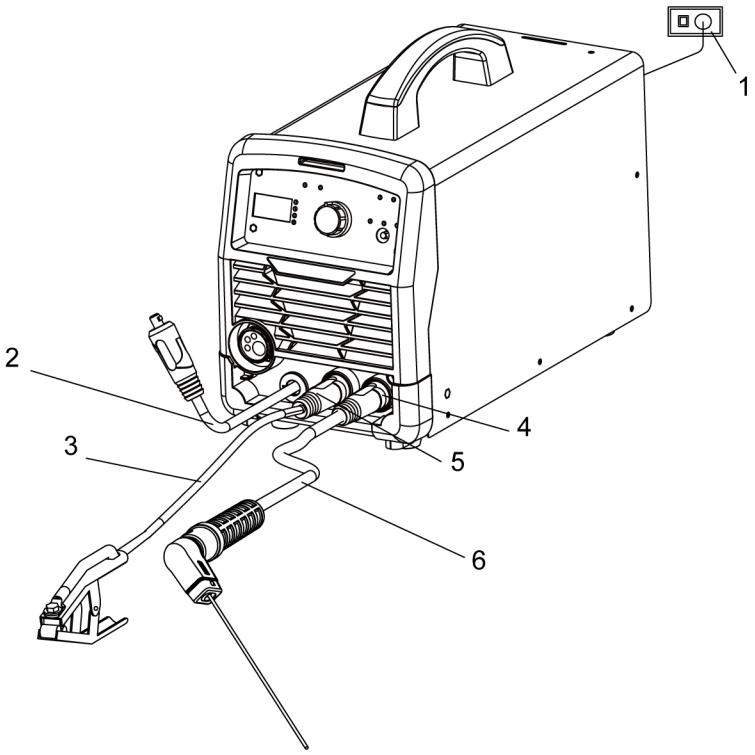
Loose welding terminal connections can cause overheating and result in the male plug being fused in the terminal.

NOTE!
For some wires, it is recommended to use negative polarity such as self-shielded flux-core. See wire manufacturers recommendation.

If the user wishes to adjust the quick set settings outside of the factory settings, refer to Section 5.1 "Connections", page 15. The following settings are available:

- Wire feed speed control (WFS / AMPS) adjustment
- Volts function (Volts)
- Preview voltage
- Volts trim
- Restoring factory weld settings

6.1.3 Setting up for MMA / SMAW / Stick welding



1. Mains supply
2. Polarity lead (not connected)
3. Work lead
4. Positive welding terminal (+)
5. Negative welding terminal (-)
6. Electrode holder lead

1) Ensure that the power source is turned off.

2) Connect the electrode holder lead to the positive welding terminal (+). Welding current flows from the power source via dinse type terminals. It is essential, that the male plug is inserted and turned securely.

3) Connect the work lead to the negative welding terminal (-). Welding current flows from the power source via dinse type terminals. It is essential, that the male plug is inserted and turned securely.

4) Select MMA / SMAW / Stick mode with the Process Selection control button.

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

CAUTION!
Remove any packaging material prior to use. Do not block the air vents at the front or rear of the welding power source.

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

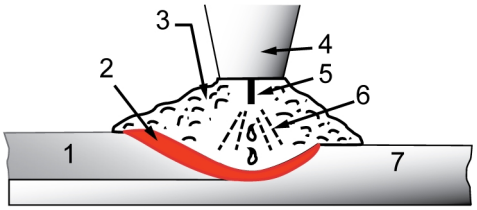
NOTE!
Consult the electrode manufacturer's information for the correct polarity

6.2 MIG / MAG / GMAW / FCAW welding

6.2.1 Welding technique

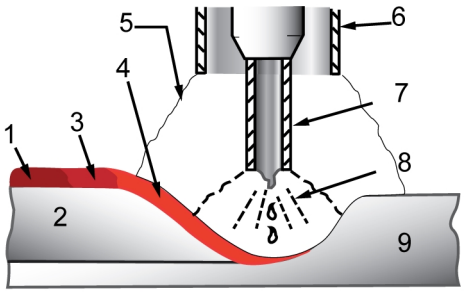
Two different welding processes are covered in this section (MIG / MAG / GMAW and FCAW), with the intention of providing the basic concepts in using this mode of welding, where a welding torch is hand held, the electrode (welding wire) is fed into a weld puddle, and the arc is shielded by an inert shielding gas, inner shielding gas mixture or the arc is shielded by the flux as part of the FCAW welding wire.

Gas metal arc welding (MIG / MAG / GMAW)
This process, also known as CO_2 welding, micro wire welding, short arc welding, dip transfer welding, wire welding etc., is an electric arc welding process which fuses the parts to be welded by heating them with an arc between a solid continuous, consumable electrode and the work. Shielding is achieved from an externally supplied shielding gas or gas mixture.



