



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 re-cycling agent. This will allow the recycling of raw materials and help protect the environment.



SIP INDUSTRIAL

**machinery specialists since 1968**

## 190 Amp Welder / Generator



25115

**FOR HELP OR ADVICE ON THIS PRODUCT PLEASE CONTACT YOUR DISTRIBUTOR,  
OR SIP DIRECTLY ON:  
TEL: 01509500400  
EMAIL: [sales@sip-group.com](mailto:sales@sip-group.com) or [technical@sip-group.com](mailto:technical@sip-group.com)  
[www.sip-group.com](http://www.sip-group.com)**

Ref: 290916

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

# DECLARATION OF CONFORMITY

## Declaration of Conformity

We

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

As the manufacturer's authorised representative within the EC  
declare that the


SIP 190 Amp Welder / Generator - SIP Part No. 25115

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

2006/42/EC	Machinery Directive
2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
97/68/EC	Emissions (NRMM) Directive
<small>As Amended By</small> 2012/46/EU	
2000/14/EC	Noise Directive
<small>As Amended By</small> 2005/88/EC	

**And the relevant standard(s), including:**

EN 12601:2010  
EN 55012:2007+A1:2009  
EN 61000-6-1:2007  
EN ISO 3744:1995  
ISO 8528-10:1998

Signed:  .....

Mr P. Ippaso - Managing Director - SIP (Industrial Products) Ltd  
Date: 27/09/2016.



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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.



**Hot!** A warning of parts that may become hot during normal operation.



**Flammable!** A warning that there is a risk of fire if not handled safely.



**Caution:** Exhaust fumes are poisonous. A warning that the welder generator produces poisonous gases etc. during normal operation.

## SAFETY INSTRUCTIONS



**Important:** Please read the following instructions carefully, *failure to do so could lead to serious personal injury and / or damage to the welder / Generator.*

### GENERAL SAFETY INSTRUCTIONS

When using your welder/generator, basic safety precautions should always be followed to reduce the risk of personal injury and / or damage to the machine.

Read all of these instructions before operating the welder/generator and save this user manual for future reference.

The welder/generator should *not* be modified or used for any application other than that

## NOTES

for which it was designed.

This welder/generator was designed to supply electric current to run appropriately rated electrical equipment and for 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/generator always check no parts are broken and that no parts are missing.

Always operate the welder/generator safely and correctly.

**KNOW YOUR WELDER/GENERATOR:** Read and understand the owner's manual and labels affixed to the machine. 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/GENERATOR IN DANGEROUS ENVIRONMENTS:** Do not use the welder/generator 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/GENERATOR SAFELY WHEN NOT IN USE:** The welder/generator should be stored in a dry location, out of the reach of children and drained of any fuel.

**USE SAFETY CLOTHING / EQUIPMENT:** Use a CE approved welding mask during welding operations, with the correct shade of filter lens.

**STAY ALERT:** Always watch what you are doing and use common sense. Do not operate the welder/generator when you are tired or under the influence of alcohol or drugs.

**CHECK FOR DAMAGED PARTS:** Before every use of the welder/generator, 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 COVERS / PANELS IN PLACE:** Never operate the welder/generator with any covers / panels removed, this is extremely dangerous.

**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.

**HAVE YOUR WELDER/GENERATOR REPAIRED BY A QUALIFIED PERSON:** The welder/generator 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.

- Be alert at all times, especially during repetitive, monotonous operations; Don't be lulled into a false sense of security.

## SAFETY INSTRUCTIONS...cont

- Stop operation immediately if you notice anything abnormal.
- Before starting or servicing the Welder/Generator, read and understand all instructions. Failure to follow safety precautions or instructions can cause equipment damage and/or serious personal injury. Retain all manuals for future reference.
- Never attempt to modify this Welder/Generator to perform in any manner not intended by the manufacturer.
- Use only products and parts recommended by the manufacturer For maintenance and repairs.
- Be sure that the Welder/Generator is properly grounded to an external ground path prior to operation. Refer to the section entitled " Grounding Instructions " for proper grounding procedures.
- Be sure that the Welder/Generator is operated only by persons who have read and who understand these instructions.
- Be sure that the Welder/Generator is placed on a flat level surface prior to and during operation. The Welder/Generator must not slide or shift during operation.
- Keep all untrained persons away from the Welder/Generator during operation.
- Do not allow persons wearing loose clothing or jewellery to start or operate the Welder/Generator. Loose clothing or jewellery may become entangled in moving components, causing equipment damage and/or personal injury.
- Be aware of moving parts and hot surfaces that occur during normal operation of this Welder/Generator.
- Be sure all devices are switched off prior to connecting them to the Welder/Generator.
- Be sure that all tools and appliances are in good working order and are correctly grounded (where applicable).
- Only use devices that have standard three pin plugs. If an extension cord is used, be sure that it has three pin plug/socket for proper grounding.
- Never operate the Welder/Generator with damaged, broken or missing parts, or with any guards or covers removed.
- Do not refill the fuel tank while the engine is running.
- Allow engine to cool for at least two minutes before refuelling.
- Be careful to prevent fuel spillage during refills.
- Be sure the fuel tank cap is securely in place before starting the engine.
- Never refuel whilst smoking or in the vicinity of a naked flame, or other sources of ignition.
- Take care not to spill any fuel on the engine, exhaust or any part of the Welder/Generator.
- Should any fuel make contact with your clothes; change and wash them immediately.
- Read the safety data sheet for the fuel; Ensure the operator is aware of the risks and precautions related to the fuel.
- If any fuel makes contact with your skin wash with soap and water immediately.

