



INDUSTRIAL EQUIPMENTS PVT. LTD.

EcoDrive 1800

Portable Petrol Welding Generator

180 A welding | 1.6 – 3.2 mm electrodes | 3.0 kW auxiliary power | 7.0 HP 4-stroke engine



USER MANUAL

Read this manual carefully before using the machine. Keep it with the machine.

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1 Safety instructions

▲ **WARNING - exhaust gas contains carbon monoxide**

Operate the EcoDrive 1800 only outdoors or in a very well-ventilated place. Petrol engine exhaust contains carbon monoxide (CO), hydrocarbons (HC) and other harmful substances. Never run it indoors, in a closed garage, a tank or a trench.

1. Stop the engine before adding fuel or oil.
2. There must be no fire hazards – welding sparks, smoking or open flames – near the generator while it is running or being refuelled. Keep the machine at least 1 m from buildings and other equipment.
3. Check the fuel hose before use. If it shows cracks or other damage, replace it before operating the machine.
4. Keep away from any source of ignition when filling fuel. Switch the engine off and let it cool for 30 minutes before refuelling. Wipe up any spilled fuel immediately.
5. Earth the generator frame before welding or using the auxiliary socket. Do not operate the machine in rain or with wet hands, and do not touch the electrode, holder or output terminals while the engine is running.
6. Wear a welding helmet with the correct filter shade, leather gloves, a flame-retardant jacket and safety shoes when welding. Protect bystanders from arc radiation and spatter.
7. The muffler and engine become very hot. Do not touch them during operation or until they have cooled down, and keep flammable materials away.
8. Do not connect the auxiliary socket to a building's mains wiring. Keep children and untrained persons away from the machine.

2 Introduction of parts

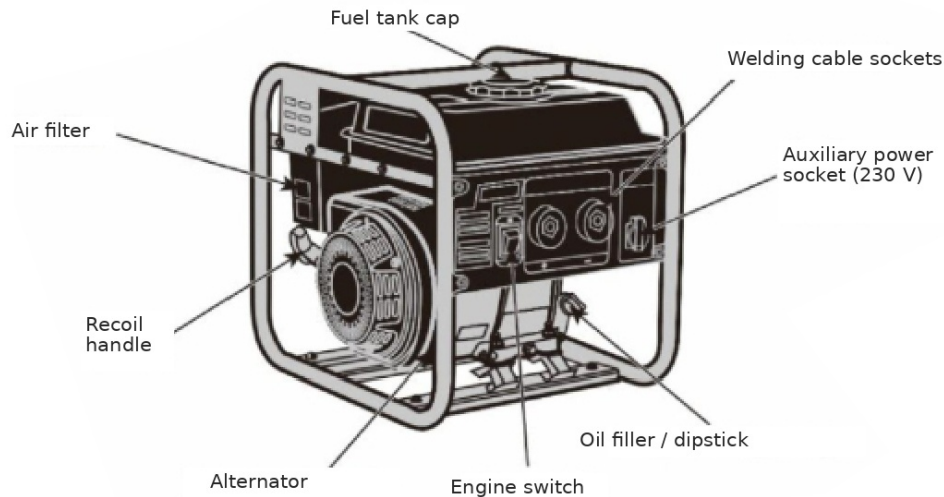


Fig. 2.1 Main parts of the welding generator (typical)

Part	Function
Fuel tank cap	Filler cap of the 7 L petrol tank.
Air filter	Cleans the intake air of the engine; check before each use.
Recoil handle	Pull to start the engine.
Alternator	Generates the welding current and the 230 V auxiliary power.
Engine switch	Switches the engine ignition on and off.
Oil filler / dipstick	For checking and filling engine oil (1 L).
Welding cable sockets	+ and – outputs for the electrode holder and earth clamp.
Auxiliary power socket	230 V / 16 A output for tools and lights.

