SIP Industrial Products Limited
Gelders Hall Road
Shepshed
Loughborough
Leicestershire
LE12 9NH
United Kingdom

SIP INDUSTRIAL

SIP Weldmate Pro 120A DC TIG/MMA Inverter Welder

SIP Code 05693

For help or advice please contact your distributor, or sip directly on:

Tel.: 01509 500400

Email:

sales@sip-group.com

or

customerservice@sip-group.com

www.sip-group.com

Please read and fully understand the instructions in this manual before operation. Keep this manual safe for future reference.

Images contained in this manual are for illustration and reference purposes and may not match actual product.

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SAFETY SYMBOLS USED THROUGHOUT THIS MANUAL

Danger / Caution: Indicates risk of personal injury and / or the possibility of damage

Warning: Risk of electrical injury or damage

Note: Supplementary Information

Important: Please read the following instructions carefully, failure to do so could lead to injury and/or damage to the product.

SAFETY INSTRUCTIONS

When using your inverter welder, basic safety precautions should always be followed to reduce the risk of personal injury and / or damage to the welder.
Read all of these instructions before operating the welder and save this user manual for future reference.
The welder should not be modified or used for any application other than that for which it was designed.
This welder was designed to supply electric current for TIG or Arc welding.
If you are unsure of its relative applications do not hesitate to contact us and we will be more than happy to advise you.
Before each use of the welder always check no parts are broken and that no parts are missing.
Always operate the welder safely and correctly.
KNOW YOUR WELDER: Read and understand the owner's manual and labels affixed to the welder. Learn its applications and limitations, as well as the potential hazards specific to it.
KEEP WORK AREA CLEAN AND WELL LIT: Cluttered work benches and dark areas

invite accidents. Floors must not be slippery due to oil, water or sawdust etc.
DO NOT USE THE WELDER IN DANGEROUS ENVIRONMENTS: Do not use the welder in damp or wet locations, or expose it to rain. Provide adequate space surrounding the work area. Do not use in environments with a potentially explosive atmosphere.
KEEP CHILDREN AND UNTRAINED PERSONNEL AWAY FROM THE WORK AREA: All visitors should be kept at a safe distance from the work area.
STORE THE WELDER SAFELY WHEN NOT IN USE: The welder should be stored in a dry location and disconnected from the mains supply, and out of the reach of children.
USE SAFETY CLOTHING / EQUIPMENT: Use a CE approved welding mask at all times with the correct shade of filter lens. A fume extractor should be used particularly where there is little or no ventilation.
PROTECT YOURSELF FROM ELECTRIC SHOCK: When working with the welder, avoid contact with any earthed items (e.g. pipes, radiators, hobs and refrigerators, etc.). It is advisable wherever possible to use an RCD (residual current device) at the mains socket. STAY ALERT: Always watch what you are doing and use common sense. Do not operate the welder when you are tired or under the influence of alcohol or drugs.
DISCONNECT THE WELDER FROM THE MAINS SUPPLY: When not in use and before servicing.
AVOID UNINTENTIONAL STRIKING: Make sure the switch is in the OFF position before connecting the welder to the mains supply.
NEVER LEAVE THE WELDER CONNECTED WHILST UNATTENDED: Turn the welder off and disconnect it from the mains supply between jobs. Do not leave the welder connected to the mains supply if no more welding is to be done.
DO NOT ABUSE THE MAINS LEAD: Never attempt to move the welder by the mains lead or pull it to remove the plug from the mains socket. Keep the mains lead away from heat, oil and sharp edges. If the mains lead is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid un- wanted hazards. All extension cables must be checked at regular intervals and replaced if damaged.
CHECK FOR DAMAGED PARTS: Before every use of the welder, any damage found should be carefully checked to determine that it will operate correctly, safely and

perform its intended function. Any damaged, split or missing parts that may affect its operation should be correctly repaired or replaced by an authorised service centre unless otherwise indicated in this instruction manual.
KEEP ALL PANELS IN PLACE: Never operate the welder with the panels removed, this is extremely dangerous.
MAINTAIN THE WELDER WITH CARE: Keep the earth clamp and Tig torch consumables clean for the best and safest performance.
USE ONLY RECOMMENDED ACCESSORIES: Consult this user manual, your distributor or SIP directly for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards and will invalidate any warranty you may have.
SECURE THE WORK-PIECE: Always use welding clamps to secure the work piece. This frees up both hands to operate the welder correctly.
DO NOT OVERREACH: Keep proper footing and balance at all times.
USE THE RIGHT TOOL: Do not use the welder to do a job for which it was not designed.
DO NOT OPERATE THE WELDER IN EXPLOSIVE ATMOSPHERES: Do not use the welder in the presence of flammable liquids, gases, dust or other combustible sources. Welding will create sparks which can ignite the dust or fumes.
DO NOT EXPOSE THE WELDER TO RAIN OR USE IT IN WET CONDITIONS: Water entering the welder will greatly increase the risk of electric shock and equipment damage. HAVE YOUR WELDER REPAIRED BY A QUALIFIED PERSON: The welder is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.

- Stop operation immediately if you notice anything abnormal.
- Always disconnect the plug from the mains supply before cleaning or servicing etc. Be alert at all times, especially during repetitive, monotonous operations; Don't be lulled into a false sense of security.
- Use of improper accessories may cause damage to the inverter welder and surrounding area as well as increasing the risk of injury.
- Do not modify the inverter welder to do tasks other than those intended.
- To avoid injury, the work-piece should never be held with bare hands;

The work- piece will become hot during normal welding operations, and stay hot for a period after the weld is complete.