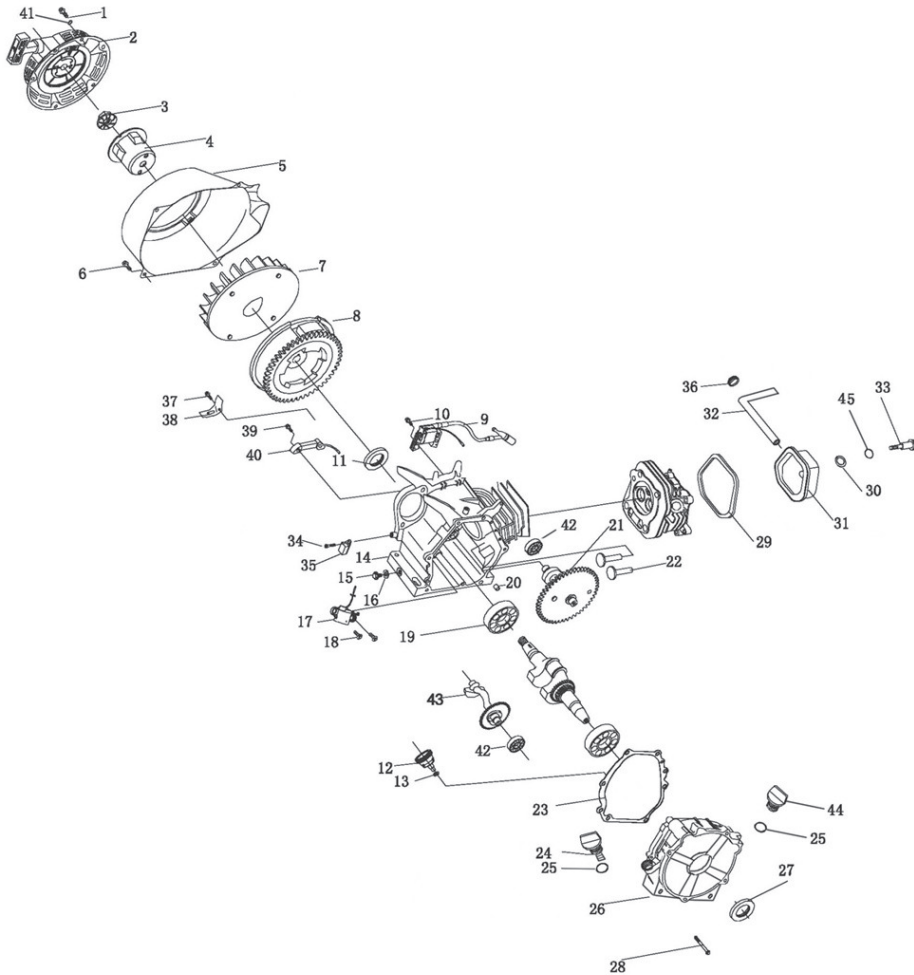
## PARTS LIST

### ENGINE

Ref. No.	Description	SIP Part No.	Ref. No.	Description	SIP Part No.
H1.	Bolt	PW01-00685	H23.	Gasket	PW01-00706
H02.	Recoil Starter	PW01-00686	H24.	Oil Gauge	PW01-00707
H03.	Nut	PW01-00687	H25.	Ring Seal	PW01-00708
H04.	Starter Pulley	PW01-00688	H26.	Crankcase Cover	PW01-00709
H05.	Wind Leader	PW01-00689	H27.	Oil Seal	PW01-00710
H06.	Bolt	PW01-00690	H28.	Flange	PW01-00711
H07.	Fan	PW01-00691	H29.	Gasket	PW01-00712
H08.	Flywheel	PW01-00692	H30, 31, 32, 33.	Rocker Cover Assembly	PW01-00713
H09.	Igniter	PW01-00693	H34.	Bolt	PW01-00714
H10.	Bolt	PW01-00694	H35.	Insulator	PW01-00715
H11.	Oil Seal	PW01-00695	H36.	Rubber Band	PW01-00716
H12, 13.	Governor Assembly	PW01-00696	H37.	Bolt	PW01-00717
H14.	Crankcase	PW01-00697	H38.	Board	PW01-00718
H15.	Flanged Bolt	PW01-00698	H39.	Bolt	PW01-00719
H16.	Washer	PW01-00699	H40.	Magneto	PW01-00720
H17.	Oil Alert	PW01-00700	H41.	Washer	PW01-00721
H18.	Bolt	PW01-00701	H42.	Bearing	PW01-00722
H19.	Bearing	PW01-00702	H43.	Balancer Shaft	PW01-00723
H20.	Locating Ring	PW01-00703	H44.	Oil Cap	PW01-00724
H21.	Camshaft	PW01-00704	H45.	Washer Head Cover	PW01-00725
H22.	Valve Lifter	PW01-00705			

## EXPLODED DRAWING

### ENGINE



## SAFETY INSTRUCTIONS...cont

- Be sure to store petrol in clean containers that do not contain water, dirt or rust as these contaminants could enter the engine which will reduce the life of the engine, and may void your warranty.
- Always follow local laws / regulations regarding the storage of fuels.
- Never operate this Welder/Generator in an explosive atmosphere or near any flammable sources.
- Always operate this Welder/Generator in a well ventilated area to reduce the risk of suffocation.
- Shut off the Welder/Generator engine and disconnect the spark plug and battery wire before performing any service or maintenance to the unit.
- Do not operate this Welder/Generator on wet surfaces, in wet environments or in the rain.
- Do not operate the Welder/Generator or any electrical items with wet hands.
- Never drag the Welder/Generator with power cords or by any means to move it; only move the Welder/Generator with the handles.
- Never cover the Welder/Generator or restrict the exhaust or air flow in any way.
- Always ensure that the Welder/Generator is at least 1 m (3ft) away from any walls or buildings to allow correct air flow.
- Do not connect this Welder/Generator to a commercial power supply.
- Do not connect this Welder/Generator in parallel with any other generator.
- Ensure that anything connected to the generator is in good working order and has the correct voltage and frequency.
- 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.



During normal operation certain parts of this generator will become hot. **ALWAYS** stay alert and be aware of hot components / surfaces. Allow the engine to cool before attempting to move, clean or maintain the generator.



There is a very real risk of electric shock if this welder / generator is not used in the correct manner. **NEVER** Use the generator or anything connected to it in wet conditions.



**Caution:** Never attempt to connect the generator directly to the electrical system of any building / structure which is connected to the main grid.



## SAFETY INSTRUCTIONS...cont

Electrical current from the generator may "back feed" into the home's electrical system.

It could cause damage or fire to the building, the generator as well as anything connected to it.

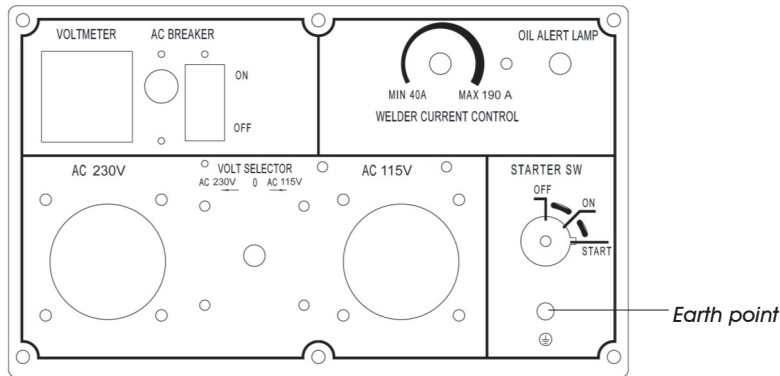
Should a generator be required to be connected to any electrical system, it must be installed by a suitably qualified electrician who can warn you of any dangers that may occur.

Incorrectly installed generators can also cause personal injury. For example, if a power company employee is working on an electrical line believing it to be "dead" and current created by the generator is in the line, shock or electrocution may occur.

The key to better safeguard against these dangers is professional installation by a qualified electrician and the installation of a generator transfer switch.

Keep in mind a generator burns fuel and must be run in a well ventilated area, it must not be run in a garage or other outbuilding.

Cords used to connect the generator to the lights and appliances must be correctly sized to prevent overheating or damage to the equipment as well, again if you are unsure ask a suitably qualified electrician.