1. Solidified weld metal
2. Molten weld metal
3. Shielding gas
4. Nozzle
5. Electrode
6. Weld metal transfer
7. Base metal

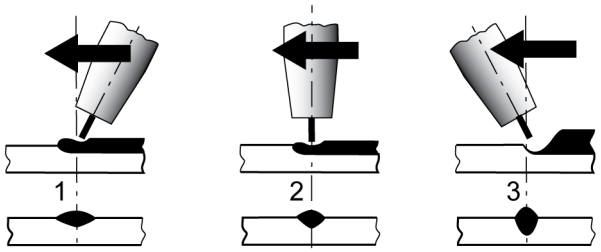
Flux cored arc welding (FCAW)
This is an electric arc welding process which fuses the parts to be welded by heating them with an arc between a continuous flux filled electrode wire and the work. Shielding is obtained through decomposition of the flux within the tubular wire.



1. Slag
2. Solidified weld metal
3. Molten slag
4. Molten metal
5. Shielding gas (optional)
6. Nozzle (optional)
7. Flux cored electrode
8. Weld metal transfer
9. Base metal

Position of MIG / MAG / GMAW / FCAW torch

The angle of MIG / MAG / GMAW / FCAW torch to the weld has an effect on the width of the weld.



1. Push
2. Vertical
3. Drag/pull

The welding torch should be held at an angle to the weld joint and visible at all times (refer to Section 6.2.1.4 "Secondary adjustable variables", page 34).

The electrode wire is not energized until the torch trigger is pressed. The wire can be placed in seam as a guide or starting point.

Distance from the MIG / MAG / GMAW / FCAW torch nozzle to the work piece

The electrode wire stick out from the MIG / MAG / GMAW / FCAW torch nozzle should be between 10 mm to 20 mm. 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 weld.

MIG / MAG / GMAW welding variables

Preset variables
Preset variables depend upon the type of material being welded, the thickness of the material, the welding position. These variables are:

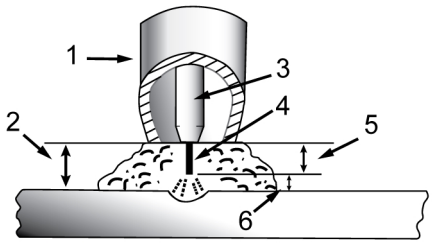
- Type of electrode wire
- Size of electrode wire
- Type of gas (not applicable to self shielding wires MIG / MAG / GMAW)
- Gas flow rate (not applicable to self shielding wires MIG / MAG / GMAW)

Primary adjustable variables
These control the process after preset variables have been selected. They control the penetration, bead width, bead height, arc stability, deposition rate. They are:

- Arc voltage
- Welding current (wire feed speed)
- 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:

- Stick-out (distance between the end of the contact tube (tip) and the end of the electrode wire). Maintain at about 10 mm stick-out.
- Wire feed speed. Increase in wire feed speed increases weld current, decrease in wire feed speed decreases weld current.

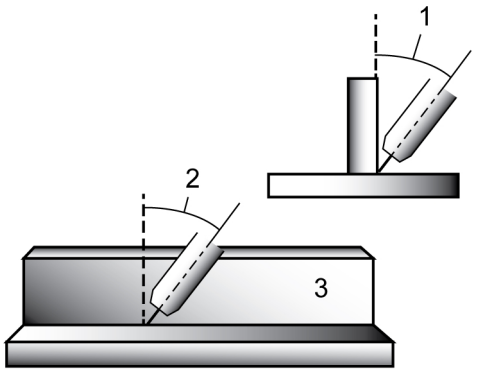


1. Gas nozzle
2. Tip to work distance
3. Contact tip
4. Electrode wire
5. Actual stick-out
6. Average arc length

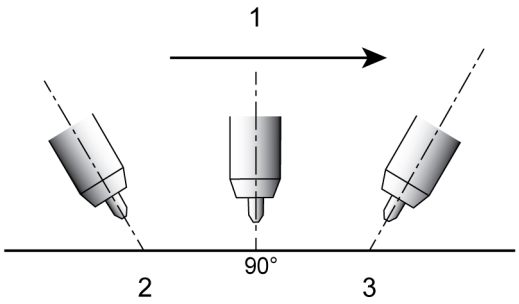
- Nozzle Angle. This refers to the position of the welding torch in relation to the joint.

  1. The transverse angle is usually one half the included angle between plates forming the joint.

  2. The longitudinal angle is the angle between the center 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).



1. Transverse angle
2. Longitudinal angle
3. Axis of weld



1. Direction of torch travel
2. Pushing angle
3. Pulling angle

6.3 MMA / SMAW / Stick welding

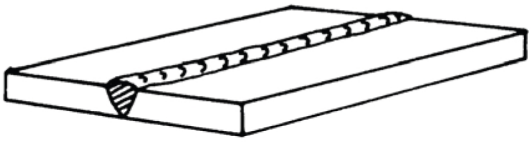
6.3.1 Arc welding practice

The techniques used for arc welding are almost identical regardless of what types of metals are being joined.

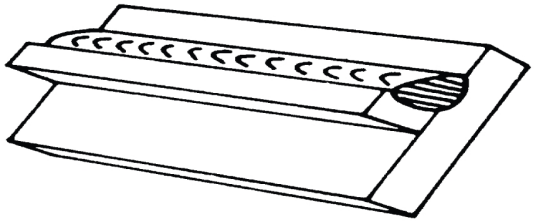
6.3.2 Welding position

Refer to the following images for some common types of welds.