Control panel



Fig. 2.2 Control panel of the EcoDrive 1800

Control	Function
Engine switch (ENG. SW)	ON: engine can run. OFF: stops the engine (ignition earthed).
Welding output + (red)	Positive welding socket – connect the electrode holder (DCEP) or the earth clamp (DCEN) as required by the electrode.
Welding output – (black)	Negative welding socket – connect the earth clamp (or the electrode holder for DCEN).
230 V socket	Single-phase auxiliary power, 230 V / 16 A, max. 3.0 kW, for lights, grinders and tools.
Specification plate	Welder and generator ratings of the machine.

3 Routine check before starting

3.1 Engine oil

▲ CAUTION

Check the oil level before every start – running with too little oil causes serious engine damage. Always check the oil with the engine stopped and the machine standing on a level surface.

The machine is supplied **without engine oil**. Before the first start fill 1 L of SAE 10W-30 four-stroke engine oil (SAE 15W-40 in hot climates). Unscrew the oil filler / dipstick, wipe it, insert it without screwing in and read the level; top up to the upper mark at the edge of the filler neck. The engine has a low-oil alert that stops the engine when the oil level is too low.

3.2 Air cleaner

Check that the air cleaner is clean and in good condition. Clean or replace the element if necessary – never run the engine without the air cleaner.

3.3 Fuel

1. Fill fuel only in a well-ventilated place with the engine stopped. Do not smoke and keep open flames and sparks away from the filling and fuel-storage area. Use clean unleaded petrol.
2. Do not overfill: the fuel level must not rise above the filter screen in the filler neck. After filling, make sure the tank cap is closed securely.
3. Do not spill fuel; spilled fuel or fuel vapour can ignite. Make sure any spilled fuel has dried before starting the engine.

3.4 Before welding

- Place the machine on firm, level ground in the open air.
- Check that the welding cables, electrode holder and earth clamp are undamaged and that the cable plugs are fully inserted and turned clockwise to lock.
- Connect the earth terminal of the frame to earth where required by site regulations.



Fig. 3.1 7.0 HP four-stroke OHV petrol engine

4 How to start and stop

1. Disconnect all loads from the auxiliary socket and make sure the electrode holder is not touching the workpiece.
2. Turn the fuel valve to **ON**.
3. Close the choke (lever to the **closed / START** position) when the engine is cold (Fig. 4.1). A warm engine normally needs no choke.
4. Turn the engine switch (ENG. SW) to **ON**.
5. Pull the recoil handle gently until you feel resistance, then pull it quickly and firmly to start the engine.

▲ CAUTION

Do not let the recoil handle snap back against the engine. Return it slowly by hand, following the pull of the recoil spring.

6. As the engine warms up, gradually open the choke (lever to the **open / RUN** position, Fig. 4.2).
7. Let the engine run for 2 – 3 minutes without load before welding or connecting loads.

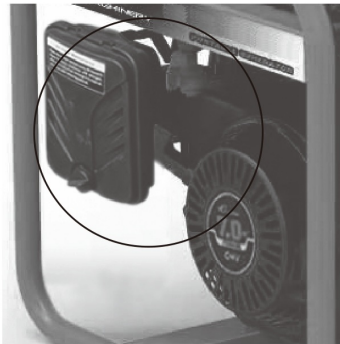


Fig. 4.1 Choke closed (cold start)



Fig. 4.2 Choke open (running)

Stopping the engine

1. Finish welding and switch off / disconnect all loads.
2. Let the engine run without load for about 1 minute to cool down.
3. Turn the engine switch to **OFF**.
4. Turn the fuel valve to **OFF**.

5 Welding and auxiliary power

5.1 Stick (MMA) welding

1. With the engine stopped, connect the electrode holder and the earth clamp to the welding sockets. For most rutile electrodes (e.g. E6013) connect the electrode holder to – and the earth clamp to +; for basic / low-hydrogen electrodes (e.g. E7018) connect the electrode holder to +. Follow the electrode manufacturer's recommendation.
2. Clamp the earth clamp firmly to clean, bare metal close to the weld.
3. Start the engine as described in Chapter 4.
4. The EcoDrive 1800 delivers up to 180 A and is designed for electrodes of 1.6 – 3.2 mm. Choose the electrode diameter to suit the plate thickness and welding position.
5. Strike the arc by scratching or tapping the electrode on the workpiece, keep a short arc (about equal to the electrode diameter) and weld.
6. After welding, remove the electrode stub from the holder and place the holder on an insulated surface.