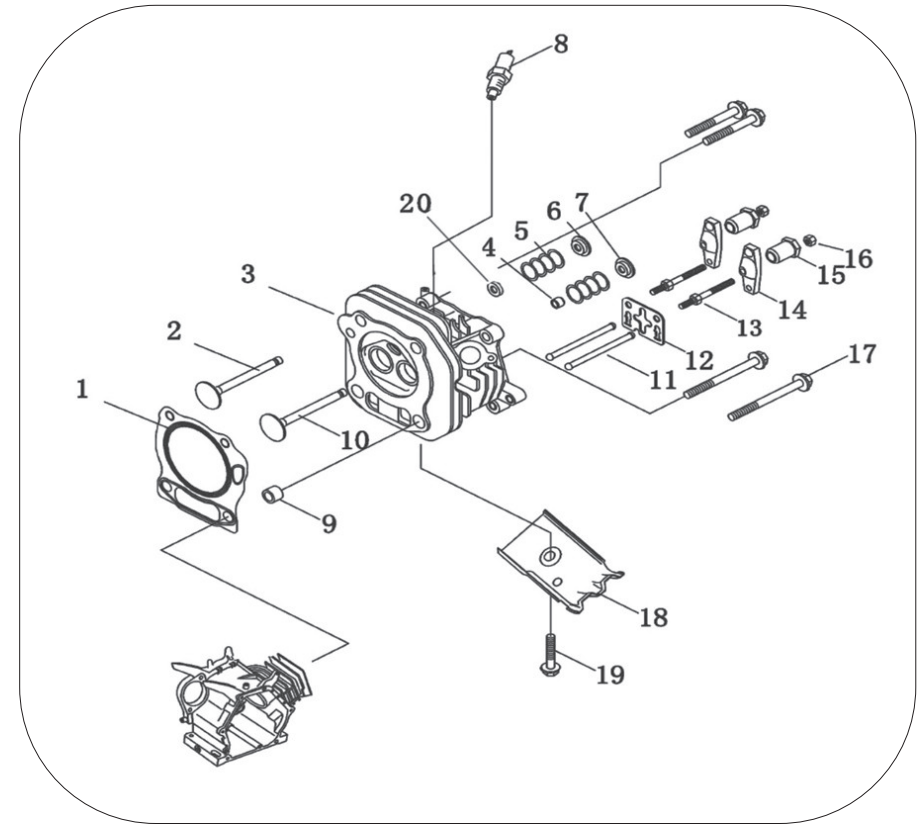
Front Panel

### Grounding instructions:

1. Use the ground terminal (see picture above) on the generator to connect the unit to a suitable ground source. Securely fasten the end terminal of the ground wire to the ground terminal on the generator.
2. The ground wire should be made of more than 0.75 square millimetre wire. Too thin wire may not provide an adequate ground path.
3. The other end of the ground wire must be securely fastened to an approved ground source. Refer to the local regulations for ground source information. If not sure of regulations or procedures, obtain assistance from a qualified (licensed or certified) electrical technician.

## EXPLODED DRAWING / PARTS LIST

### CYLINDER HEAD ASSEMBLY

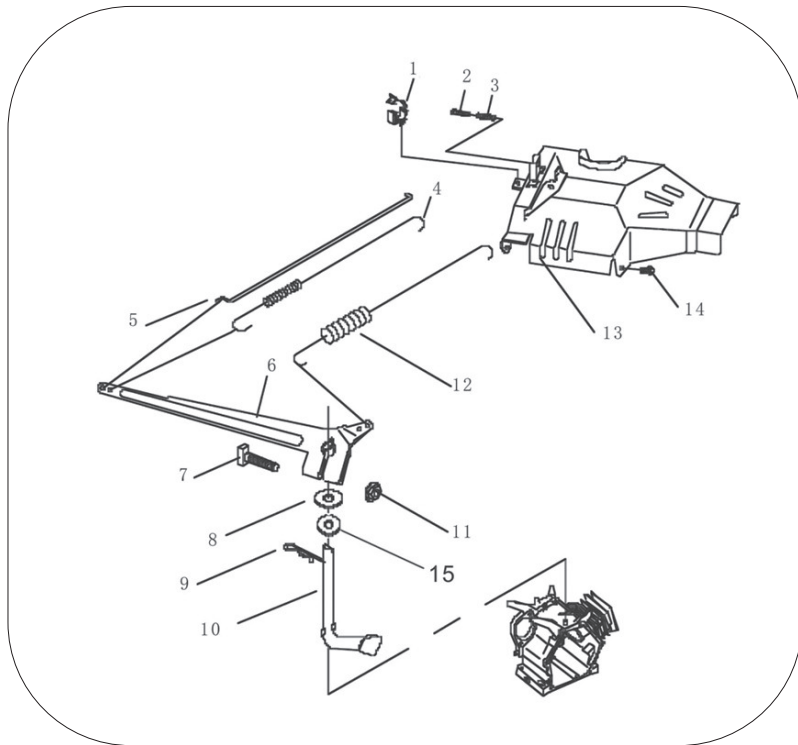


Ref. No.	Description	SIP Part No.	Ref. No.	Description	SIP Part No.
G01.	Washer	PW01-00668	G10.	Exhaust Valve	PW01-00677
G02.	Intake Valve	PW01-00669	G11.	Push Rod	PW01-00678
G03.	Cylinder Head	PW01-00670	G12.	Push Rod Guide	PW01-00679
G04.	Exhaust Valve Bush	PW01-00671	G13, G14, G15, G16.	Rocker Assembly	PW01-00680
G05.	Valve Spring	PW01-00672	G17.	Bolt	PW01-00681
G06.	Intake Valve Retainer	PW01-00673	G18.	Wind Guide	PW01-00682
G07.	Exhaust Valve Retainer	PW01-00674	G19.	Bolt	PW01-00683
G08.	Spark Plug	PW01-00675	G20.	Oil Seal Intake	PW01-00684
G09.	Locating Ring	PW01-00676			



## EXPLODED DRAWING / PARTS LIST

### GOVERNOR ASSEMBLY



Ref No.	Description	SIP Part No.	Ref No.	Description	SIP Part No.
F01.	Clamp	PW01-00653	F09.	Clip	PW01-00661
F02.	Screw	PW01-00654	F10.	Governor Shaft	PW01-00662
F03.	Spring	PW01-00655	F11.	Nut	PW01-00663
F04.	Spring	PW01-00656	F12.	Spring	PW01-00664
F05.	Link Rod	PW01-00657	F13.	Wind Guide	PW01-00665
F06.	Governor Arm	PW01-00658	F14.	Bolt	PW01-00666
F07.	Bolt	PW01-00659	F15.	Governor Shaft Oil Seal	PW01-00667
F08.	Washer	PW01-00660			

## SAFETY INSTRUCTIONS...cont



The fuel used to run this generator (unleaded petrol) is highly flammable. Never re-fuel the generator whilst it is still running. Store un used fuel safely and away from children.



**Caution:** Exhaust fumes are poisonous. Do not operate this generator in enclosed areas.

### WELDER SPECIFIC SAFETY INSTRUCTIONS

#### ELECTRIC SHOCK

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

#### FIRE

During normal operation, the heat and sparks created during the welding process have the potential to ignite flammable liquids, gases or other combustible material.