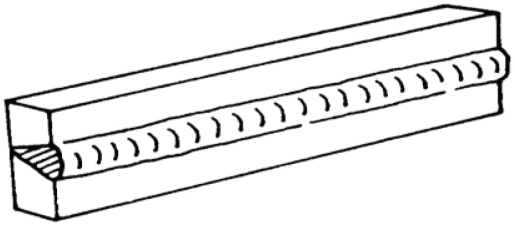
Flat position, down hand butt weld



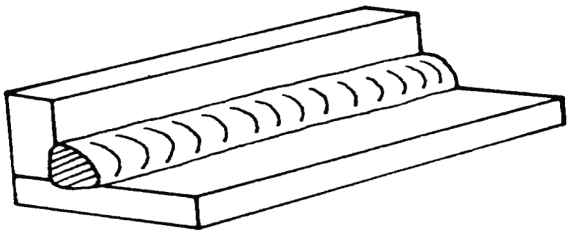
Flat position, gravity fillet weld



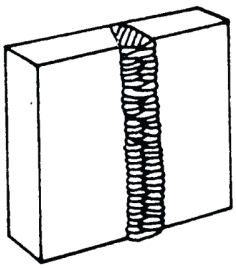
Horizontal position, butt weld



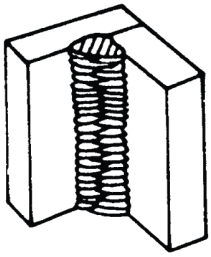
Horizontal - Vertical (HV) position



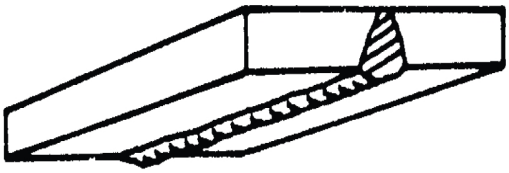
Vertical position, butt weld



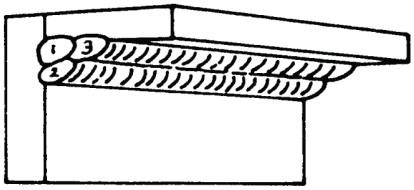
Vertical position, fillet weld



Overhead position, butt weld



Overhead position fillet, weld

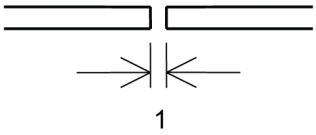


6.3.3 Joint preparations

It is possible to weld steel sections without any special preparation. For heavier sections and for repair work on castings, etc., it will be necessary to cut or grind an angle between the pieces being joined to ensure proper penetration of the weld metal and to produce sound joints.

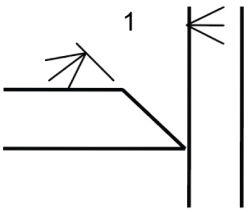
Surfaces being welded should be clean and free of rust, scale, dirt, grease, etc. Slag or dross should be removed from oxy-fuel cut or plasma cut surfaces. Refer to the following images for some typical joint designs.

Open square butt joint



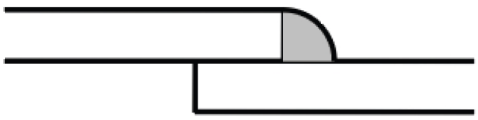
1. Gap varies from 1.6 mm to 4.8 mm depending on plate thickness.

Single vee butt joint

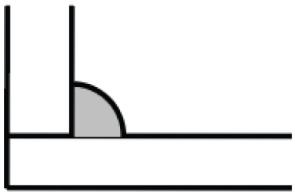


1. Not less than 45°

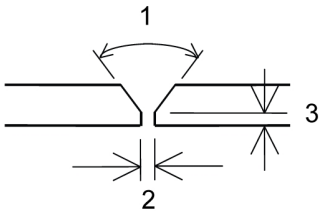
Lap joint



Fillet joint

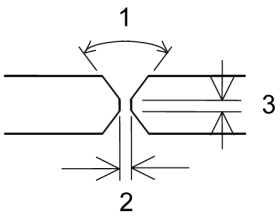


Single vee butt joint



1. Not less than 70°
2. 1.6 mm
3. 1.6 mm max

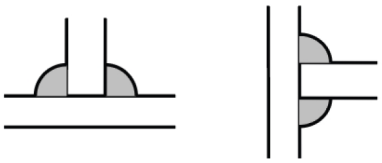
Double vee butt joint



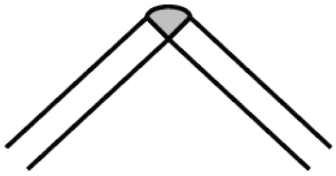
1. Not less than 70°
2. 1.6 mm
3. 1.6 mm max

Tee joints

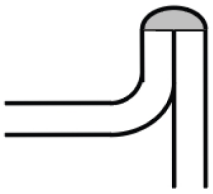
(fillet both sides of the joint)