- Appropriate personal protective equipment must be worn and must be designed to protect against all hazards created. Severe permanent injury can result from using inappropriate or insufficient protective equipment - Eyes in particular are at risk.
- The work should be clamped firmly whilst welding, If its loose it could result in personal injury or damage to the machine or item that is being welded.
- Do not attempt any repairs to the welder unless you are a qualified electrician or competent service engineer.
- Ensure that the machine is connected to the correct supply voltage and protected by a fuse or circuit breaker of the recommend rating.
- Never allow the earth clamp and electrode holder to come into contact with each other.
- Understand the operating environment; Before each use the operator should assess, understand and where possible reduce the specific risks and dangers associated with the operating environment. Bystanders should also be made aware of any risks associated with the operating environment.
- Electromagnetic fields can interfere with various electrical and electronic devices such as pacemakers; Consult your doctor before using any electric welder or cutting device.
- Keep people with pacemakers away from your welding area when welding. Do not wrap cable around your body while welding.
- If the welder is to be used on business premises - ensure that all local and national regulations are followed concerning the use of portable electrical appliances at work.

- Electric inverter welders have the potential to cause a shock that could lead to injury or death. Touching electrically 'hot' parts can cause fatal shocks

ELECTRIC SHOCK

and severe burns; While welding, all metal components connected to the welder are electrically 'hot'.

- Keep your body and clothing dry. Never work in a damp area without adequate insulation against electrical shock, stay on a dry duck board, or rubber mat when dampness or sweat can not be avoided. Sweat, sea water or moisture between the body and an electrically 'hot' part or grounded metal reduces the body surfaces electrical resistance enabling dangerous and possibly lethal currents to flow through the body.
- Never allow live metal parts to touch bare skin or any wet clothing, be sure welding gloves are dry.
- Before welding, check for continuity; Be sure the earth clamp is connected to the work-piece as close to the welding areas as possible. Grounds connected to building frame work or other remote locations from the welding area reduce efficiency and increase the potential electric shock hazard. Avoid the possibility of the welding current passing through lifting chains, crane cables or other electric paths.
- Frequently inspect leads for wear, splits, cracks and any other damage. Immediately replace those with worn or damaged insulation to avoid a possibly lethal shock from bare leads.
- During normal operation, the heat and sparks created during the welding process have the potential to ignite flammable liquids, gases or other

FIRE

combustible material least 10 metres away and out of the reach of sparks and heat or protect against ignition with suitable and snug fitting, fire resistant covers or shields.

- Walls touching combustibles on opposite sides should not be welded on, walls, ceilings and the floor near the work area should be protected by heat resistant covers or shields.
- Openings (concealed or visible) in floors or walls within 10 metres may expose combustibles to sparks.

- Combustibles adjacent to walls, ceilings, roofs or metal partitions can be ignited by radiant or conducted heat.
- After the work is done, check that the area is free of sparks, glowing embers and flames.
- An empty container that has held combustibles, or that can produce flammable or toxic vapours when heated, must never be welded, unless the container has first been cleaned. Consult HSE INDG214, HSG250 and CS15. HSE document CS15 includes information on cleaning by thorough steam or solvent/ caustic cleaning followed by purging and inserting with nitrogen, carbon dioxide or water filling just below working level.
- A container with unknown contents should be treated as if it contained combustibles (see previous paragraph), Do not depend on sense of smell or sight to determine if it is safe to weld.
- Hollow items must be vented before welding as they can explode.
- Explosive atmosphere; Never weld when the air may contain flammable dust, gas or liquid vapours (such as petrol).

- The welding arc produces ultraviolet (UV) and infrared (IR) rays as well as extreme temperatures that can cause injury to your eyes and skin. Do not look at the welding arc without proper eye protection.

GLARES & BURNS

- The electric welding arc must not be observed with the naked eye. Always use a welding mask; Ensure the welding mask is fitted with the correct shade of filter lens for the welding current level, and covers the entire face from neck to the top of the head.
- Welding gauntlet gloves should be worn to protect the hands from burns, non- synthetic overalls with buttons at the neck and wrist, or similar clothing should be worn. Greasy overalls should not be worn. Wear suitable protective footwear.
- Always wear correctly rated protective clothing which covers all areas

of the body; The operator should not weld with any bare skin showing to reduce the chance of burns etc.

- Avoid oily or greasy clothing, a spark may ignite them.
- Hot metal such as electrode stubs and work-pieces should never be handled without gloves.
- First aid facilities and a qualified first aid person should be available for each shift unless medical facilities are close by for immediate treatment of flash burns to the eyes and skin.
- Flammable hair products should not be used by persons intending to weld. Warn bystanders not to watch the arc and not to expose themselves to the welding arc rays or to hot metal.
- Keep children away whilst welding, they may not be aware that looking at an arc can cause serious eye damage.
- Protect other nearby personnel from arc rays and hot sparks with a suitable non- flammable partition.
- Ventilation is now regulation and must be adequate to remove the smoke and fumes during welding (see the relevant safety regulation for acceptable levels).

VENTILATION

- Toxic gases may be given off when welding, especially if zinc or cadmium coated materials are involved, welding should be carried out in a well ventilated area and the operator should always be alert to fume build-up.
- Areas with little or no ventilation should always use a fume extractor.
- Vapours of chlorinated solvents can form the toxic gas phosgene when exposed to UV radiation from an electric arc. All solvents, degreasers and potential sources of these vapours must be removed from the arc area.
- Severe discomfort, illness or death can result from fumes, vapours, heat, oxygen enrichment or depletion that welding (or cutting) may produce. This will be prevented by adequate ventilation or using a fume extractor. NEVER ventilate with oxygen.