## SAFETY INSTRUCTIONS....cont

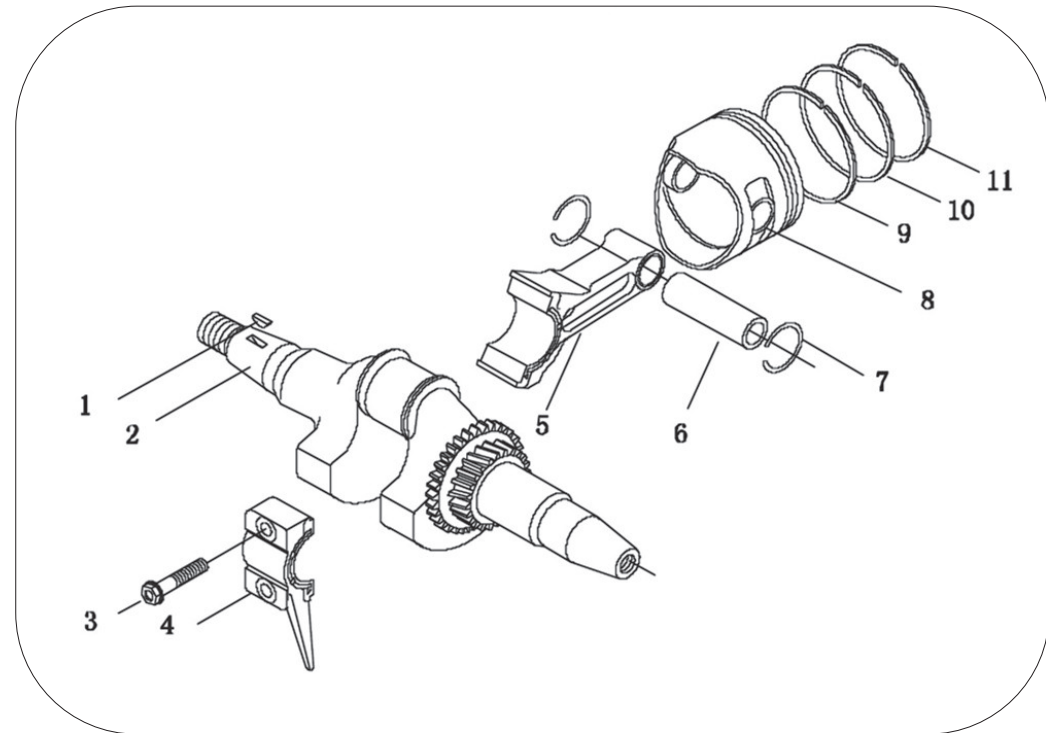
- All inflammable materials must be removed from the area.
- Have a suitable fire extinguisher available close by.
- Causes of fire and explosion include; combustibles reached by the arc, flame, flying sparks, hot slag or heated material, misuse of compressed gases and cylinders and short circuits.
- Flying sparks or falling slag can pass through cracks along pipes, through windows or doors and through walls or floor openings and out of sight of the operator; Sparks and slag can fly up-to 10 metres.
- Keep equipment clean and operable; Free of oil, grease and of metallic particles (in electrical parts) that can cause short circuits.
- If combustibles are in the area. **Do not** weld, move the work if practical to an area free of combustibles, avoid paint spray rooms, dip tanks, storage areas and ventilators. If the work can not be moved, then move the combustibles at 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).

## GLARE AND BURNS

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.

## EXPLODED DRAWING / PARTS LIST

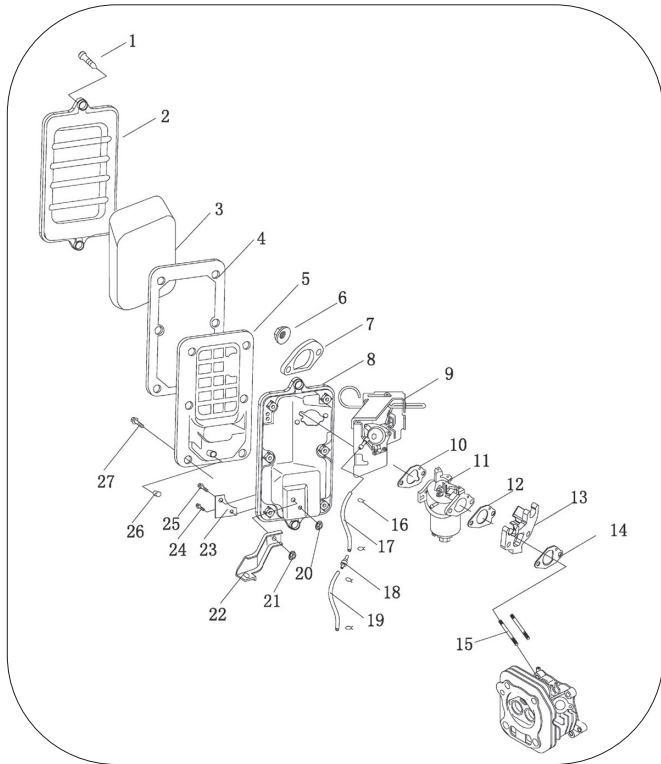
### CRANKSHAFT



Ref No.	Description	SIP Part No.	Ref No.	Description	SIP Part No.
E01.	Key	2	E06.	Piston Pin	1
E02.	Crank	1	E07.	Piston Pin Clip	1
E03.	Bolt	1	E08.	Piston	1
E04, E05.	Con-Rod Assembly	4	E09, E10, E11.	Piston Ring Set	1

## EXPLODED DRAWING / PARTS LIST

### AIR / FUEL INLET CONTROL



Ref No.	Description	SIP Part No.	Ref No.	Description	SIP Part No
D01-D08.	Air Filter Complete	PW01-00620	D13.	Gasket	PW01-00633
D01.	Screw	PW01-00621	D14.	Gasket	PW01-00634
D02.	Front Cover	PW01-00622	D15.	Stud	PW01-00635
D03.	Element	PW01-00623	D16 x 4, D17, D18, D19.	Breather Pipe Assembly	PW01-00636
D04.	Washer	PW01-00624	D20.	Flange Nut	PW01-00637
D05.	Element Fitting Plate	PW01-00625	D21.	Nut	PW01-00638
D06.	Flange	PW01-00626	D22.	Bracket	PW01-00639
D07.	Plate	PW01-00627	D23.	Gasket	PW01-00640
D08.	Rear Cover	PW01-00628	D24.	Screw	PW01-00641
D09.	Choke Air Valve	PW01-00629	D25.	Screw	PW01-00642
D10.	Gasket	PW01-00630	D26.	Nut	PW01-00643
D11.	Carburettor	PW01-00631	D27.	Screw	PW01-00644
D12.	Gasket	PW01-00632			

## SAFETY INSTRUCTIONS...cont

- 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 workpieces 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

- Ventilation must be adequate to remove the smoke and fumes during welding (see the relevant safety standard for acceptable levels).
- 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 U.V 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 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

## SAFETY INSTRUCTIONS....cont

- 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 cylinders 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 decompose trichloroethylene and perchlorethylene vapours to form phosgene. **Do not weld** where solvent vapours can be drawn into the welding atmosphere, or where the radiant energy can penetrate to atmospheres containing even minute amounts of trichloroethylene or perchlorethylene.



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.