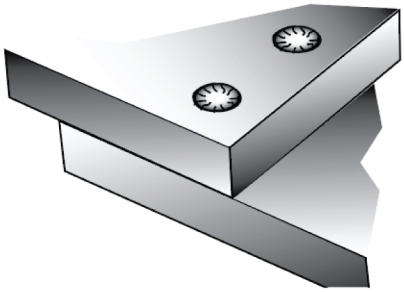
Corner weld



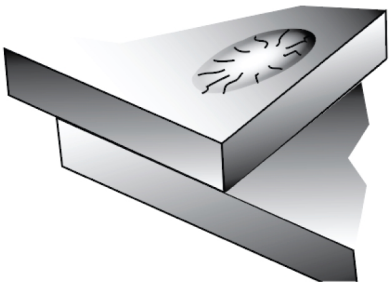
Edge joint



Plug weld



Plug weld



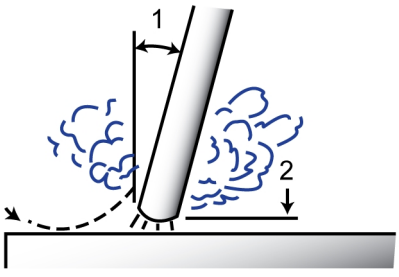
6.3.4 Welding technique

The simplest way to begin is to run beads on a piece of scrap plate. Use mild steel plate about 6.0 mm thick and a 3.2 mm electrode. Clean any paint, loose scale or grease from the plate. Make sure that the work clamp is making good electrical contact with the work.

Striking the arc

Practice striking the arc on a piece of scrap plate. You may experience difficulty due to the tip of the electrode sticking to the work piece. This is caused by making too heavy a contact with the work and failing to withdraw the electrode quick enough. A low amperage will accentuate this potential issue. Sticking the electrode may be overcome by scratching the electrode along the plate surface in the same way as a match is struck. As soon as the arc is established, maintain a 1.6 mm to 3.2 mm gap between the end of the electrode and the parent metal. Draw the electrode slowly along as it melts down.

Another difficulty you may meet is the tendency, after the arc is struck, to withdraw the electrode so far that the arc goes out.



1. 20°
2. 1.6 to 3.2 mm

Arc length

A long arc produces more heat. A very long arc produces a crackling or spluttering noise and the weld metal comes across in large, irregular blobs. The weld bead is flattened and spatter increases.

A short arc is essential if a high quality weld is to be obtained.

Rate of travel

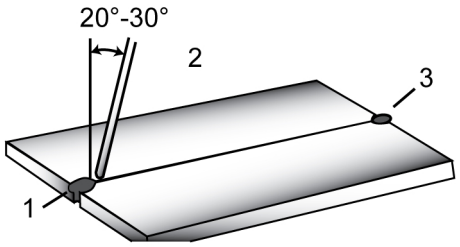
After the arc is struck, rate of travel needs to be maintained. This requires moving the electrode towards the molten pool at the same rate as it is melting away. At the same time, the electrode has to move along the weld joint. The rate of travel has to be adjusted so that a well-formed bead is produced.

If the travel is too fast, the bead will be narrow and be strung out and may even be broken up into individual globules. If the travel is too slow, the weld metal piles up and the bead will be too large.

Making welds

Butt welds

1) Set up two plates with their edges parallel, allowing 1.6 mm to 2.4 mm gap between them and tack weld at both ends. This is to prevent contraction from the cooling weld metal pulling the plates out of alignment.



1. Tack weld
2. Electrode
3. Tack weld

Plates thicker than 6.0 mm should have their mating edges bevelled to form a 70° to 90° included angle. This allows full penetration of the weld metal to the root.

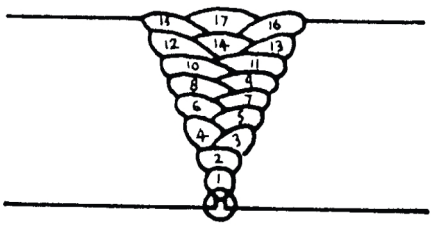
2) Do not weave the electrode, maintain a steady rate of travel along the joint to produce a well-formed bead.

At first you may notice a tendency for undercut, keeping the arc length short, the angle of the electrode at about 20° from vertical, and a steady travel speed, this will help eliminate the undercut. Move fast enough to prevent the slag pool from getting ahead of the arc.

3) To complete the joint on thin plate, turn the job over, clean the slag out of the back and deposit a similar weld.

4) Heavy plate will require several runs to complete the joint. After completing the first weld, chip the slag out and clean the weld with a wire brush. It is important to do this to prevent slag being trapped by the second weld.

5) Subsequent welds are then deposited using either a weave technique or single beads deposited in the sequence shown in the following image.



6) The width of weave should not be more than three times the core wire diameter of the electrode. When the joint is completely filled, the back is either machined, ground or gouged out to remove

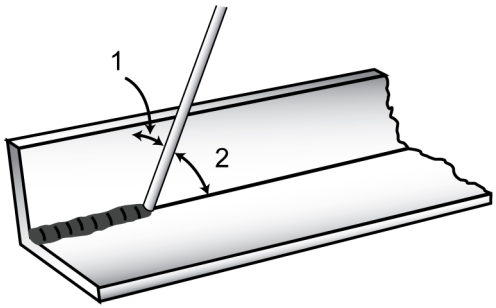
slag which may be trapped in the root, and to prepare a suitable joint for depositing the backing pass.