- Lead, cadmium, zinc, mercury, beryllium bearing and similar materials when welded may produce harmful concentrations of toxic fumes. Adequate ventilation must be provided for every person in the area. The operator should also wear an air supplied respirator, for beryllium both must be used.
- Metals coated with or containing materials that emit toxic fumes should not be heated unless coating is removed from the work surface. The area should be well ventilated or the operator should wear an air supplied respirator.
- Work in a confined space only while it is being ventilated and if necessary whilst wearing an air supplied respirator.
- Gas leaks in a confined space should be avoided, leaking gas in large quantities can change oxygen concentration dangerously. DO NOT bring gas cylin ders into a confined space.
- Leaving a confined space you must shut off the gas supply at the source to prevent possible accumulation of gases in the space if down stream valves are left open. Check to be sure that the space is safe before re-entering it.
- Vapours from chlorinated solvents can be decomposed by the heat of the arc (or flame) to form phosgene a highly toxic gas and other lung and eye-irritating products. The ultra violet (radiant) energy of the arc can also de compose tri- chloroethylene and perchlorethylene vapours to form phos gene. DO NOT WELD or cut where solvent vapours can be drawn into the welding atmosphere, or where the radiant energy can penetrate to at mospheres containing even minute amounts of trichloroethylene or per chlorethylene.

When using the welder always ensure the operator as well as those in the area use a welding mask with the correct shade filter lens.

Some metals and metal composites have the potential to be highly toxic; always wear a face mask .

CAUTION: The warnings and cautions mentioned in this user manual can not 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 applied.

ELECTRICAL CONNECTION

Warning Read these electrical safety instructions thoroughly before connecting the product to the mains supply.

This 05693 Weldmate Pro 120A is for use with a 230V UK domestic socket and should be grounded/earthed. Make sure that the product is connected to an outlet that has the same configuration as the plug (see Figure 1). If an extension lead is used, make sure the cable size is sufficient as to be able to take the current of the welder.

Check with a qualified electrician if the grounding instructions are not understood or there is doubt as to whether the product is properly grounded. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a licensed electrician.

Improper installation of the grounding plug will result in a risk of electric shock. If repair or replacement of the cable or plug is necessary, consult a qualified electrician.

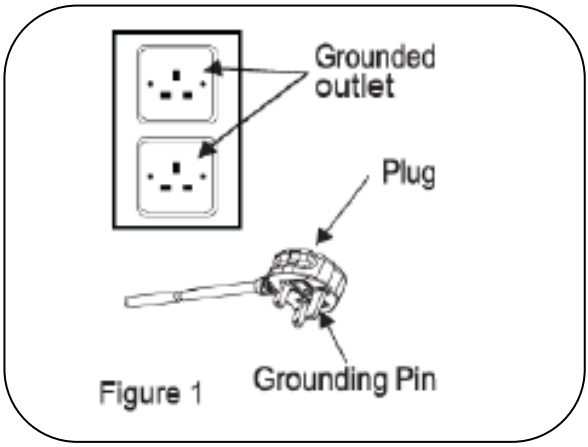


Figure 1

We strongly recommend that this machine is connected to the mains supply through a Residual Current Device (RCD).

If you are not sure, consult a qualified electrician. DO NOT try to do any repairs.

ELECTRICAL CONNECTION Cont...

Warning: Never connect live or neutral wires to the earth terminal of the plug. Only fit an approved plug with the correct rated fuse. If in doubt consult a qualified electrician.

Note: Always make sure the mains supply is of the correct voltage and amperage and the correct fuse protection is used. In the event of replacing the fuse always replace the fuse with the same value as the original.

Note: If an extension lead is required in order to reach the mains supply; ensure that this too is rated for the correct voltage and fuse rating.

Note: The cross section of the extension lead should be checked so that it is of sufficient size so as to reduce the chances of voltage drops.

GUARANTEE

This item is covered by a 24 month parts and labour warranty covering failure due to manufacturers defects.

Please register your product online at www.sip-group.com, within 28 days to qualify for the full 24 month warranty. Failure to register will result to a limited 12 month warranty period.

This does not cover failure due to misuse or operating the item outside the scope of this manual - any claims deemed to be outside the scope of the warranty may be subject to charges Including, but not limited to parts, labour and carriage costs.

Failure to regularly clean your welder will shorten its working life and reduce performance. The warranty does not cover consumable items such as welding torches, leads, hoses, collets, ceramics & clamps etc.

Note: Proof of purchase will be required before any warranty can be honoured

TECHNICAL SPECIFICATION

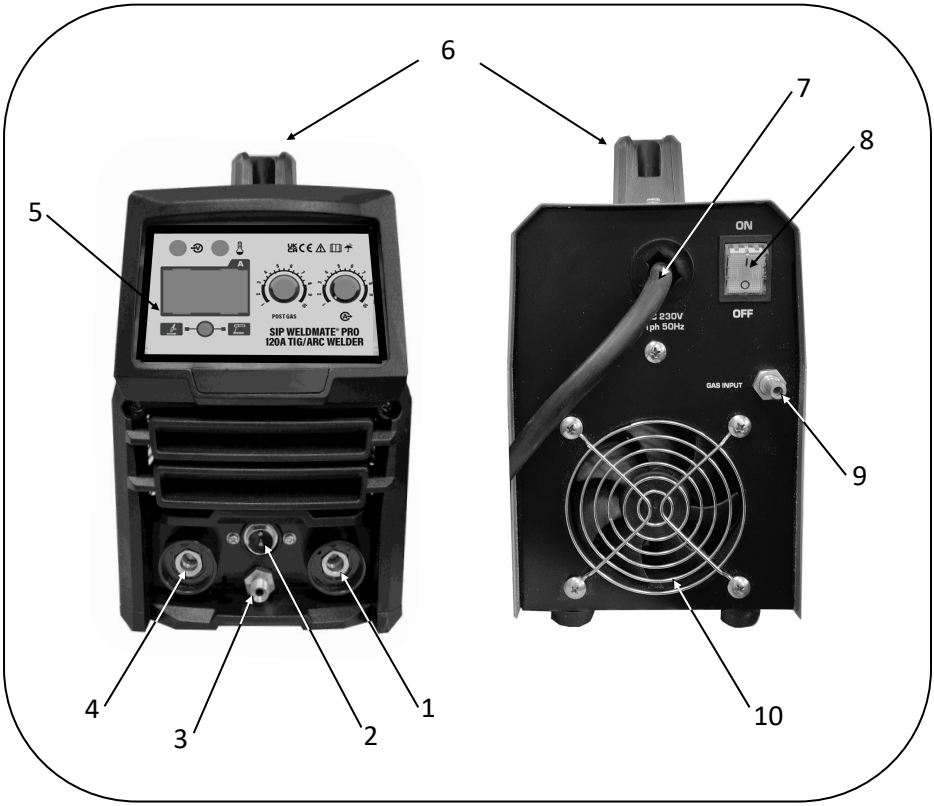
Model	**05693**
Input Voltage	230v 50Hz
Input Current / Power	I_{max} 17A : I_{eff} 6.6A
Output Current - TIG DC	10A - 120A
Output Voltage - TIG DC	10.4V - 14.8V : 70V DC Open Circuit Volts
Output Current - MMA DC	10A - 100A
Output Voltage - MMA DC	20.4V - 24V : 70V DC Open Circuit Volts
Duty Cycle 40°C TIG DC (10 Minutes)	120A @ 15%
	60A @ 60%
	46.5A @ 100%
Duty Cycle 40°C MMA (10 Minutes)	100A @ 15%
	50A @ 60%
	39A @ 100%
Protection / Insulation	IP21S / H
Product Dimensions	370L x 150D x 270Hmm
Packaged Dimensions	440L x 295D x 355Hmm
Weight	GW:8.9kG NW: 7.2kG