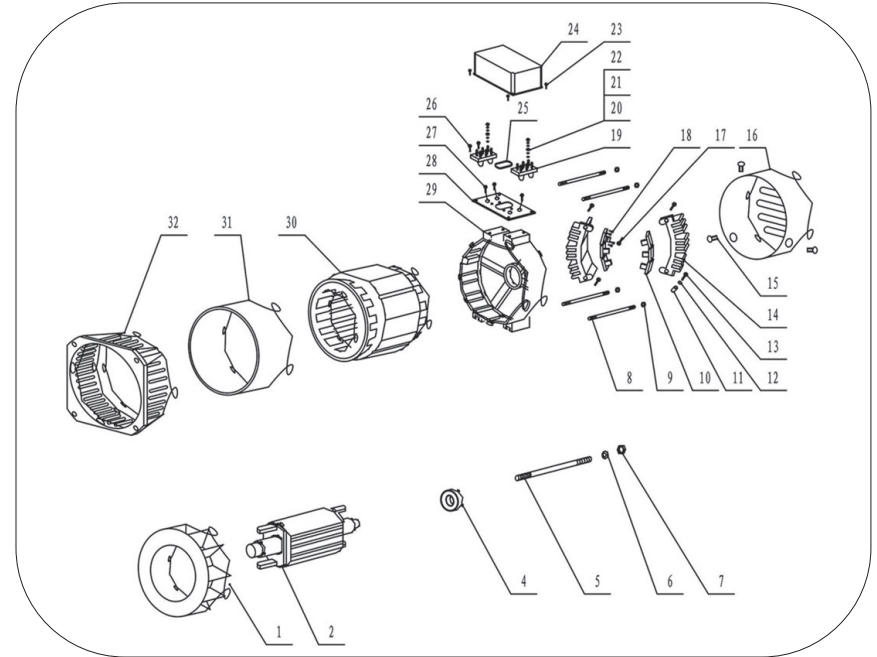
Some metals and metal composites have the potential to be highly toxic; always wear a face mask.



**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.

## EXPLODED DRAWING / PARTS LIST

### ALTERNATOR



Ref. No.	Description	SIP Part No.	Ref. No.	Description	SIP Part No.
B01.	Cooling Fan	PW01-00554	B18.	Bolt	PW01-00570
B02.	Rotor	PW01-00555	B19.	Terminals	PW01-00571
B04.	Bearing	PW01-00556	B20.	Washer	PW01-00572
B05.	Screw	PW01-00557	B21.	Spring Washer	PW01-00573
B06.	Washer	PW01-00558	B22.	Nut	PW01-00574
B07.	Nut	PW01-00559	B23.	Screw	PW01-00575
B08.	Bolt	PW01-00560	B24.	Junction Box	PW01-00576
B09.	Nut	PW01-00561	B25.	Outlet	PW01-00577
B10.	Diode	PW01-00562	B26.	Screw	PW01-00578
B11.	Rubber	PW01-00563	B27.	Screw	PW01-00579
B12.	Washer	PW01-00564	B28.	Junction Plank	PW01-00580
B13.	Screw	PW01-00565	B29.	Cover	PW01-00581
B14.	Heat Sink	PW01-00566	B30.	Stator	PW01-00582
B15.	Bolt	PW01-00567	B31.	Enclosing Band	PW01-00583
B16.	Rear Cover	PW01-00568	B32.	Drive End Bracket	PW01-00584
B17.	Bolt	PW01-00569			

## PARTS LIST

### MAIN PARTS

Ref. No.	Description	SIP Part No.	Ref. No.	Description	SIP Part No.
A1.	Engine	PW01-00490	A34.	Spring Washer	PW01-00523
A2.	Flange	PW01-00491	A35.	Nut	PW01-00524
A3.	Screw	PW01-00492	A36.	Frame	PW01-00525
A4.	Nut	PW01-00493	A37.	Right Cover	PW01-00526
A5.	Spring Washer	PW01-00494	A38.	Screw	PW01-00527
A6.	Screw	PW01-00495	A39.	Hand Handle	PW01-00528
A7.	Screw	PW01-00496	A40.	Nut	PW01-00529
A8.	Washer	PW01-00497	A41.	Hand Handle Piece	PW01-00530
A9.	Nut	PW01-00498	A42.	Screw	PW01-00531
A10.	Generator	PW01-00499	A43.	Mat Slice	PW01-00532
A11.	Screw	PW01-00500	A44.	Nut	PW01-00533
A12.	Muffler	PW01-00501	A45.	Top Cover	PW01-00534
A13.	Screw	PW01-00502	A46.	Nut	PW01-00535
A14.	Nut	PW01-00503	A47.	Bush	PW01-00536
A15.	Spring Washer	PW01-00504	A48.	Rubber Gasket	PW01-00537
A16.	Muffler Gasket	PW01-00505	A49.	Washer	PW01-00538
A17.	Muffler Connection Pipe	PW01-00506	A50.	Screw	PW01-00539
A18.	Rubber	PW01-00507	A51.	Fuel Tank	PW01-00540
A19.	Screw	PW01-00508	A52.	Filter Net	PW01-00541
A20.	Bottom	PW01-00509	A53.	Rubber Gasket	PW01-00542
A21.	Nut	PW01-00510	A54.	Fuel Cap	PW01-00543
A22.	Front Cover	PW01-00511	A55.	Fuel Gauge	PW01-00544
A23.	Screw	PW01-00512	A56.	Fuel Cock	PW01-00545
A24.	Battery	PW01-00513	A57.	Rear Cover	PW01-00546
A25.	Tie Down Hooks	PW01-00514	A58.	Left Cover	PW01-00547
A26.	Battery Tie Down	PW01-00515	A59.	Wheel	PW01-00548
A27.	Nut	PW01-00516	A60.	Washer	PW01-00549
A28.	Spring Washer	PW01-00517	A61.	Split Pin	PW01-00550
A29.	Screw	PW01-00518	A62.	Axle	PW01-00551
A30.	AVR	PW01-00519	A63.	Fuel Tube	PW01-00552
A31.	Isolator	PW01-00520	A64.	Clamp	PW01-00553
A32.	Screw	PW01-00521	N/A	Starter Motor	PW01-00726
A33.	Washer	PW01-00522	N/A	Starter Motor Solenoid	PW01-00727

## TECHNICAL SPECIFICATIONS

Name	SIP 190amp Welder / Generator
Part Number	25115
Engine Type	4-stroke, single cylinder, air cooled, OHV
Engine Size	15 HP / 420 cc
Fuel Type	Unleaded petrol
Oil Type	SAE 10W-30
Oil Capacity	1.1 Litre (approx.)
Starting System	Recoil or Electric
Fuel tank capacity	25 litres (approx.)
AC voltage	230V / 115V ~ 50hz
Rated Output (peak)	5500 W
Rated output (continuous)	5000 W
Welding Current	60 - 190 A
Welding Voltage	22.4 - 27.6 V DC
Performance class	G1
Quality Class	B
Sound power (LwA)	97 dB(A)
Max. Ambient Temperature	40°C
Max. Altitude	1000M
Protection Class	IP23M