Fillet welds

1) These are welds of approximately triangular crosssection made by depositing metal in the corner of the faces meeting at right angles.

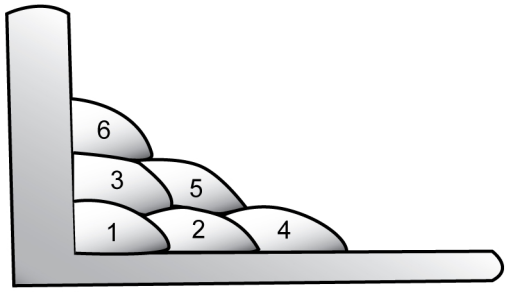
   A piece of angle iron is a suitable specimen to practice on, or two lengths of strip steel may be tacked together at right angles. Using a 3.2 mm electrode at 110 amps, position angle iron with one leg horizontal and the other vertical.

2) Strike the arc and immediately bring the electrode to a position perpendicular to the line of the fillet and about 45° from the vertical.



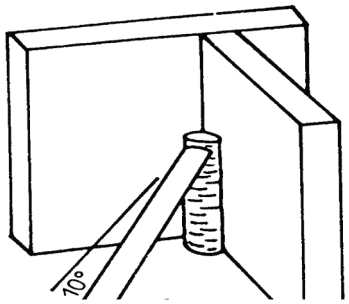
1. 45° from vertical
2. 20° from vertical

3) Multi-runs can be made as shown in the following image. Weaving in fillet welds is undesirable.



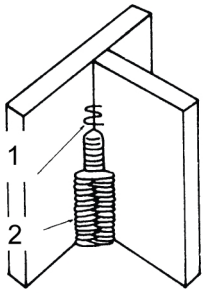
Vertical welds

1) **Vertical up**
   a) Tack a 500 mm angle iron or strip in the vertical position.
   b) Use a 3.2 mm electrode and set the current at 100 amps.
   c) Strike the arc in the corner of the fillet. The electrode should be about 10° from the horizontal to enable a good bead to be deposited.

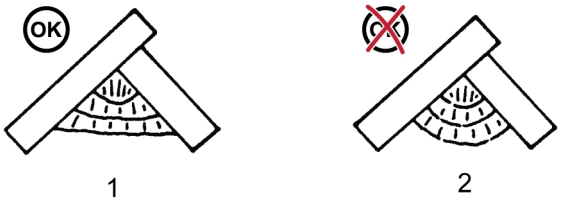


   Use a short arc length, and do not weave on the first pass.
   d) After the first run, remove the slag from the weld deposit and begin the second pass at the bottom. This time a slight weaving motion is necessary to cover the first run and obtain good fusion at the edges.

e) At the completion of each side motion, pause and allow weld metal to build up at the edges, otherwise undercut will form and too much metal will accumulate in the centre of the weld.



1. Weaving motion for second and subsequent passes
2. Pause at the edge of the weave



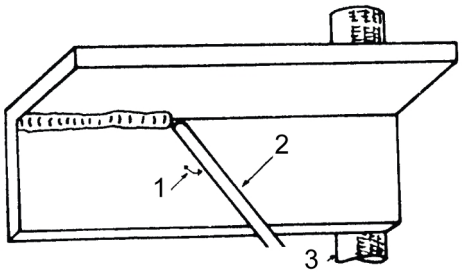
1. Pause at edge of weave allows weld metal to build up and eliminates undercut
2. Note weld contour when insufficient pause at edge of weave

2) **Vertical down**

a) The tip of the electrode is held in light contact with the work and the speed of downward travel is regulated so that the tip of the electrode just keeps ahead of the slag. The electrode should point upwards at an angle of about 45°.

3) **Overhead welds**

a) Overhead welding is not much more difficult than flat position welding.



1. 45° to plate
2. Tilted 10° in line of travel
3. Angle tacked to pipe

The tip of the electrode may be touched lightly on the metal, which helps to give a steady run. A weave technique is not advisable for overhead fillet welds.

b) Use a 3.2 mm electrode at 100 amps, and deposit the first pass by simply drawing the electrode along at a steady rate. You will notice that the weld deposit is rather convex, due to the effect of gravity before the metal freezes.

7 MAINTENANCE

WARNING!
The mains supply must be disconnected during cleaning and maintenance.

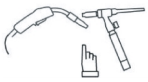
CAUTION!
The product is covered by manufacturer's warranty. Any attempt to carry out repair work by non-authorised service centers or personnel will invalidate the warranty.

NOTE!
Regular maintenance is important for safe and reliable operation.

NOTE!
Perform maintenance more often during severe dusty conditions.

7.1 Routine maintenance

Maintenance schedule during normal conditions. Check equipment prior to every use.