CONTENTS & ACCESSORIES

1	05693 120A DC TIG Welder	1	User Manual
1	4mtr TIG Torch	1	Earth clamp with lead
1	Electrode holder with lead	1	Gas hose c/w hose clamps
1	Accessory kit		

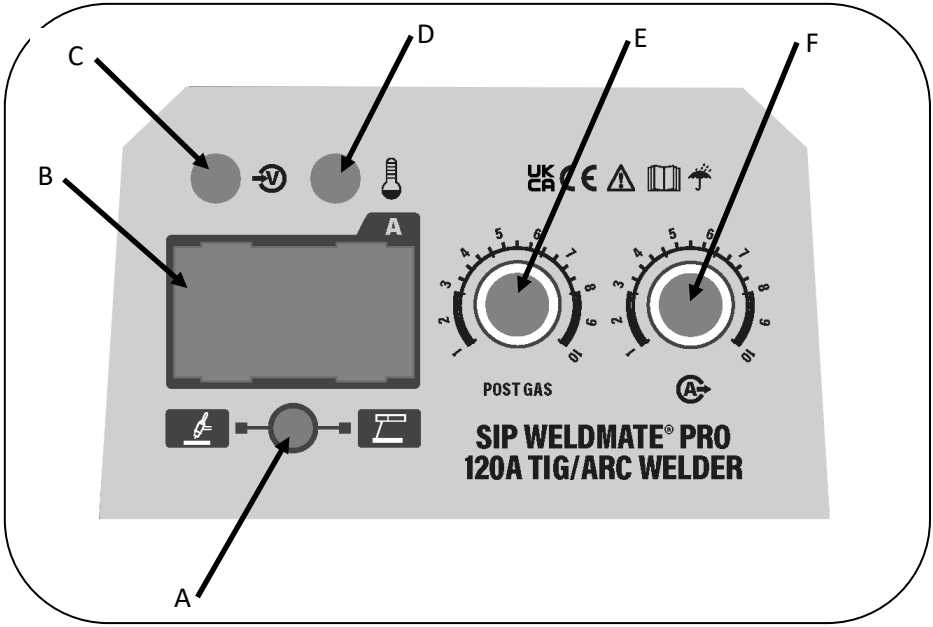
Note: If any of the above are missing or damaged, contact your distributor immediately.

GETTING TO KNOW YOUR TIG WELDER



Item	*Description*	*Item*	*Description*
1	Negative Output Socket (-)	**6**	Carry Handle
2	Torch Trigger	**7**	Mains Input Cable
3	Torch Gas Connection	**8**	Main On/Off Switch
4	Positive Output Socket (+)	**9**	Gas Connection
5	Control Panel	**10**	Air Inlet

CONTROL PANEL



Item	*Description*	*Item*	*Description*
A	TIG / MMA Selector Switch	**D**	Thermal Overload LED
B	Display	**E**	Post Flow Gas Control (TIG)
C	Mains Power LED	**F**	Welding Current Adjuster

TIG WELDING

- Select TIG mode using the selector switch.

FITTING THE GAS HOSE

Note: In order to use gas you will need to purchase gas and a gas regulator suitable for the type of welding required.

- Push the gas hose provided on to the connection at the rear of the welder.
- Secure using the hose clamp.
- A fitting will be required to be purchased to connect the other end of the hose to the gas regulator.

FITTING THE TORCH & EARTH LEAD

- To connect the Earth / welding return lead simply line up the tab on the Electrical plug with the cut out on the positive Electrical socket and turn clockwise to secure.
- Connect the torch power lead in the same way, but connect to the negative socket.
- The torch trigger lead is fitted to the torch trigger plug; Line up the cut-out on the lead with the tab on the socket. Push into place and retain using the nut.
- Fit the gas pipe on the torch to the gas fitting - simply push it into the socket until it “clicks”.
- See Fig.1

