



### CROMTECH DIESEL GENERATOR OPERATION MANUAL

Thank you for purchasing a Cromtech Diesel Generator.

This manual provides understanding of the operation and maintenance of your generator. Please read this manual carefully before operating.

For any questions regarding operation or maintenance, please consult your local service agent. Find your local service agent at **www.crommelins.com.au**.

#### **IMPORTANT ICONS**

Important information is distinguished by the notifications below. The Safety Alarm Symbol ( ) alerts you to potential hazards. Please obey all safety information in the symbol to avoid any possible injury or even death.

**DANGER:** Indicates a hazardous situation which, if not strictly complied with, will result in substantial property damage, serious injury or DEATH.

**WARNING:** Indicates a hazardous situation which, if not strictly complied with, may result in property damage.

**CAUTION:** Indicates a hazardous situation which, if not strictly complied with, could result in property damage or injury.

**NOTE:** Indicates important information to simplify operation and understanding.

WARNING: PLEASE READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE GENERATOR.

NOTE: We continually seek advancements in product design and quality. Therefore, there may be minor discrepancies in actual machine and the printed manual.

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#### WARRANTY

CROMTECH<sup>™</sup> and CROMMELINS<sup>™</sup> are a registered trademark of The Crommelin Group. Crommelins warrants their goods against defects in materials and workmanship under normal use and service.

The Crommelin Group warranty does not cover fair wear commensurate with the age of the product, any damage caused by accident, abuse, misuse, neglect or failure to observe proper operating instructions or proper machinery maintenance as described in the instruction manual.

It is the owner's responsibility to regularly maintain a product in accordance with the owner's manual and only use the equipment for its designed purpose.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

#### **CONSUMER ADVICE**

Any claim under these warranties must be made in the warranty period from the date of purchase of the product.

There are over 185 national authorised service/repair agents available, visit www.crommelins.com.au for their details and locations.

To make a claim under the warranty, you must return the product (with proof of purchase) to the closest warranty agent or to the place of purchase.

Where a failure does not amount to a major failure, Crommelins Machinery is entitled to choose between providing you with a repair, replacement or refund. To obtain compensation, you would need to provide documentary evidence of the loss or damage suffered, and documentary evidence that such loss or damage was a reasonably foreseeable consequence of a failure by The Crommelins Group to comply with a consumer guarantee under the Australian Consumer Law.

Crommelins Operations Pty Ltd trading as The Crommelin Group, Crommelins Australia and Crommelins Machinery

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#### SAFETY WARNINGS

WARNING: DO NOT Operate this generator until you have read ALL safety, operation, and maintenance instructions listed in this manual.

- Failure to follow the instructions may result in property damage, INJURY or DEATH.
- The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

WARNING: Modifications to any part of the generator is not allowed and will void your warranty.

WARNING: This generator is intended for residential consumer use only. This generator is not designed for permanent application.

WARNING: Before each use, check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation. Repair or replace all damaged or defective parts immediately.

- Locate all operating controls and safety labels.
- Operate only on level surfaces.
- DO NOT expose generator to excessive moisture, dust, or dirt.
- Keep all safety guards in place and in proper working order at all times.
- DO NOT allow any material to block the cooling slots.
- DO NOT allow children or untrained persons to operate the generating set.
- DO NOT run the generating set unattended. Turn off the generating set before leaving the area.

#### SAFETY WARNINGS

### DANGER: FIRE OR EXPLOSION - Diesel fuel is flammable and explosive.

- Fire or explosion can cause severe burns or death.
- Keep flammable items away while handling fuel.
- Fill fuel tank outdoors and in a well-ventilated area with the generator stopped.
- Always wipe off spilled fuel and wait until the fuel has dried before starting the generator.
- DO NOT operate the generator with known leaks in the fuel system.
- Use proper fuel storage and handling procedures. DO NOT store fuel or other flammable materials nearby.
- Empty the fuel tank before storing or transporting the generator.
- Keep fire extinguisher handy and be prepared if a fire starts.

#### DANGER: TOXIC FUMES - The exhaust of the generator engine contains carbon monoxide, an odourless, colourless, poison gas. Using engine indoors CAN KILL YOU!