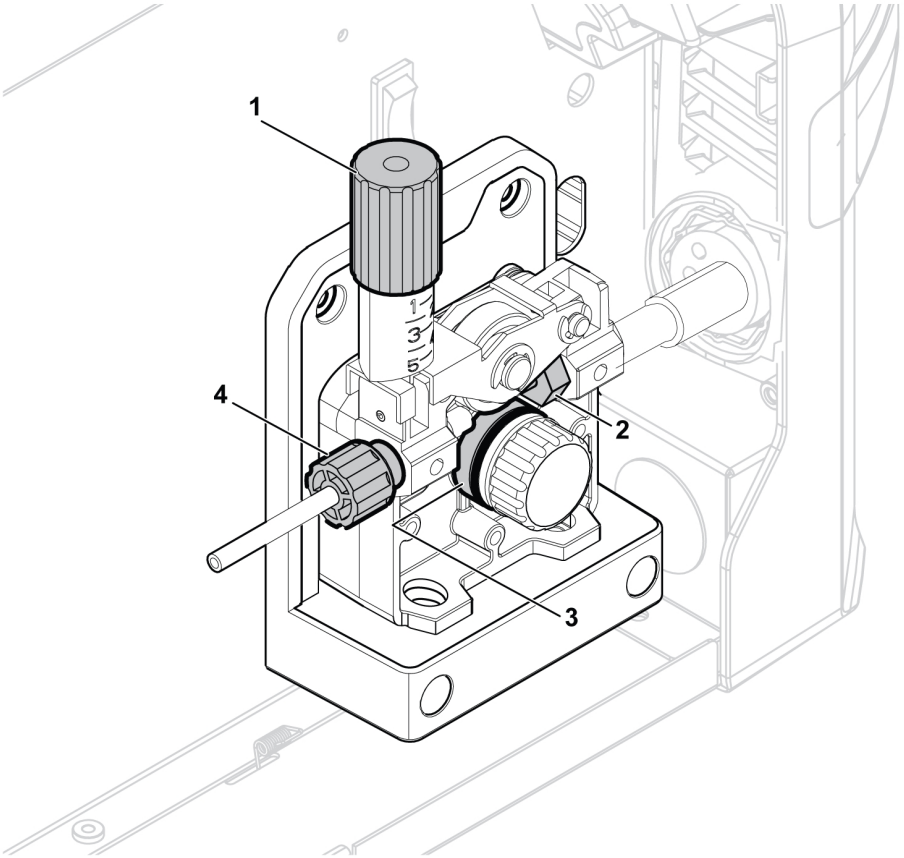
Interval	Area to maintain	
Each use	 Visual check of regulator and pressure	 Visual check of torch consumable
Weekly	 Visually inspect the torch body and consumables	 Visually inspect the cables and leads. Replace if necessary
Every 3 months	 Replace all broken parts	 Clean exterior of power source
Every 6 months	Bring the unit to an authorized service provider to remove any accumulated dirt and dust from the interior. This may need to be done more frequently under exceptionally dirty conditions.	

7.2 Cleaning the power source and wire feeder

General practice is to perform a power source cleaning each time a wire bobbin is replaced.

WARNING!
Always wear safety gloves and protective eye wear during cleaning.

1) Disconnect the power source from the input power receptable.
2) Open the spool side door and release the tension from the pressure roller by turning the tension screw (1) counterclockwise and move it outward.
3) Remove the torch, wire, and wire bobbin.
4) Use a low-pressure dry airline to clean the power source interior and power source air inlet and outlet louvers.
5) Inspect the wire inlet guide (4), the drive roll (3), and torch inlet (2) for wear. If any item is worn, replace immediately. See the "WEAR PARTS" appendix for ordering replacement items.
6) Remove and clean the feed roller (3) with a soft brush. Clean the pressure roller attached to the wire feeder mechanism with a soft brush.



7.3 Cleaning the torch and liner

1) Disconnect the power source from the mains supply.
2) Open the spool side door and release the tension from the pressure roller by turning the tension screw (1) counterclockwise and move it outward.
3) Remove the wire and the wire bobbin.
4) Remove the torch from the power source and remove the contact tip and nozzle.
5) Clean the liner by blowing low-pressure dry compressed through the end of the liner that was mounted closest to the power source.
6) Re-install contact tip and nozzle.

8 TROUBLESHOOTING

Perform these checks and inspections before sending for an authorised service technician.

Type of fault	Corrective action
Porosity within the weld metal	Check gas bottle is not empty.
	Check gas regulator is not closed.
	Check gas inlet hose for leaks or blockage.
	Check that the correct gas is connected and the correct gas flow is used.
	Keep the distance between the MIG / MAG / GMAW / FCAW torch nozzle and the work piece to a minimum.
	Do not work in areas with drafts, which would disburse the shielding gas, are common.
	Make sure the work piece is clean, with no oil or grease on the surface, before welding.
Wire feeding problems	Make sure the wire spool brake is adjusted correctly.
	Make sure the feed roller is correct size and not worn.
	Make sure the correct pressure is set on the feed rollers.
	Make sure the correct contact tip is used and it is not worn.
	Make sure liner is the right size and type for wire.
	Make sure the liner is not bent so that friction is caused between the liner and the wire.
MIG / MAG / GMAW / FCAW welding problems	Make sure the torch is connected to the correct polarity.
	Replace contact tip if it has arc marks in the bore causing excessive drag on the wire.
	Make sure the correct shielding gas, gas flow, voltage, welding current, travel speed and torch angle is used.
	Make sure the work lead has proper contact with the work piece.
MMA / SMAW / Stick basic welding problems	Make sure you are using the correct polarity. The electrode holder is usually connected to the positive polarity and the work lead to the negative polarity.
No power/No arc	Check that the mains switch is turned ON.
	Check if a temperature fault is shown on display.
	Check if system breaker is tripped.
	Check that the input power, welding and return cables are correctly connected.
	Check that the correct current value is set.
	Check the input power supply fuses.
The overheating protection trips frequently	Make sure that you are not exceeding the recommended duty cycle for the weld current you are using. See section "Duty cycle" in the "OPERATION" chapter.
	Make sure that the air inlets or outlets are not clogged.