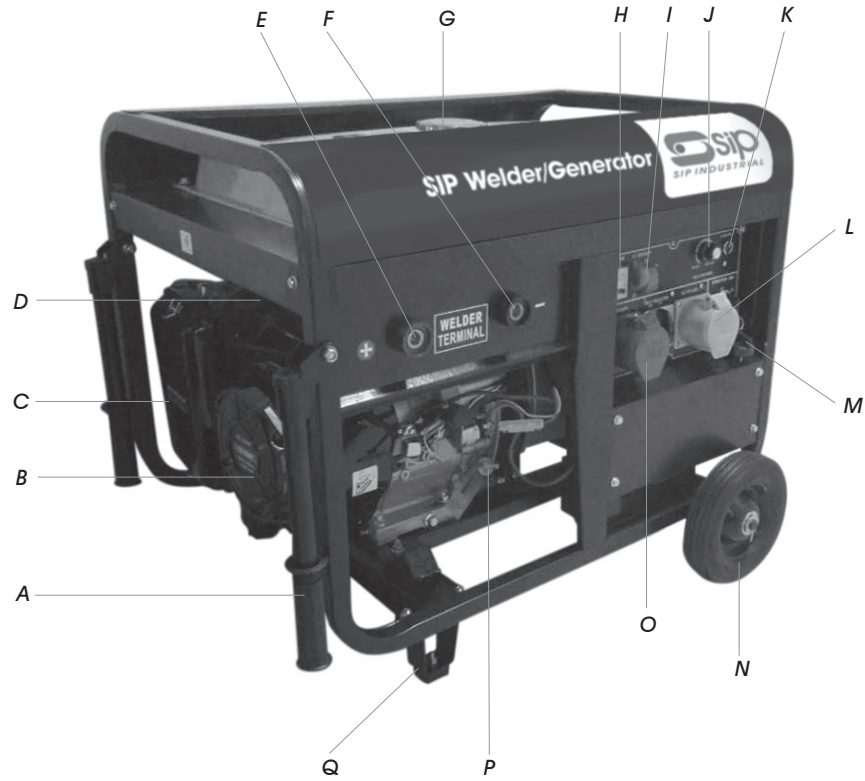
## CONTENTS & ACCESSORIES

Main Generator Unit  
 Instruction Manual  
 Box Spanner (for spark plug removal)  
 Wheel (2)  
 Foot (2)  
 Axle (with brackets)  
 Handle (2)  
 Fixing Kit  
 Start Key  
 Welding Set  
 Oil Funnel

*If any of these items are missing contact your distributor immediately.*



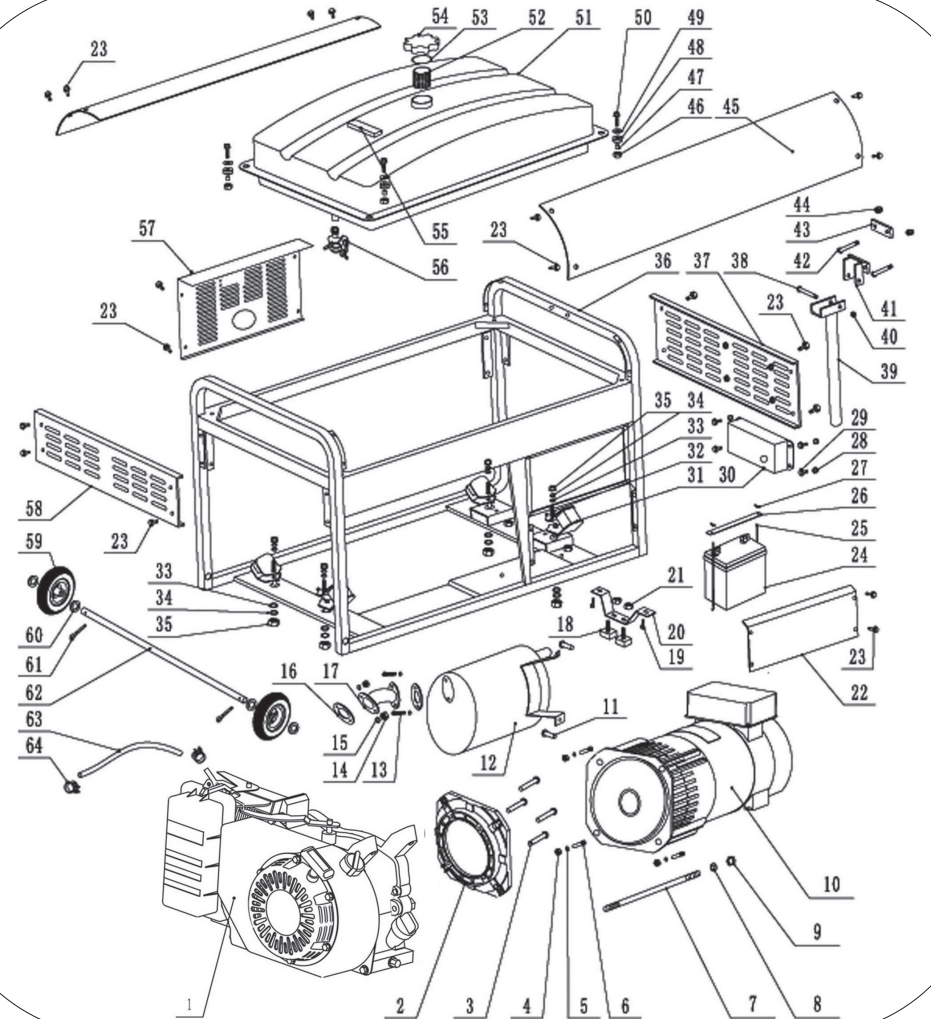
## GETTING TO KNOW YOUR WELDER / GENERATOR



Ref:	Description	Ref:	Description
A.	Handle	J.	Welding Output Control
B.	Recoil Assembly	K.	Low Oil Alert
C.	Air Filter Assembly	L.	AC ~ 115v Outlet
D.	Fuel On / Off Tap	M.	Engine Start / Stop Key
E.	Positive Welding Terminal	N.	Wheel
F.	Negative Welding Terminal	O.	AC ~ 230v Outlet
G.	Fuel Cap	P.	Oil Filler Plug
H.	Output Volt meter	Q.	Foot
I.	AC ~ Overloads		

## EXPLODED DRAWING

### MAIN PARTS



## MAINTENANCE

Part	Action	Before each use	First month or 20 hours	Every 3 months or 50 hours	Every 6 months or 100 hours	Every 12 months or 300 hours
Spark plug	Check condition / gap (0.7-0.8mm).			•		
Oil	Check the oil level / condition.	•				
Valve clearance	Check gaps.					•
Fuel line	Check fuel line for cracks / damage.	•				
Exhaust system	Check for leaks.	•				
Carburettor	Check choke lever operation.	•				
Cooling fan	Check for damage.					•
Starting system	Check for correct operation.	•				
Air filter	Check for contamination.			•		
Head bolts etc.	Check and tighten.				•	



**Caution:** Any repairs / adjustments should only be attempted by a suitably qualified person; if you are unsure call the help-line number on the back page for your nearest technician.