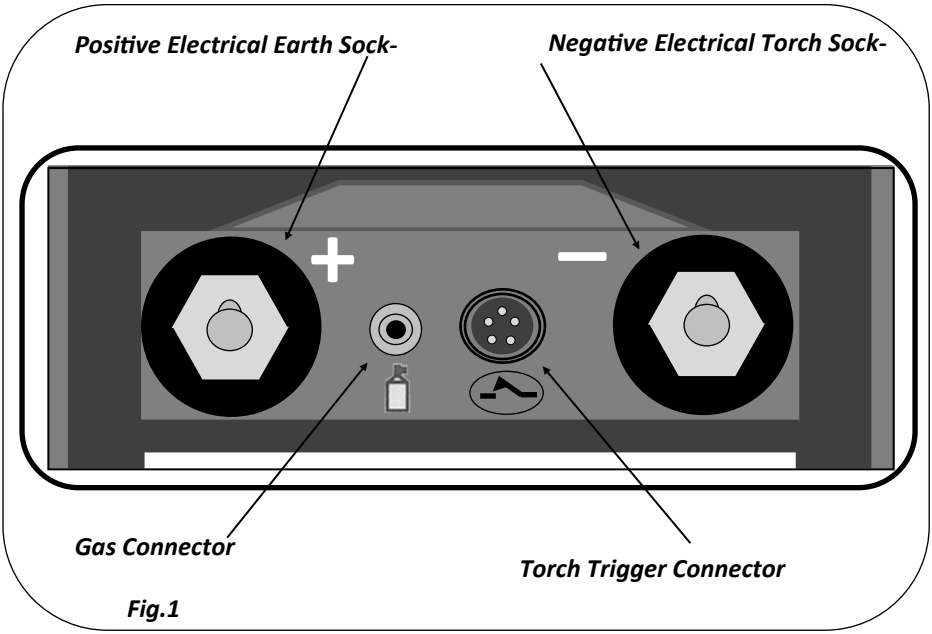


Fig.1

TUNGSTEN INFORMATION

The required tungsten diameter is determined by the thickness of the material to be welded, for each tungsten size there are strict current limits which should be adhered to.

Too great a current causes excessive tungsten consumption and weld pool contamination, whilst a too small a current causes arc instability.

The table (page 21) gives a guide as to which tungsten is most suitable according to the material thickness. This table is only a guide, and values given are a indication only.

The table also shows the different types of tungsten's, their mode & colour code .

Welding Mode	*Tungsten Type*	*Colour*	*Welding Thickness mm*	*Tungsten Diameter mm*	*Welding Current - Steel / Amps*
AC or DC	Ceriated 2%	Grey	0.5	1.0	30 - 60
AC or DC	Lanthanated 1%	Black	1.0	1.6	50 - 70
AC or DC	Lanthanated 1.5%	Gold	1.5	1.6	90 - 110
AC or DC	Lanthanated 2%	Blue	2.0	1.6	100 - 130
DC	Thoriated 2%	Red	3.0	2.4	120 - 140
DC	Zirconiated	White	4.0	2.4	150 - 200

Note: The above is a guide only; always try a short weld test at the setting selected. It is normal to make minor adjustments to achieve the required weld.

It is important to choose a tungsten with the correct diameter for the current to be used.

The tungsten will normally protrude from the ceramic nozzle by 2 or 3mm; in order to gain access to areas such as internal corners the tungsten can be made to protrude by up to 8mm.

The tungsten should be sharpened facing the grinding wheel, Fig.2.

The tip should be perfectly concentric in order to avoid arc deviations on DC TIG.

It is best to regularly inspect the tungsten to maintain peak condition.

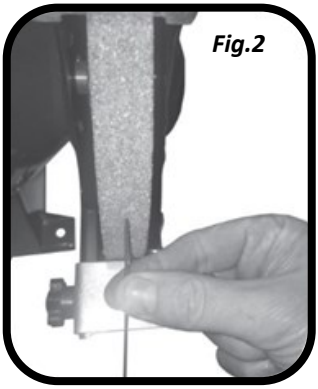


Fig.2

- ***NOTE:*** Grinding thoriated tungsten electrodes requires additional safety measures.
- Thoria is a radioactive compound, and it's present in the red, thoriated tungsten.
- So apart from standard safety measures when grinding, using a mask respirator and having a local dust extraction when grinding thoriated tungsten rods is recommended.

Note: Dust created by grinding tungsten's may require collection and disposal - contact your local authority or the HSE for advice.

PREPARATION FOR WELDING

- Clean the area to be welded, and the earthing point of all rust, paint and contaminants etc.
- Place the earth clamp onto a cleaned area of the workpiece. Fit the ground tungsten into the TIG torch head.
- Connect the regulator (not supplied) onto the gas bottle.
- Connect the gas pipe from the rear of the welder onto the regulator. Turn the regulator on.
- Connect the welder to the electrical supply but do not switch on.

WELDING CURRENT CONTROL

The welder should be set so that the welding current, Tungsten electrode diameter and material thickness all match.
Use the table on page 23 as a guide.
The welding current adjustment is performed by adjusting the power by turning the current control knob; anti-clockwise to reduce or clockwise to increase the power.

Note: This a DC TIG welder. It is not capable of welding Aluminium or its alloys.

WELDING

- Switch the welder on.
- Set the required welding parameters as explained on pages 20 & 21.
- Place a Handshield / Headshield over your face (not supplied).
- Initiate the arc - Press & hold the torch trigger.
- Release the trigger to distinguish the arc.
- Once all work has been done, switch the machine and the gas off.

CAUTION: Ensure all protective equipment is worn and bystanders are not in the vicinity

Note: Additional filter rod material will need to be purchased separately. The type required will depend upon the material being welded i.e. Steel, Stainless, etc

DC TIG MILD & STAINLESS STEEL

Base Metal mm	*Tungsten Ø mm*	*Filler Wire Ø mm*	*Gas Flow L/min*	*Joint Types & Welding Current (A)*
1.6	1.6	1.6	5 - 8	Butt 50 - 80: Corner 50 - 80: Fillet 60 - 90
2.4	1.6 / 2.4	1.6 / 2.4	5 - 10	Butt 80 - 110: Corner 80 - 110: Fillet 90 - 120
3.2	2.4	2.4	5 - 10	Butt 80 - 120: Corner 90 - 120: Fillet 100 - 140
4.8	2.4	2.4	6 - 12	Butt 120 - 200: Corner 150 - 200:Fillet 170 - 220