9 ERROR CODES

Error codes that the user can handle are listed below. If any other error code appears, contact an authorised ESAB service technician.

Error code	Description
E05	**MIG / MAG / GMAW / FCAW torch trigger pressed whilst turning power source on** **Action:** Ensure that the MIG / MAG / GMAW / FCAW torch trigger is **not** pressed whilst turning power source on. **MIG / MAG / GMAW / FCAW torch trigger lead shorted** **Action:** Inspect MIG / MAG / GMAW / FCAW torch trigger and MIG / MAG / GMAW / FCAW torch lead for any possible damage and repair or replace as necessary.

10 ORDERING SPARE PARTS

CAUTION!
Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

The power source is designed and tested in accordance with the international standard **IEC/EN 60974-1, 60974-5, 60974-10, BS IEC/EN 60974-1, 60974-5, 60974-10**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

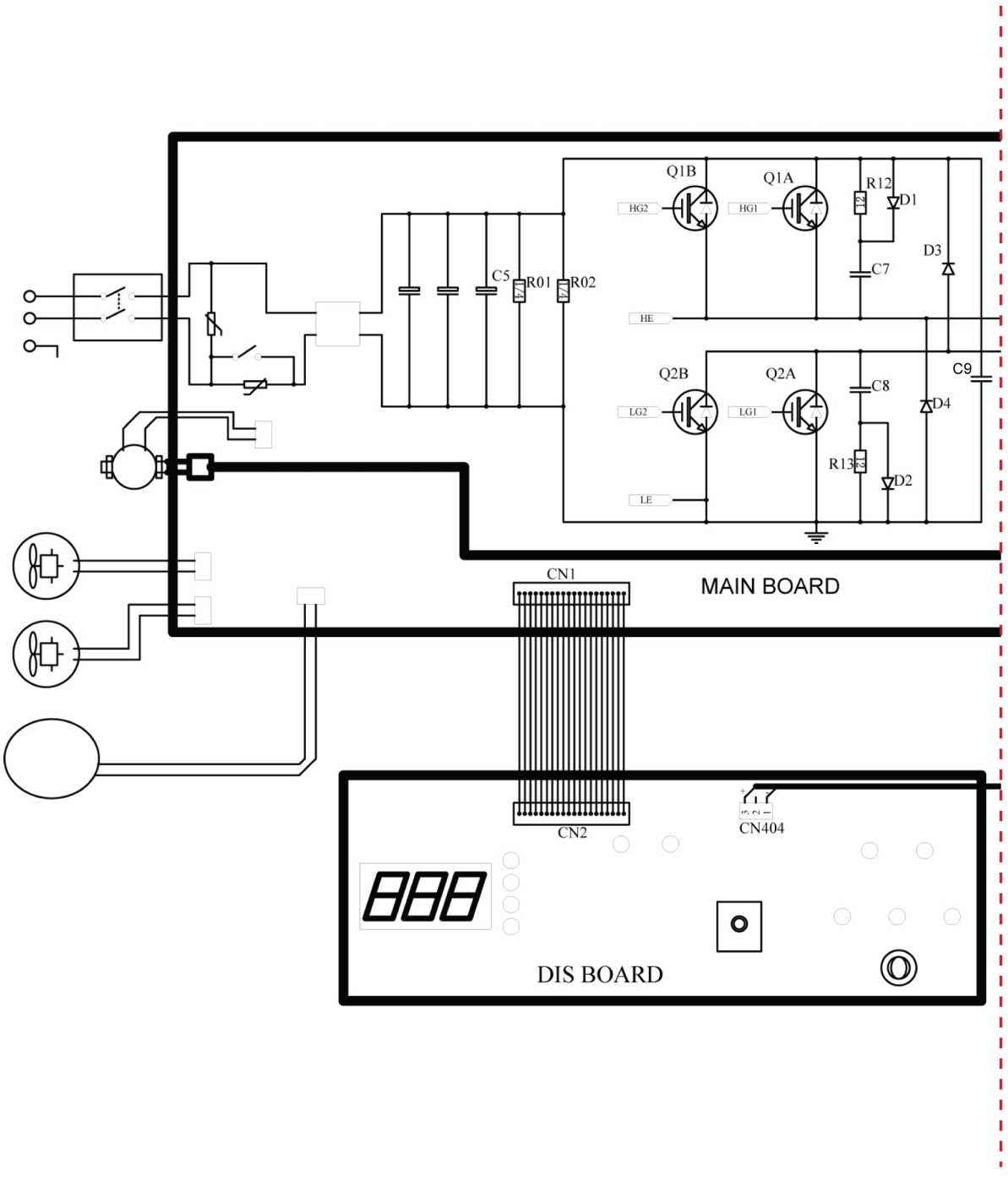
Spare parts and wear parts can be ordered through your nearest ESAB dealer, see **esab.com**. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