- NEVER use generator inside any building or any kind of enclosure, EVEN IF doors and windows are open.
- Place the generator in a well-ventilated area and consider wind and air currents when positioning the generator.

#### **DANGER: MOVING PARTS - Moving parts can cause** severe injury. Keep hands and feet away.

- DO NOT operate generator with covers, shrouds, or guards removed.
- DO NOT wear loose-fitting clothing, dangling drawstrings or items that could become caught. Tie up long hair and remove jewellery.
- NEVER place fingers, hands, or body near the engine when it is running.

# **DANGER:** KICKBACK - Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

• Unintentional start-up could result in an injury.

#### SAFETY WARNINGS

## WARNING: HOT SURFACE - The running generator produces heat. Severe burns can occur on contact.

- DO NOT touch generator while operating or just after stopping. Avoid contact with hot exhaust gases.
- Maintain at least one metre of clearance on all sides to ensure adequate cooling.
- Combustible material can catch fire on contact. Maintain at least one metre of clearance from combustible materials.

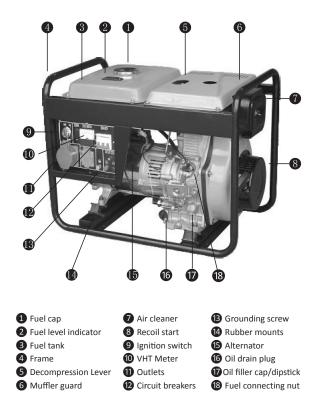
#### WARNING: ACID (For types equipped with battery) -Be careful when using any battery.

- Keep away from open flame, heat or spark.
- Battery will exhaust hydrogen while charging. Only charge a battery in a well ventilated place.
- Avoid spilled battery acid. If contact with skin is made, wash immediately with clean water.

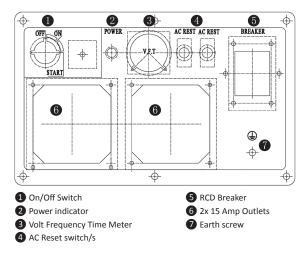
#### WARNING: ELECTRICAL SHOCK - This generator produces powerful voltage and the electricity CAN KILL YOU.

- To reduce the risk of electrical shock, DO NOT use electrical cords that are worn, frayed, bare or otherwise damaged.
- DO NOT touch bare wires or receptacles.
- DO NOT operate generator in wet weather. Keep the generator dry.
- DO NOT handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet.
- DO NOT allow unqualified persons or children to operate or service the generator.
- DO NOT connect this generator directly to a power supply

#### **TG6000DVE FEATURES**



#### **CONTROL PANEL**



#### **GENERATOR SPECIFICATIONS**

Model	TG6000DVE
Max. Output (W)	6000w
Cont. Rated Output (W)	5500w
Rated Voltage	240V / 50Hz
Power Factor	1.0
Engine	9.8hp Cromtech 188FG
Engine Features	OHV, air cooled
Displacement	474cc
Fuel Type	Diesel
Fuel Tank	12.5L
Oil Capacity	5.5L
Decibels at 1m (db)	95db
Weight (kg)	103.5kg
Packaging (LxWxH)	800x550x640mm

#### **FEATURES**

- 2x Outlets (single phase 15amp IP66 rate)
- RCD Protection
- AC Overload protection
- VHT Meter (Volts, Hertz, Time)
- Diesel powered
- Electric start and recoil start
- Fold-out handles
- Low oil alarm, overload alarm, output indicator
- Large 12.5L fuel tank
- 1 Year Cromtech Warranty

#### **OPERATING CHECKLIST**

- 1. OPERATING AREA This generator is for outdoor use.
  - Only use OUTSIDE and place the generator in a well-ventilated area.
  - Only operate the generator on a flat, level surface and in a clean, dry operating environment.
  - Allow one metre clearance on all side of the generator while operating it outdoors.
  - Generators used for construction sites may be subject to additional rules and regulations.
  - DO NOT connect generator to power supply.
  - When operating wear ear protection.

DANGER: TOXIC FUMES - The exhaust of the generating set contains carbon monoxide, an odourless, colourless, poison gas. Using engine indoors CAN KILL YOU.