## ELECTRICAL CONNECTIONS

### Connecting tools etc. to the generator:

This welder / generator is fitted with 2 standard 32 amp type sockets (1 x 115V~ & 1 x 230V~). Inspect them, as well as anything to be connected to the generator, to ensure that no damage is present before every use. If any damage is visible have the socket / equipment inspected / repaired by a suitably qualified person.

### The wires in the plug are coloured in the following way:

Yellow / green	Earth
Blue	Neutral
Brown	Live

As the colours of the wires may not correspond with the markings in your plug, proceed as follows: The wire which is coloured blue, must be connected to the terminal marked with N or coloured black. The wire which is coloured brown, must be connected to the terminal, which is marked L or coloured red. The wire which is coloured yellow / green should be connected to the terminal which is coloured the same or marked  $\perp$ .

Always secure the wires in the plug terminal carefully and tightly. Secure the cable in the cord grip carefully.



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



**Note:** If an extension lead is required in order to reach the generator; ensure that this too is rated for the correct voltage and current.



**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

### Guarantee:

This SIP welder / generator is covered by a 12 month parts and labour warranty covering failure due to manufacturers defects. This does not cover failure due to misuse or operating the welder / generator 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 and maintain your welder / generator will shorten its working life, reduce performance and may invalidate the warranty.

The warranty does not cover consumable items such as spark plugs, filters and electrode holders & clamps etc.



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

## ASSEMBLY INSTRUCTIONS

### FITTING THE WHEEL KIT



**Note:** The wheel kit should be fitted prior to filling the generator with fuel and oil to avoid unwanted spillages.



- Line the holes on the handle with the corresponding ones on the frame (see above left).
- Fit the bolt through the holes and secure in place by tightening the nut.
- Follow these instructions for the 2nd handle.

## OPERATING INSTRUCTIONS...cont

### WELDING



**Caution:** Ensure all protective equipment is worn and bystanders are not in the vicinity.

- Connect the electrode lead and earth lead to the correct terminal on the front of the welder.
- Fit the required electrode securely into the electrode holder.
- Switch the welder on.
- Set the amperage control to match your electrode size.
- Set the arc force to the required setting.
- Select the ARC welding mode; Press the mode selector switch up on the front of the welder.



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

- Place a face mask (not supplied) over your face.
- Bring the electrode into contact with the workpiece using a light tapping action and withdrawing to create a gap of 1.5 mm – 3.0 mm.
- When the arc is created, proceed steadily in one direction keeping the gap between the electrode and the workpiece constant.
- When the weld is complete simply remove the electrode from the workpiece.
- Remove any excess weld / slag with a wire brush / hammer (not supplied).

## OPERATING INSTRUCTIONS...cont

### OPERATING THE WELDER



**Caution:** *Never* operate the generator function at the same time as the welding function!

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 below 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)
2.0	1.6 - 2.6	40 - 70
2.5	2.6 - 4.0	60 - 100
3.25	3.0 - 5.0	80 - 130
4.0	5.0 - 7.0	130 - 190



**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.

### AMPERAGE CONTROL

The welder should be set to a specific amperage to match the electrode size (see above table).

The amperage control is operated by rotating the knob on the front of the welder; Rotate the knob clockwise to increase the amperage and anticlockwise to reduce the amperage. Once the amperage control is set do a short weld and check for correct fusion.

### 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.

## ASSEMBLY INSTRUCTIONS...cont

- Line up the holes on the foot with the corresponding ones at the bottom of the frame, at the same end as the handles (see above, centre).
- Secure in place by fitting 2 bolts through the holes and tightening the nuts.
- Follow these instructions to fit the 2nd foot to the opposite side.
- Line up the holes on the axle with the holes at the opposite end, at the bottom of the frame (see above, right).
- Secure in place by fitting 2 bolts through the holes and tightening the nuts.
- Follow these instructions to secure the opposite end of the axle.



- Slide a wheel, then a washer over the axle (see right).
- Slide a split pin through the hole on the axle, and bend the pin as shown to secure the wheel in place.
- Follow these instructions to fit and secure the opposite wheel.

## OPERATING INSTRUCTIONS

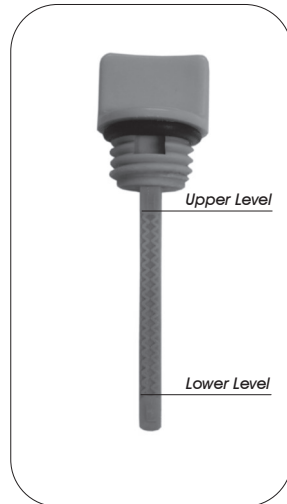
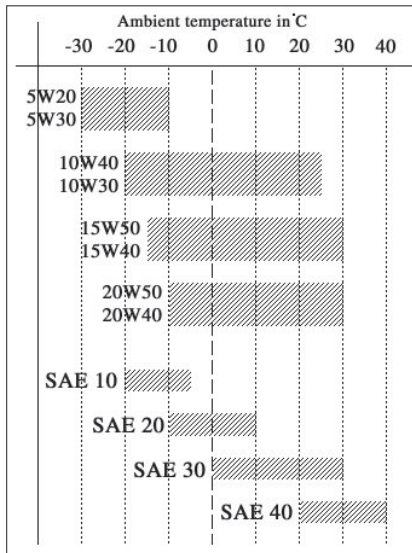


**Caution:** Before you operate the generator **ALWAYS** check that no damage is present and that everything that should be, is tight and secure.

### FILLING THE CRANKCASE WITH OIL / CHECKING THE OIL LEVEL

*This generator is shipped from the factory without oil in the crankcase.*

- Engine oil is a major factor affecting engine performance and service life. Non-detergent oils and vegetable oils are not recommended.
- Use premium quality 4-stroke engine oil.
- Do not add commercial additives to the recommended oil and do not mix petrol with the oil.
- SAE 10W-30 is recommended for general, all-temperature use.
- Other viscosities shown in the chart (below left) may be used when the average ambient temperature in your area is within the indicated range.



- Check the oil level in the crankcase of the engine before each start.
- The oil level should be positioned between the lower and upper level marks on the oil filler cap (oil gauge) (see above right).

*The Oil capacity is approximately 1.1L.*

## OPERATING INSTRUCTIONS...cont



**Note:** it may take a few sharp pulls to get the engine started.



**Note:** Allow the engine to run with no load applied for a few minutes to allow the engine to come up to running temperature.



**Note: Breaking the engine in.**

The first 25 hours of operation is considered the break-in period for the engine. During this time operate at less than 75% of the load limit.

### STOPPING THE ENGINE

*In an emergency:*

- Turn the key to the 'OFF' position and the engine will stop.

*In normal conditions:*

- Remove any loads that may be connected (welding leads or AC devices).
- Turn the key to the off (0) position.
- Turn the fuel tap to the off position.

### OPERATING THE GENERATOR



**Caution: Never** operate the generator function at the same time as the welding function!

- ⇒ Once the engine is running and warm enough, select the desired voltage by pressing the voltage selection switch left for 230V ~ or right for 115V ~.
- ⇒ Connect the load (device).
- ⇒ Turn the relevant breaker on.