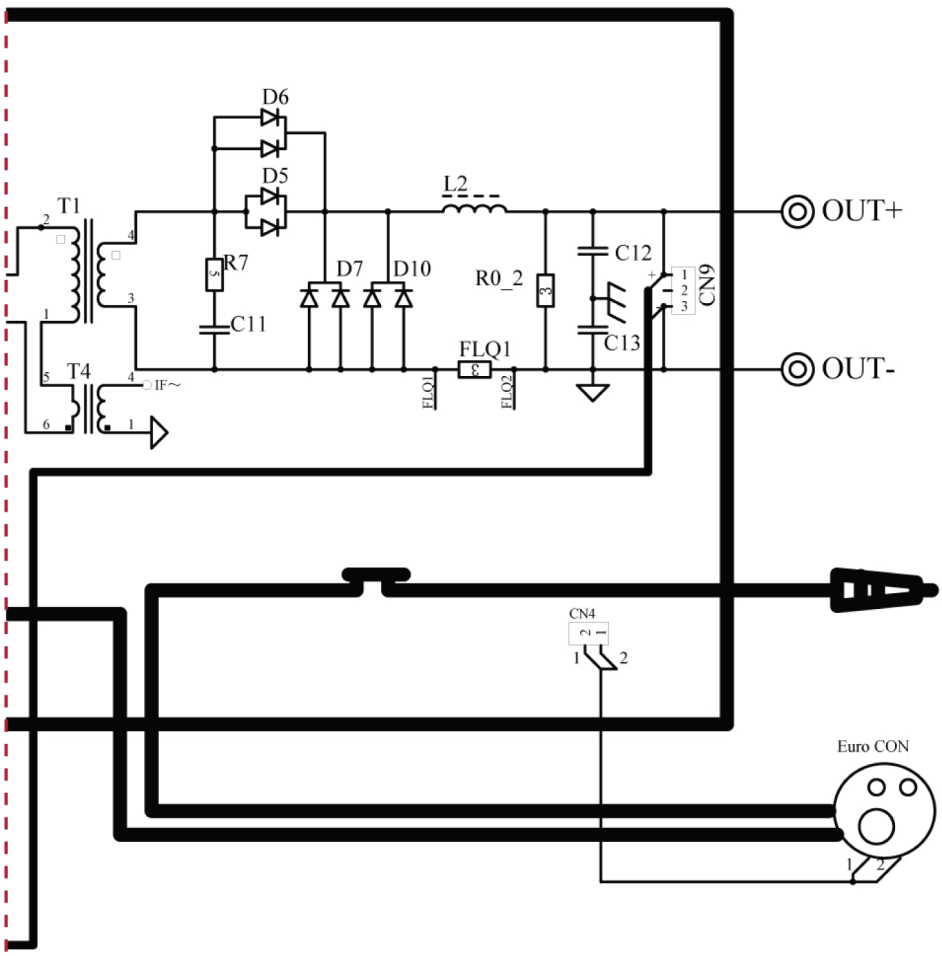
The spare parts list is published in a separate document that can be downloaded from the Internet: **www.esab.com**

APPENDIX

WIRING DIAGRAM

SPLIT DIAGRAM




D6
D5
L2
T1
OUT+
R7
D7
D10
R0_2
C12
CN9
C11
C13
FLQ1
T4
IF~
OUT-
FLQ1
FLQ2
CN4
Euro CON

ORDERING NUMBERS

Ordering number	Denomination
0700 734 010	HandyArc MIG 160i
0448 317 001	Spare parts list

The three last digits in the document number of the manual show the version of the manual. Therefore they are replaced with * here. Make sure to use a manual with a serial number or software version that corresponds with the product, see the front page of the manual.

Technical documentation is available on the Internet at: **www.esab.com**

ACCESSORIES

Part number	Description
0558 103 100	MIG/MAG torch, 150 A, Euro, 3.0 m
0558 103 102	Work clamp leadset, 2 m, 16 mm^2, 25 OKC
0558 103 101	Electrode holder, 2 m, 16 mm^2, 25 OKC
0558 103 103	Gas hose, 2 m
0558 103 104	Shoulder strap

WEAR PARTS

Part number	Description
0558 103 106	Contact tips, 0.6 mm
0558 103 108	Contact tips, 0.8 mm
0558 103 110	Contact tips, 1.0 mm
0558 103 133	Nozzle, 10 mm
0558 103 134	Nozzle, flux, 10 mm
0558 103 135	Liner, 0.8/1.0 mm, 3 m
0558 103 109	Feedroll, 0.8/1.0 mm, gasless, VK
0558 103 107	Feedroll, 0.6/0.8 mm, solid, V

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For contact information visit http://esab.com

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