- NEVER use inside any building or any kind of enclosure, EVEN IF doors and windows are open.
- Place the generator in a well-ventilated area and carefully consider wind and air currents when positioning generator.
- 2. OPERATING CONDITION Check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation. Repair or replace all damaged or defective parts immediately.
  - Remove any excessive dirt or debris, especially around the muffler and recoil starter.

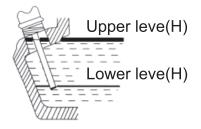
• DO NOT move or tip the generator during operation. Use generator only for intended uses. If you have questions about intended use, ask your local dealer.

DANGER: Failing to correct problem(s) before operation could result in property damage, serious injury or DEATH.

#### 3. CHECK ENGINE OIL

WARNING: This engine is not filled with oil. Any attempt to crank or start the engine before it has been properly filled (with the recommended type and amount of oil) may result in engine damage and void your warranty.

- 1. ENGINE OIL Place the generator on a level surface with engine stopped.
  - Remove the dipstick and wipe it clean.
  - Reinstall dipstick into tube; rest on oil fill neck, DO NOT thread cap into tube.



- 2. Remove the dipstick again and check oil level. Level should be at top of indicator on dipstick.
- If lower, fill to the upper limit (marked with "H") of the dipstick with the recommended oil. Reinsert and fully tighten the dipstick.



Interval of Changing Machine oil

WARNING: Oil is a major factor affecting performance and service life of an engine. Use SAE30 oil.

CAUTION: LEVEL GROUND - Operate generator only on levelled surface. The engine is equipped with a low oil sensor (applicable types) that will automatic stop the engine when the oil level falls below the safe limit. To avoid the inconvenience of an unexpected shut-down, fill to the upper limit and check the oil level regularly.

#### 4. CHECK FUEL LEVELS

**CAUTION:** Only diesel fuel can be used. The fuel must be filtered. Fuel should be free of water or dust as this can result in problems with the fuel injection generator and nozzle.

*FILLING THE FUEL TANK* - With the engine stopped, check the fuel level gauge. Refill the fuel tank if necessary.

- Use clean, fresh, regular diesel fuel only.
- DO NOT mix with other fuels.
- Be sure not to fill above the upper limit mark, always fill to the level indicator, or fill to 25mm below full level (to allow room for fuel expansion in hot temperatures).

DANGER: FIRE OR EXPLOSION - Diesel is flammable and explosive. A fire or explosion can cause severe burns or death.

- Keep flammable items away while handling diesel fuel.
- Fill fuel tank outdoors and in a well-ventilated area with the engine stopped.
- Always wipe off spilled fuel and wait until the fuel has dried before starting the engine.
- DO NOT operate the engine with known leaks in the fuel system.
- Use proper fuel storage and handling procedures. DO NOT store fuel or other flammable materials nearby.
- Empty the fuel tank before storing or transporting this engine.
- Keep fire extinguisher handy and be prepared if a fire starts.

**CAUTION:** To insure easy starting, do not use fuel left over from the previous season.

5. ELECTRICAL DEVICES

**NOTE:** Disconnect all electrical devices from the generator before starting the engine.

• The generator may be hard to start with electrical devices connected.

6. CHECK AIR CLEANER ELEMENT

WARNING: Never run the generator without the air cleaner element as damage to the engine may occur.

- The air cleaner must be changed when the output of engine decreases or if the exhaust colour looks darker than normal. See page 19.
- 7. CONNECTING ELECTRICAL DEVICES

NOTE: This generator is fitted with an RCD Circuit Breaker. ALWAYS test RCD switch before every use.

**CAUTION:** Do not use any appliance with a damaged cord or switch.

**NOTE:** Allow the engine to stabilise and warm up for a few minutes after starting.

NOTE: Make sure the electrical devices are in their 'OFF' position and the load current is not higher than the maximum withstanding current of a single socket.

#### LOW OIL WARNING SYSTEM/STOP DEVICE

NOTE: The device works automatically to stop the engine when the oil pressure falls below the regulatory level to prevent engine seizure

- The oil temperature will rise too high if the engine is operated with insufficient oil.
- Too much oil is dangerous as it may cause sudden excessive engine revs.
- Be sure to check oil is at optimum specified levels.