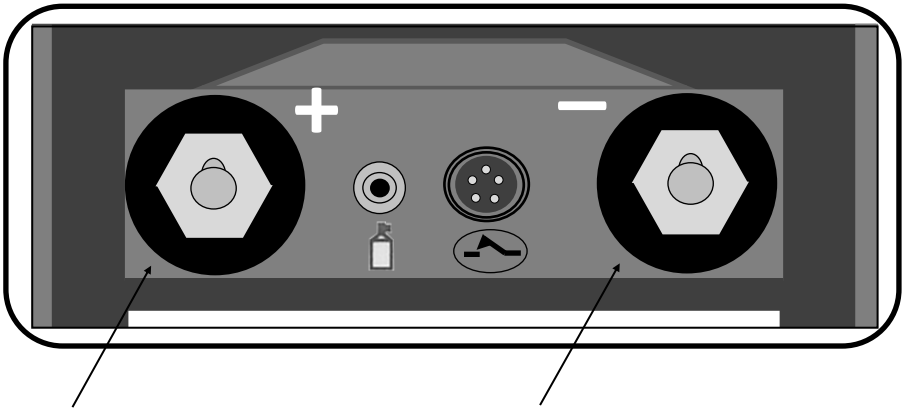
MMA / ARC WELDING

Select MMA / ARC mode using the selector switch.

CONNECTING THE WELDING LEADS

- Connect the welding leads.
- Plug the electrode lead into the positive socket and turn to secure.
- Plug the Earth / welding return lead into the negative socket and turn to secure. See Fig .3
- Switch the machine on
- Select “MMA” on the control panel.
- The welding current will be displayed. Adjust the power by turning the large control knob; anti-clockwise to reduce or clockwise to increase.

Fig.3



Positive Electrical Socket - Electrode lead connection

Negative Electrical Socket - Earth lead connection

WELDING

There are no hard and fast rules by which a particular gauge of electrode is selected, usually this is determined by the type of welding required and the thickness of the workpiece e.g. *a butt weld in 1.5mm (1/16") sheet metal can be done by a 1.6mm or 2.0mm electrode, the difference being that the 2.0mm electrode will do the job more quickly.*

The table gives a guide as to which electrode is most suitable according to the material thickness. This table is only a guide, and values given are an indication only. These welding current values are for the E6013 electrodes, for other types of electrode consult their data sheet.

Electrode Size - mm	*Material Thickness - mm*	*Welding Current - A*
1.6	1 - 1.6	25 - 40
2.0	1.6 - 2.6	40 - 70
2.5	2.6 - 4.0	60 - 100
3.25	3.0 - 5.0	80 - 130
4.00	5.0 - 7.0	130 - 170

Note: The above is a guide; always try a short weld test at the setting selected. It is normal to make minor adjustments to achieve the required weld.

WELDING CURRENT CONTROL

The welder should be set so that the welding current, electrode rod diameter and material thickness all match.
Use the table on page 25 as a guide.
The welding current adjustment is performed by adjusting the power by turning the large control knob; anti-clockwise to reduce or clockwise to increase the power.

PREPARATION FOR WELDING

Clean the area to be welded, and the earthing point of all rust, paint and contaminants etc.
Place the earth clamp on to a cleaned area of the workpiece.
Connect the welder to the electrical supply but do not switch on.

WELDING

- Switch the welder on.
- Select MMA from the front panel.
- Select your required welding current; the table on page 26 can be used as a guide.
- The welding current adjustment is performed by adjusting the power by turning the large control knob; anti-clockwise to reduce or clockwise to increase the power.
- Fit the correct size welding electrode.

CAUTION: Be aware that the electrode is now live, simply touching any part of the workpiece with the electrode will create a spark.

- Place a welding handshield / headshield over your face (not supplied).
- Initiate the arc by striking the electrode; several attempts may be required.
- Once the arc is started, proceed steadily in one direction keeping the gap between the electrode and workpiece small and constant.
- When the weld is complete simply “break” the arc by pulling the electrode away from the workpiece.
- Whilst wearing protective goggles or a face visor remove the slag from the weld using a chipping hammer and clean the weld using a wire brush.
- Once all work is completed, switch off the machine.

CAUTION: Ensure all protective equipment is worn and bystanders are not in the vicinity

MAINTENANCE

DAILY

- Visually inspect welding leads, the welding torch and mains input cable.

MONTHLY

- Clear dust from the machine, especially if used in a dirty environment. The machine should be cleaned at least once a month.
- Check all connections are clean and tight, if there is any oxidization clean the connection with a mild abrasive or wire brush.
- Check all cables for damage or degradation to the insulation, replace if any is found.
- Check earth clamp condition ensure they clamp tightly, replace if damaged or loose.
- All consumables in the torch must be checked and cleaned / replaced frequently.