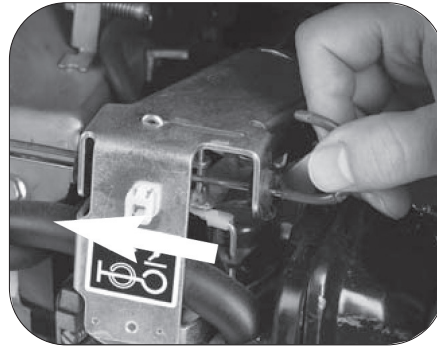


Ensure all devices are switched off prior to connecting them to the generator.

## OPERATING INSTRUCTIONS...cont

### Step 4:

⇒ Once the engine is running and warm enough, push the choke lever to the run position.



**Note:** Allow the engine to run with no load applied for a few minutes to allow the engine to come up to running temperature.



**Note: Breaking the engine in.**

The first 25 hours of operation is considered the break-in period for the engine. During this time operate at less than 75% of the load limit.

### STARTING THE ENGINE - RECOIL START



**Caution:** Never start the engine with any load connected to the generator or welder.

Follow steps 1 & 2 from 'STARTING THE ENGINE - ELECTRIC START'.

### Step 3:

⇒ Turn the key to the 'ON' position.



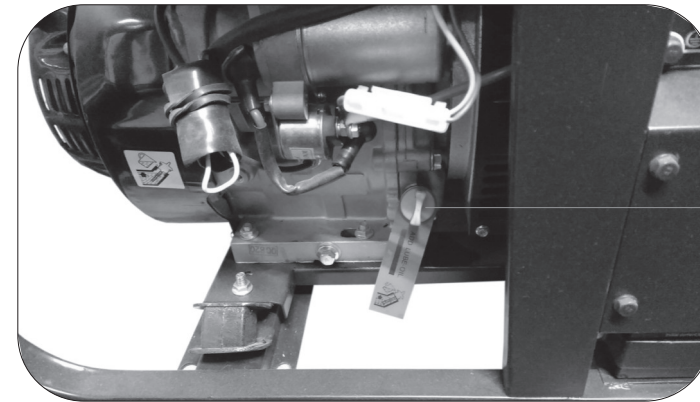
### Step 4:

- ⇒ With one hand, firmly hold the frame of the generator.
- ⇒ With the other hand, slowly pull the recoil start cord until it engages, then pull sharply until the engine starts.

## OPERATING INSTRUCTIONS...cont



**Caution:** Be sure oil level is maintained. Failure to do so will invalidate any warranty you may have.



filler cap  
(oil gauge)

To fill the crankcase with oil proceed as follows:

- Ensure that the generator is on a flat level surface.
- Remove the filler cap (oil gauge) by turning it anti-clockwise.
- Slowly pour the oil into the crankcase.
- Check the oil level by pushing the filler cap back into its hole up to the bottom of the threads (do not screw the cap in).
- Once the oil level is between the upper and the lower marks on the oil gauge (see page 13), replace it and turn clockwise to fully tighten.

The oil level should be checked every 8 hours or daily.

The oil should be **changed** after the first 8 hours of operation; thereafter change the oil after 50 hours of operation or less if the generator is operated under constant heavy loads or in high ambient temperatures.

### FUELLING / RE-FUELLING THE GENERATOR



**Caution:** Petrol is highly flammable; never re-fuel the generator whilst it is running. Do not re-fuel near naked flames or other possible ignition sources.



## OPERATING INSTRUCTIONS...cont

The amount of fuel can be checked by the fuel meter on the top of the tank.

- ⇒ When the tank is empty; the window will be all white (see top right).
- ⇒ As the tank is filled; the orange indicator will move across the indicator window (see bottom right).

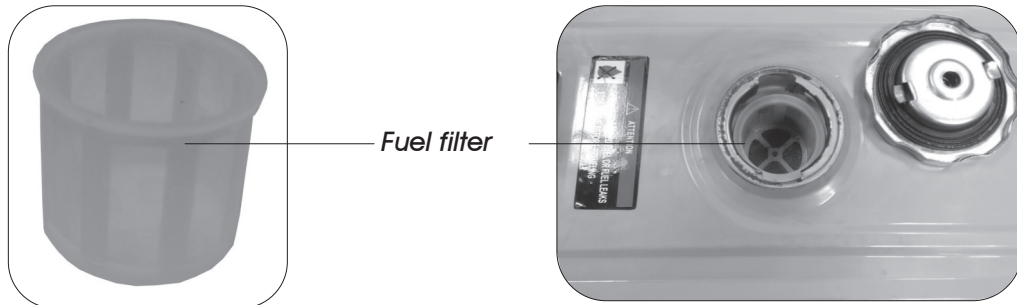


**i** Never overfill the fuel tank; leave a small air gap at the top.  
**Fuel capacity: approx. 25 Litres.**

**⚠** **Petrol is highly flammable.** Never re-fuel the generator whilst it is still running; allow it to cool for a few minutes and avoid other ignition sources that may be present. Only re-fuel in a well ventilated area as petrol fumes can be dangerous if inhaled or ignited.



**i** **Note:** When re-fuelling always ensure that the fuel filter (supplied) is in place as foreign matter or debris will cause damage to the engine and greatly reduce the life of the generator.



### To re-fuel the generator:

1. Remove the fuel cap.
2. Carefully pour the petrol into the tank to the desired level and replace the fuel cap.
3. Remove any spilt fuel from the generator and surrounding area to avoid any risk of fire.

The generator should now be ready to run.

## OPERATING INSTRUCTIONS...cont

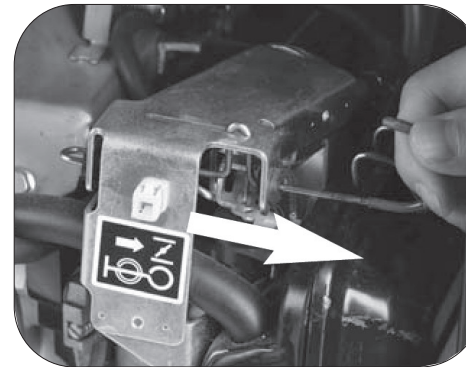
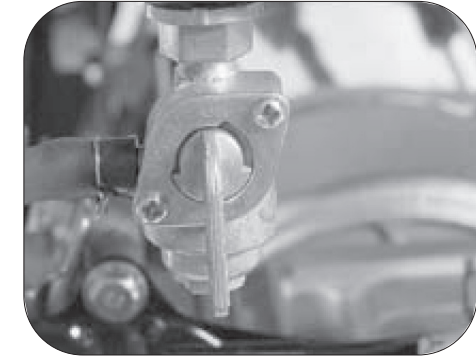
### STARTING THE ENGINE - ELECTRIC START



**Caution:** Never start the engine with any load connected to the generator or welder.

#### Step 1:

- ⇒ Turn the fuel tap to the on position.



#### Step 2:

- ⇒ Move the choke lever to the "choke" position.



**Note:** The choke may not be needed if the engine is already warm.

#### Step 3:

- ⇒ Turn the key on to start position, the starter motor will engage and the engine should start.
- ⇒ Once the engine has started release the key to the on position immediately.