#### **BREAK-IN OPERATION**

WARNING: While your generator is still new, application of heavy loads may shorten the life of the engine. Follow the break-in procedures during the first 20-30 hours.

- 1. Avoid applying any heavy load during break-in period.
- 2. Change engine oil regularly (Every 20 hours or one month after initial use, and every 3 months or 100 hours thereafter).

#### MAXIMUM CAPACITY

WARNING: DO NOT overload the generator. Exceeding the capacity of generator can damage the generator and/or electrical devices connected to it.

- You must make sure your generator can supply the rated (running) and surge (starting) watts for the electrical device/s you are powering.
- Follow these simple steps to calculate the running and starting watts necessary for your purposes.
- Select the electrical device/s you will be powering
- Calculate that the total amount of power you need to run all devices is less than the rated output of the generator. You



may need to check the items rated (running) watts in their manuals.

3. Identify how many surge (starting) watts you may need. Surge wattage is the short burst of power needed to start electric motor-driven appliances such as a refrigerator or water generator.

**CAUTION:** If connected devices overheat. Immediately turn them off and disconnect from the generator.

NOTE: AC OVERLOAD RESET BUTTON/S - If the AC power outlet is overloaded, the AC circuit breaker will cut out the power to the device. If tripped remove device/ load and reset button.

• If tripping continues, remove the device and have it checked by a licensed electrician.

NOTE: Not all motors can start at the same time, total surge watts can be estimated by adding only the electrical device(s) with the highest additional surge watts to the total rated watts.

ELECTRICAL EQUIPMENT	RATED POWER (W)
Tablet computer 27"	120W
Electric Cooker	1000W
Personal Computer (standard)	250-600W
Refrigerator (standard)	50-200W
Kettle	1800W
2.0hp Air Conditioner	1800W
Electric Hammer	1000W
Water Generator	800W

#### WATTAGE REFERENCE GUIDE ONLY

#### **PRE-START INSTRUCTIONS**

**NOTE:** When starting the generator for the first time, restarting the engine after it stopped due to fuel shortage or starting the engine after fuel filter cleaning. Follow these steps.

- Always check that there is no air trapped in the fuel line. Trapped air needs to be cleared before starting.
  - To clear air in the fuel line, loosen the fuel connection nut that is between the injecting generator and fuel line (See page 8).
  - 2. Ensure the ignition is in the 'OFF' position.
  - Bleed the fuel line by pulling the recoil starter to start the flow of fuel.



- 4. Continue until there is no air bubbles coming out and the fuel is flowing freely.
- 5. Tighten fuel connection nut.

#### STARTING THE GENERATOR ELECTRIC STARTING

## **NOTE:** Always keep the starting key turned to 'ON' while the engine is running.

- 1. The preparation for starting the engine is the same as the recoil start.
- 2. Open the fuel tap to the 'ON' position (Fig 1).
- 3. Set the engine speed lever to 'RUN' position (Fig 2).



Fig 2.



- 4. Push down the decompression lever (it will return automatically when the engine is starting).
- 5. Turn the starting key clockwise to 'START' position.
- As soon as it starts, release your hand and let the key automatically return to its initial position. If the generator doesn't start after 10 seconds, please wait at least 15 seconds before attempting again.

#### **RECOIL STARTING (MANUAL START)**

NOTE: Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go. Unintentional start-up could result in an injury.

- Never pull out the recoil start when the diesel engine is running, as damage may occur.
- 1. Open the fuel tap to the 'ON' position.
- 2. Set the engine speed lever to 'RUN' position.
- 3. Set ignition key switch to 'ON' position.
- 4. Push down the decompression lever (it will return automatically when the recoil starter is pulled).
- 5. Pull out the recoil start handle and prepare to start the generator.
- 6. Pull the rope to the point where resistance is felt. Return the recoil handle to the initial position.
- 7. Grip the recoil handle firmly and pull quickly and briskly (Two hands might be needed).
- 8. Return the recoil gently back to prevent damaging the starter. Do not allow the handle grip to snap back.