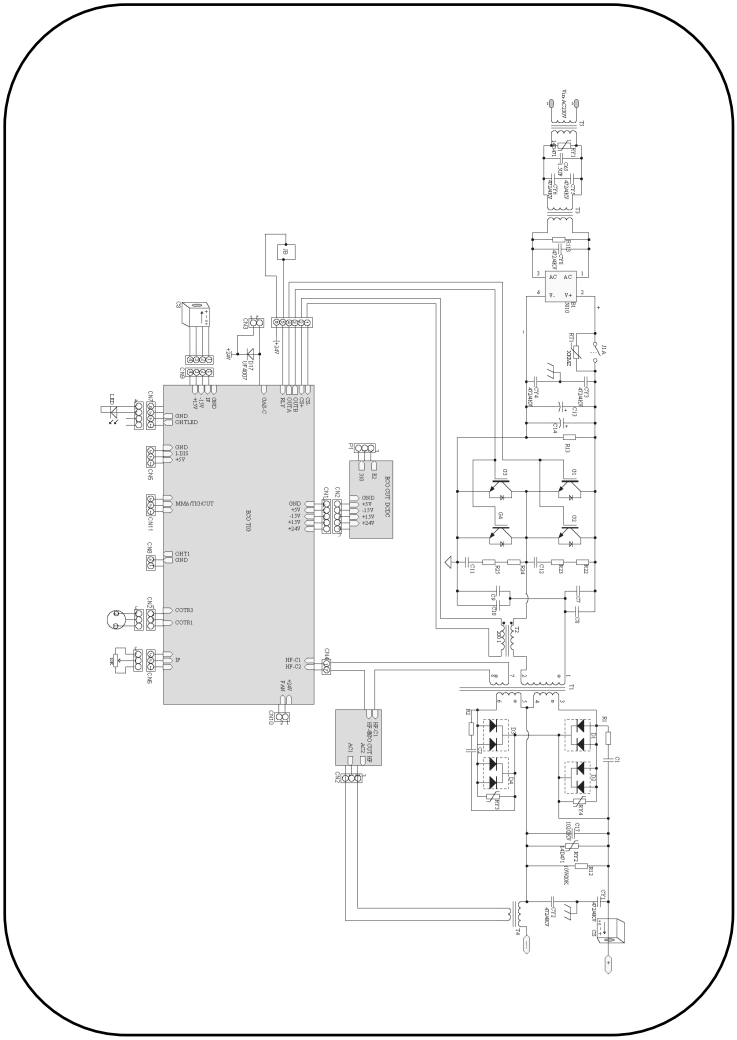
ANNUALLY

- Have your welding equipment serviced by a Welding Equipment Specialist.
- This is not included in the warranty and you will have to pay for the service.
- Having a regular service schedule will ensure that the performance will remain consistent and ensure that the equipment is in a safe working condition.
- If the machine is not to be used for a long time, store it in the original packing in a dry place.

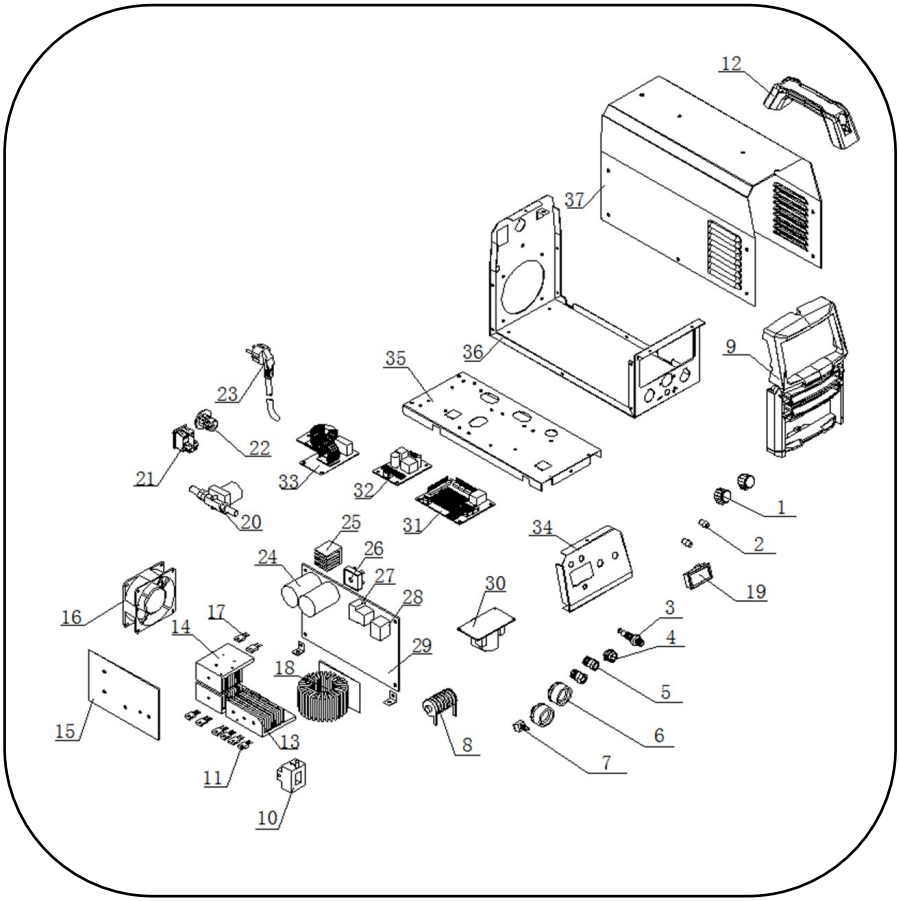
TROUBLESHOOTING

Symptom	*Possible Cause*	*Corrective Action*
Cooling Fan Not Running	• Cooling Fan Broken • Cable Damaged / fallen off	• Replace the fan • Check cable and repair
No Arc Ignition / HF	• Faulty Torch Switch • Faulty main PCB • Earth lead not connected	• Replace Torch Switch • Replace main PCB • Repair connection
No Gas Flow	• No Gas Input • Solenoid Valve • Pipe Blockage • PCB Faulty	• Check gas is connected; turned on and regulator is on. • Check / Replace Solenoid Valve. • Check and clear blockage. • Check / Replace PCB
Alarm Sounds	• Machine Internally Overheats • Thermal Overload Failed • Mains Supply Too Low	• Machine will reset when cool • Replace Thermal Overload • Use correct supply
Main Panel Adjusting Knob Does Not Work	• Damaged Encoder • Main PCB Fault	• Replace Encoder / Panel PCB • Replace Main PCB
Poor Weld Quality	• Incorrect Gas • Incorrect Gas Flow / Coverage • Incorrect Tungsten / Dirty Tungsten • Incorrect Tungsten Size • Material Issue • Machine Setting	• Check Gas • Adjust Gas Flow • Check & Clean Tungsten • Check Tungsten Size • Check Material Quality • Reset Welding Parameters