Electrode and current guide (mild steel)

Electrode diameter	Welding current	Plate thickness
1.6 mm	40 – 60 A	1 – 2 mm
2.0 mm	50 – 80 A	2 – 3 mm
2.5 mm	70 – 100 A	2 – 5 mm
3.2 mm	100 – 140 A	3 mm and above

Reference values only. Adjust according to position, joint type and the electrode manufacturer's data.

5.2 Auxiliary power (230 V)

- The auxiliary socket supplies single-phase 230 V, 50 Hz, up to **3.0 kW**. Start the engine first, then connect the load.
- Do not exceed the maximum output. Motors (grinders, drills) draw 2 – 3 times their rated power when starting.
- Do not weld and use high loads on the auxiliary socket at the same time.
- Use extension cables of adequate cross-section (at least 2.5 mm²) and keep them short.



EcoDrive 1800 with electrode holder and earth clamp

6 Maintenance

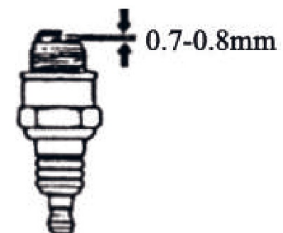
- Stop the engine before any maintenance work.
- To prevent accidental starting, turn the engine switch to OFF and disconnect the spark plug cap.
- Use only genuine Cruxweld spare parts; poor-quality parts can damage the machine.
- Regular inspection and adjustment keep the machine in good condition and ensure a long service life. Follow the schedule below.

Item		Each use	First month or first 20 h	Every 3 months or 50 h	Every 6 months or 100 h	Every year or 300 h
Engine oil	Check	●				
	Change		●		●	
Air cleaner	Check	●				
	Clean			● (1)		
Sediment cup	Clean				●	
Spark plug	Check / clean				●	
Valve clearance	Check / adjust					● (2)
Combustion chamber	Clean					● (2)
Fuel tank and filter	Clean					● (2)
Fuel line	Check	Every 2 years (replace if necessary) (2)				

(1) Service more frequently when used in dusty conditions. (2) To be carried out by Cruxweld service or a qualified technician.

Spark plug

1. Remove the spark plug cap and unscrew the plug with a plug spanner.
2. Inspect the plug. Replace it if the electrodes are badly worn or the insulator is cracked or chipped. Clean it with a wire brush.
3. Measure the electrode gap with a feeler gauge; bend the side electrode carefully to adjust. The correct gap is **0.7 - 0.8 mm**.
4. Screw the plug in by hand, then tighten with the spanner and refit the cap.



Spark plug gap 0.7 - 0.8 mm

Storage

For storage longer than one month: drain the fuel from the tank and carburettor, change the engine oil, pull the recoil handle slowly until you feel resistance (valves closed), clean the machine and store it covered in a dry, well-ventilated place.

7 Troubleshooting

Problem	Possible cause	Remedy
Engine does not start with the recoil starter	Engine switch is OFF	Turn the engine switch to ON
	Not enough engine oil (low-oil alert)	Fill oil to the upper level
	Fuel valve is OFF	Turn the fuel valve to ON
	No or not enough fuel in the tank	Fill fuel
	Fuel does not reach the carburettor	Loosen the carburettor drain screw with the fuel valve ON to check; clean the sediment cup and fuel filter
Engine starts but stops	Choke left closed; dirty air cleaner; low oil	Open the choke; clean the air cleaner; check the oil
No welding current / weak arc	Loose cable plugs; poor earth-clamp contact; damaged cables	Lock the plugs; clamp to bare metal close to the weld; replace damaged cables
Electrode sticks	Current too low for the electrode; arc too short	Use a smaller electrode or increase the current; keep a steady arc length
No power at the 230 V socket	Overload protection tripped; load too large	Remove the load, reset the protection and reconnect a smaller load
Spark plug fouled / hard starting	Wrong gap, carbon deposits	Clean the plug and set the gap to 0.7 – 0.8 mm; replace if worn

▲ WARNING

If fuel has been spilled, remove it completely and let it evaporate before checking the spark plug or starting the engine – otherwise there is a risk of fire.