#### **RUNNING THE GENERATOR**

WARNING: Unapproved adjustment will damage your engine and/or your electrical devices and void your warranty.

- The speed has been set at the factory and should not require readjustment. Consult your local authorised service agent for advice.
- Warm up the engine for about 3 minutes without load before using generator.

#### **DURING OPERATION**

### WARNING: Check for unusual sounds or vibrations during operation.

- Check for misfiring or the engine running rough
- If you notice any above problems, stop the engine and consult you local service agent.

#### STOPPING THE GENERATOR

WARNING: NEVER stop the engine with electrical devices connected and the connected devices turned 'ON'.

- 1. Turn off all electrical equipment and disconnect all from the generator.
- Allow the generator to run at no load for 3 minutes to stabilize internal temperatures of the engine and generating set.
- 3. ELECTRIC START Switch the ignition switch to the 'OFF' position.



4. Turn the fuel tap to the 'OFF' position



**CAUTION:** If the engine continues to run even after the speed lever is moved to the 'STOP' position, turn the fuel tap to the 'OFF' position to stop the engine. DO NOT stop the engine with the decompression lever.

#### AC APPLICATION

NOTICE: Do not run generator for extended periods with no load or minimal load (e.g. when charging batteries or powering low wattage equipment such as TVs and Radios). This may cause premature excessive carbon build up or high oil consumption. To prevent this, run the generator periodically with an increased load.

- 1. Start the engine and make sure the pilot lamp turns on. If it doesn't, the filament may be damaged.
- 2. The speed of the generator must reach rated speed (lever set to the 'ON') before applying load.
- 3. The generators speed has been factory set at 3000rpm 50Hz.

#### **GENERATOR OVERLOAD**

**CAUTION:** If an overloading of the circuit trips the AC circuit Breaker, reduce the electrical load on the circuit, wait a few minutes before resuming operation.

• To reset an overload, shut down and restart the generator.

#### **GENERAL MAINTENANCE**

**NOTE:** It's the operator's responsibility to complete all scheduled maintenance in a timely manner. Correct any issue before operating the generating set. Always follow the inspection and maintenance recommendations and schedules in this manual.

 Before servicing the generator, stop the generator, disconnect all electric devices and battery (if equipped) and allow the generator to cool down.

**MAINTENANCE SCHEDULE** - Follow the service intervals indicated in the chart below. Service your generator more frequently when operating in adverse conditions.

- Contact your local service agent for parts or engine maintenance needs.
- See maintenance schedule on next page.

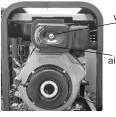
Service period regular Item	Daily check	First month or 20 Hrs	Every 3 months or 100 Hrs	Every 6 months or 300 Hrs	Every year or 1000 Hrs
Check and replenish fuel	0				
Drain fuel F.O. tank		0			
Check and replenish lube oil	0				
Check for oil leakage	0				
Check and tighten each parts engine	0			<ul> <li>Tighten head bolts</li> </ul>	
Change lube oil		O (1st time)	<ul> <li>O (2nd and thereafter)</li> </ul>		
Clean oil filter			O (Clean)	O (Replace)	
Air cleaner element replacement	Service more frequently when used in dusty areas		O (Replace)		
Clean fuel filter				O (Clean)	<ul> <li>(Replace)</li> </ul>
Check fuel pipe				<ul> <li>(Replace if necessary)</li> </ul>	
Check battery fluid		(Monthly)			

#### GENERAL MAINTENANCE

#### **CHECK/CHANGE AIR CLEANER ELEMENT**

WARNING: Never run the generator without the air cleaner element as damage to the engine may occur.

- The air cleaner must be changed when the output of engine decreases or if the exhaust colour looks darker than normal.
- 1. Loosen the wing nut, detach the cover and remove the air cleaner element.
- 2. Wash in warm water. DO NOT wash with detergent.
- 3. Squeeze thoroughly and dry with a clean cloth.



wing nut

air cleaner

- 4. Saturate in clean engine oil. Squeeze in a clean, absorbent cloth to remove all excessive oil.
- 5. Place element back in the air cleaner and reattach the cover. Tighten wing nut.



element

#### **CHECK/CHANGE FUEL FILTER**

WARNING: Change filter regularly to insure maximum engine output.