WIRING DIAGRAM



EXPLODED DRAWING



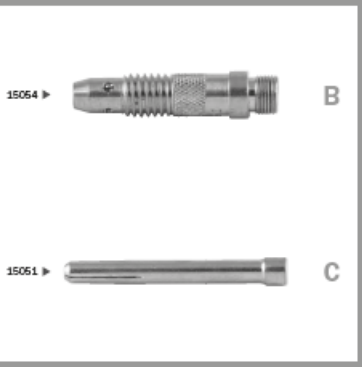
Item No	Description	Item No	Description
1	Potentiometer knob	20	Solenoid valve
2	Indicator lamp holder	21	Rocker switch
3	Gas connector	22	Cable Clamp
4	Microswitch / Trigger Socket	23	Mains Lead
5	Electrical Socket	24	Electrolytic capacitor
6	Electrical Socket Insulator	25	Rectifier bridge Heatsink
7	Toggle harness	26	Rectifier bridge
8	Lead coil	27	Relay
9	Plastic front panel	28	CT
10	Hall harness	29	Mainboard
11	Fast recovery diode	30	High-frequency board
12	Handle	31	Control panel
13	Heatsink	32	Auxiliary power board
14	IGBT Heatsink	33	Filter band
15	Fan baffle	34	Front panel
16	Fan	35	Middle diaphragm welding
17	IGBT	36	Bottom plate welding
18	Medium frequency transformer	37	Casing
19	Digital display meter		

TIG Torch Ceramics

	SIP Code	DESCRIPTION	BORE	Barcode Number
A - WP17 / 18 / 26 CERAMIC SHIELD				
	15058	10N48 Ceramic	10 mm	5012713150588
	15073	10N47 Ceramic	11 mm	5012713150731
	15057	10N46 Ceramic	13 mm	5012713150571
	15071	10N45 Ceramic	16 mm	5012713150717

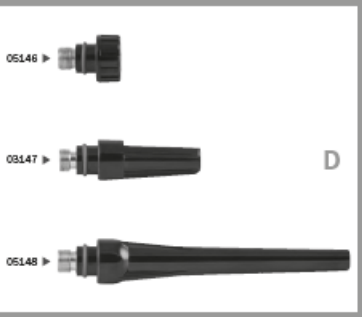
TIG Torch Collets & Collet Bodies

	SIP Code	DESCRIPTION	BORE	Barcode Number
B - WP17 / 18 / 26 STANDARD COLLET				
	15051	10N22	1.0 mm	5012713150519
	15052	10N23	1.6 mm	5012713150526
	15053	10N24	2.4 mm	5012713150533
	15078	10N25	3.2 mm	5012713150786
C - WP17 / 18 / 26 STANDARD COLLET BODY				
	15054	10N30	1.0 mm	5012713150540
	15055	10N31	1.6 mm	5012713150557
	15056	10N32	2.4 mm	5012713150564
	15079	10N28	3.2 mm	5012713150793



TIG Torch Back Caps

	SIP Code	DESCRIPTION	Barcode Number
D	05146	WP17 / 18 / 26 Short Back Cap	5012713051465
D	03147	WP17 / 18 / 26 Medium Back Cap	5012713051472
D	05148	WP17 / 18 / 26 Long Back Cap	5012713051489

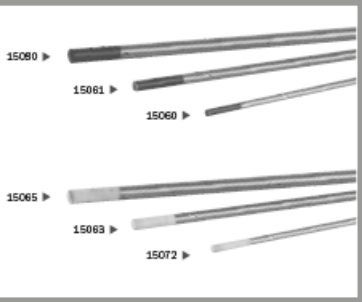


TIG 'RED' TIPS (2% Thoriated Tungstens)

SIP Code	DESCRIPTION	Barcode Number
15060	1.6 mm x 150 mm	5012713150601
15061	2.4 mm x 150 mm	5012713150618
15080	3.2 mm x 150mm	5012713150809

TIG 'WHITE' TIPS (0.9% Zirconiated Tungstens)

SIP Code	DESCRIPTION	Barcode Number
15072	Z 1.6 mm x 150 mm	5012713150724
15063	Z 2.4 mm x 150 mm	5012713150632
15065	Z 3.2 mm x 150 mm	5012713150656



UK DECLARATION OF CONFORMITY

We

SIP (Industrial Products) Ltd
Gelders Hall Road
Shepshed Loughborough
Leicestershire
LE12 9NH
England

As the manufacturer within England, Scotland and Wales, we declare that the

SIP Weldmate Pro 120A DC TIG Welder SIP Item Number 05693

Conforms to the requirements of the following regulation(s), as indicated:

Electromagnetic Compatibility Regulations 2016

Electrical Equipment (Safety) Regulations 2016

The Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment Regulations 2012

And the following harmonised standard(s):

BS EN60974-10:2014+A1:2015
BS EN IEC 60974-1:2018/AI:2019

Signed.
Mr. Paul Ippaso
Managing Director
SIP (Industrial Products) Ltd
Date: 15 June 2024

EU DECLARATION OF CONFORMITY

We

SIP Machinery Europe Ltd
Quayside Business Park
Dundalk
County Louth

As the manufacturer within England, Scotland and Wales, we declare that the

SIP Weldmate Pro 120A DC TIG Welder SIP Item Number 05693

Conforms to the requirements of the following directive(s), as indicated:

EMC 2014/30/EU

Low Voltage Directive 2014/35/EU

RoHS 2011/65/EU & 2015/863/EU

And the following harmonised standard(s):

EN60974-10:2014+A1:2015
EN IEC 60974-1:2018/AI:2019

Signed.
Mr. Paul Ippaso
Managing Director
SIP (Machinery Europe) Ltd
Date: 15 June 2024

CE

Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

Never dispose of electrical equipment or batteries in with your domestic waste. If your supplier offers a disposal facility please use it or alternatively use a recognised recycling agent. This will allow the recycling of raw materials and help protect the environment.

FOR HELP OR ADVICE ON THIS PRODUCT PLEASE CONTACT YOUR DISTRIBUTOR, OR SIP

DIRECTLY ON:
TEL: 01509 500400
EMAIL:
sales@sip-group.com
or
customerservice@sip-group.com
www.sip-group.com