If the fault cannot be cleared, contact Cruxweld service with the model and serial number.

8 Specifications

Welding generator

Model	EcoDrive 1800
Welding electrode range	1.6 – 3.2 mm
Maximum welding current	180 A
Open-circuit voltage	65 V
No-load voltage (DC)	55 V
Welding voltage (DC)	22 – 28 V
Max. auxiliary output	3.0 kW
Auxiliary output socket	230 V / 16 A, single phase
Rated frequency	50/60 Hz
Power factor	1.0
Insulation class	F
Protection degree	IP23
Sound level	72 dB(A) at 7 m
Certification	CE / ISO 9001
Dimensions (L x W x H)	460 x 375 x 420 mm
Gross weight	28 kg

Engine

Engine	GX210, 4-stroke, single cylinder, OHV
Rated power	7.0 HP
Speed	3600 rpm
Displacement	280 cc
Bore x stroke	70 x 55 mm
Compression ratio	8.5 : 1
Fuel	Petrol (unleaded)
Cooling	Forced air
Ignition	TCI (transistorised)
Starting	Recoil
Fuel tank capacity	7 L
Engine oil capacity	1 L
Fuel consumption	0.8 – 1.0 L/h
Oil consumption	0.0035 kg/h
Continuous running	6 – 8 h
Engine weight	16 kg

Specifications may change without prior notice as a result of continuous improvement. The rating plate on the machine is binding.

9 Circuit diagram

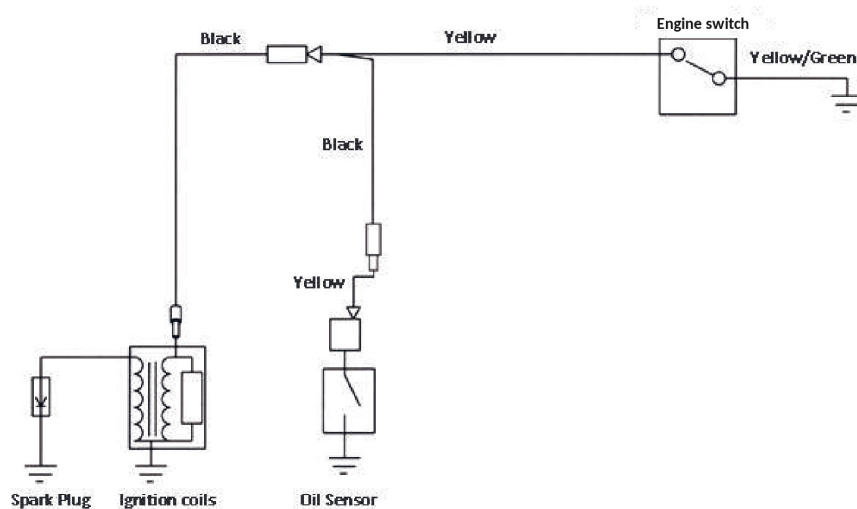


Fig. 9.1 Engine ignition circuit (spark plug, ignition coil, oil sensor, engine switch)

Warranty card

Model EcoDrive 1800

Serial number

Invoice no. / date

Customer

Dealer stamp

Warranty as per the sales contract from the date of invoice. Consumables (spark plug, air-cleaner element, oil, cables, electrode holder and earth clamp) and damage caused by running without oil, stale or contaminated fuel, overload, misuse or unauthorised repair are not covered. For service contact support@cruxweld.com or +91 8800 882 983.



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Cruxweld improves its products continuously. The technical data in this manual may change without notice.