- CLEAN FILTER Every 6 months or 300 hours.
- REPLACE FILTER Every year or 1000 hours.

#### **ADJUSTMENTS**

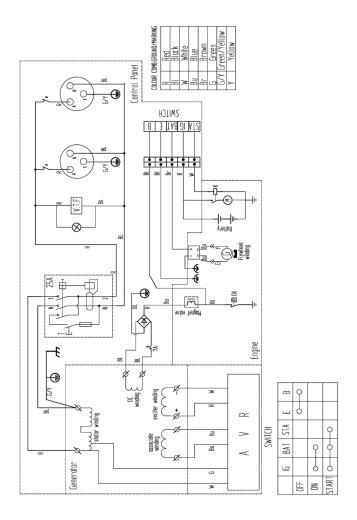
#### WARNING: Tampering with the factory set governor will damage your generator and void your warranty.

#### **CHECK BATTERY / CHARGING BATTERY**

Before starting check battery for damage. Battery fitted is maintenance-free, check for green light on battery to ensure it is charged. If battery requires charging use a compatible battery charger. Battery type 12v 36ah.

#### **ELECTRICAL DIAGRAM**

WARNING: A licensed electrician should always carry out electrical maintenance work



Pg. 21

#### STORAGE AND TRANSPORT

**DANGER: FIRE OR EXPLOSION - Diesel fuel is** flammable and explosive. Empty the fuel tank and shut off fuel tap before storing or transporting this generator.

- STORAGE The generator should be started at least once every two weeks and allowed to run for at least 20 minutes. Follow the instructions below for longer term storage if the generator is not used for 2 months or more.
- 2. LONG TERM STORAGE Follow the instructions below for if the generator is not being used with in the next 2 months or longer.
  - i. Clean the generator according to the instructions in the maintenance section (Page 27).
  - ii. Run the generator for 3 minutes and stop it.
  - iii. Drain old oil and replace with fresh oil.
  - iv. Turn off the fuel supply at the fuel valve.
  - v. Slowly pull the recoil start handle until pressure is felt (that is, to the point in the compression stroke where the intake and exhaust valves are closed), and leave the recoil in that position. This prevents moisture forming while the engine is not in use/ storage.
  - vi. Store the unit in a clean, dry area out of direct sunlight.

#### TROUBLE SHOOTING

# WARNING: Turn off the generator before starting maintenance work.

FAULT	POSSIBLE CAUSE	REMEDY
	1. Fuel tap lever is 'OFF'.	1. Turn fuel tap lever to the 'ON' position.
	2. No fuel.	2. Fill tank as per instructions.
Engine won't	3. Check level of oil.	<ol> <li>This engine is equipped with a low oil sensor. The engine cannot be started unless the oil level is above the prescribed lower limit.</li> </ol>
start	4. The engine speed lever is not in the 'ON' position	<ol> <li>Push the lever to the 'ON' position.</li> </ol>
	5. The speed and force of the recoil starter is not enough.	<ol><li>Start the engine as per the starting instructions.</li></ol>
	6. The battery is flat or dead.	<ol><li>Charge the battery or replace with new one.</li></ol>
	1. There is no power to outlet.	1. Check RCD breaker.
	2. There is not power to outlet.	2. Check AC overload.
Generator	3. The rated speed of the generator can not be reached.	<ol> <li>Consult you local service agent for adjustments.</li> </ol>
has no 4 output	<ol> <li>Inadequate power cord or extension cord.</li> </ol>	<ol> <li>Check the cord for damage and the extension cords capabilities.</li> </ol>
	5. RCD keeps tripping.	<ol> <li>Electrical fault with appliance, remove appliance and have it checked.</li> </ol>

WARNING: WHEN USING WELDERS - If the welder continues to trip the overload protection stop using the welder as damage to the AVR regulator may occur.

**NOTE:** If a problem still exists, contact with your local authorised dealer for advice.

For any questions regarding operation or maintenance, please consult your local service agent. Find your local service agent at www.crommelins.com.au



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