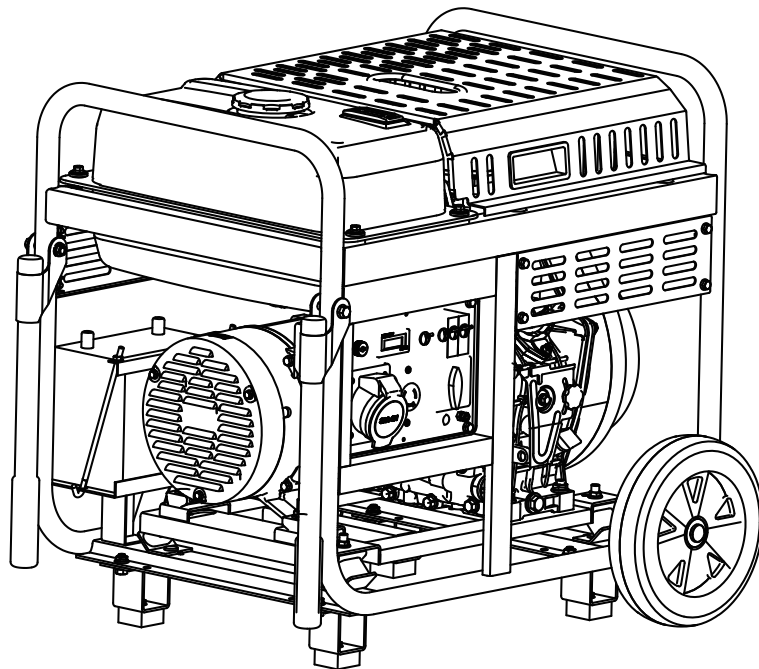




OPERATION MANUAL OF DIESEL GENERATOR SET



Please read the instructions carefully before use

CONTENTS:

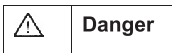
1. GENERAL SAFETY PRECAUTIONS.....	3-4
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IMPORTANT:

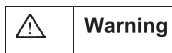
The range of **ALRASHBAYER PRODUCTS** are safe and reliable, but the incorrect use of these products may cause personal injury and or damage to your machine. Please read this manual thoroughly before operation as this product is required to operate strictly in accordance with this manual.

IMPORTANT NOTICES:

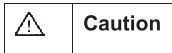
PLEASE PAY SPECIAL ATTENTION TO STATEMENTS PRECEDED BY THE FOLLOWING WORDS:



This indicates a hazardous situation, which, if not avoided, may result in death or serious injury.






This indicates a hazardous situation, which, if not avoided, could result in serious injury.



This indicates a hazardous situation, which, if not avoided, could result in injury.

1. GENERAL SAFETY PRECAUTIONS:

	Danger		Warning		Caution
---	--------	---	---------	---	---------

- A “LAYMAN” or “CHILD” may not recognize the possible dangers of operating a generator. We recommend that only competent persons should operate the generator.
- Fuel is combustible and easily ignited. Do not refuel during operation
- Do not refuel whilst smoking or near naked flames. Do not overfill or spill fuel. If this happens clean the fuel on and around the generator properly before operating.
- Only use the specified fuel when operating the generator.
- Some parts of the internal-combustion engine are hot and might cause burns pay attention to the warning signs on the generating set.
- Engine exhaust gases are toxic .Do not operate the generator in an unventilated room. When installed in a ventilated room, additional requirements for fire and explosion protection must be observed.
- Regularly check that the bolts and nuts are properly tightened as they may become lose due to vibration of the generator whilst in use.
- Before using the generator ensure that you have checked the periodic maintenance schedule in the operator's manual.
- Pay attention to the wiring or extension cords used from the generator to electrical device/appliance. If the wire or extension cord is under the generator, crimped or in contact with any vibrating part of the generator it may break and possibly cause a fire, generator burnout, or electric shock. Replace damaged or worn wires or extension cords immediately.
- Do not operate in the rain, wet or damp conditions, or with wet hands. This may result in severe electric shock.
- Do not pour water directly over the generator nor wash it with water using a hose pipe or high pressure washer.
- Be extremely careful that all necessary electrical grounding procedures are followed during each and every use. Failure to do so may result in severe electric shock or death.
- Do not connect the generator to a commercial power line. Connecting to a commercial power line may short circuit the generator. We strongly recommend the use of a Transfer Switch for connecting to a domestic circuit.
- Do not smoke when handling the battery. The battery emits flammable hydrogen gas which can explode if exposed to cigarettes and or naked flames. Ensure that the area is well-ventilated and keep naked flames/sparks away when handling the battery.
- Keep children and all bystanders at a safe distance from the generator whilst in use.
- It is absolutely essential that you know and understand the safe and proper use of the power tool or appliance that you intend to connect to the generator. All

operators must read, understand and follow the tool/appliance operator's manual. The tool and appliance applications and limitations must be understood.

- Keep all instruction manuals in a safe place for future reference. Always switch off the circuit breaker on the generator when not in use.

2. ELECTRICAL SAFETY INFORMATION:

- Electrical equipment including cable, cords and plug connection must not be defective. Please check before using.
- Do not plug the generator directly into a wall socket-outlet.
- The generator should not be connected to other sources such as the power company supply mains. In special cases where stand-by connection to an existing electrical system or integration therewith is intended, note that it is a legal requirement that such connections or integration may only be performed by a competent person.
- Protection against an electrical shock depends on circuit-breakers that are specially matched to the generator. If a circuit breaker requires replacement, it must be replaced with a circuit breaker that has the identical ratings and performance characteristics.
- Due to high mechanical stresses only tough rubber-sheathed flexible cable should be used with the generator.
- If the generator is of CLASS II construction then it is not necessary to earth the generator.

2.1 CORD EXTENSION SETS:

A 1 mm² flexible cable can draw a maximum of 10 A provided that the cable is no longer than 25 m.

A 1.5 mm² flexible cable can draw a maximum of 10 A provided that the cable is no longer than 35 m.

A 1.5 mm² flexible cable can draw a maximum of 16 A provided that the cable is no longer than 20 m.

A 2.5 mm² flexible cable can draw a maximum of 10 A provided that the cable is no longer than 65 m.

A 2.5 mm² flexible cable can draw a maximum of 16 A provided that the cable is no longer than 45 m.

A 4 mm² flexible cable can draw a maximum of 10 A provided that the cable is no longer than 100 m

A 4 mm² flexible cable can draw a maximum of 16 A provided that the cable is no longer than 65 m

2.2 DROP IN ELECTRIC EXTENSION CORDS:

- When a long electric extension cord is used to connect an appliance or tool to the generator, a certain amount of voltage drop or loss occurs in the extension cord which reduces the effective voltage available for the appliance or tool.
- The chart below has been prepared to illustrate the approximate voltage loss when an extension cord of 300 feet (approx.100 meters) is used to connect an appliance or tool to the generator.

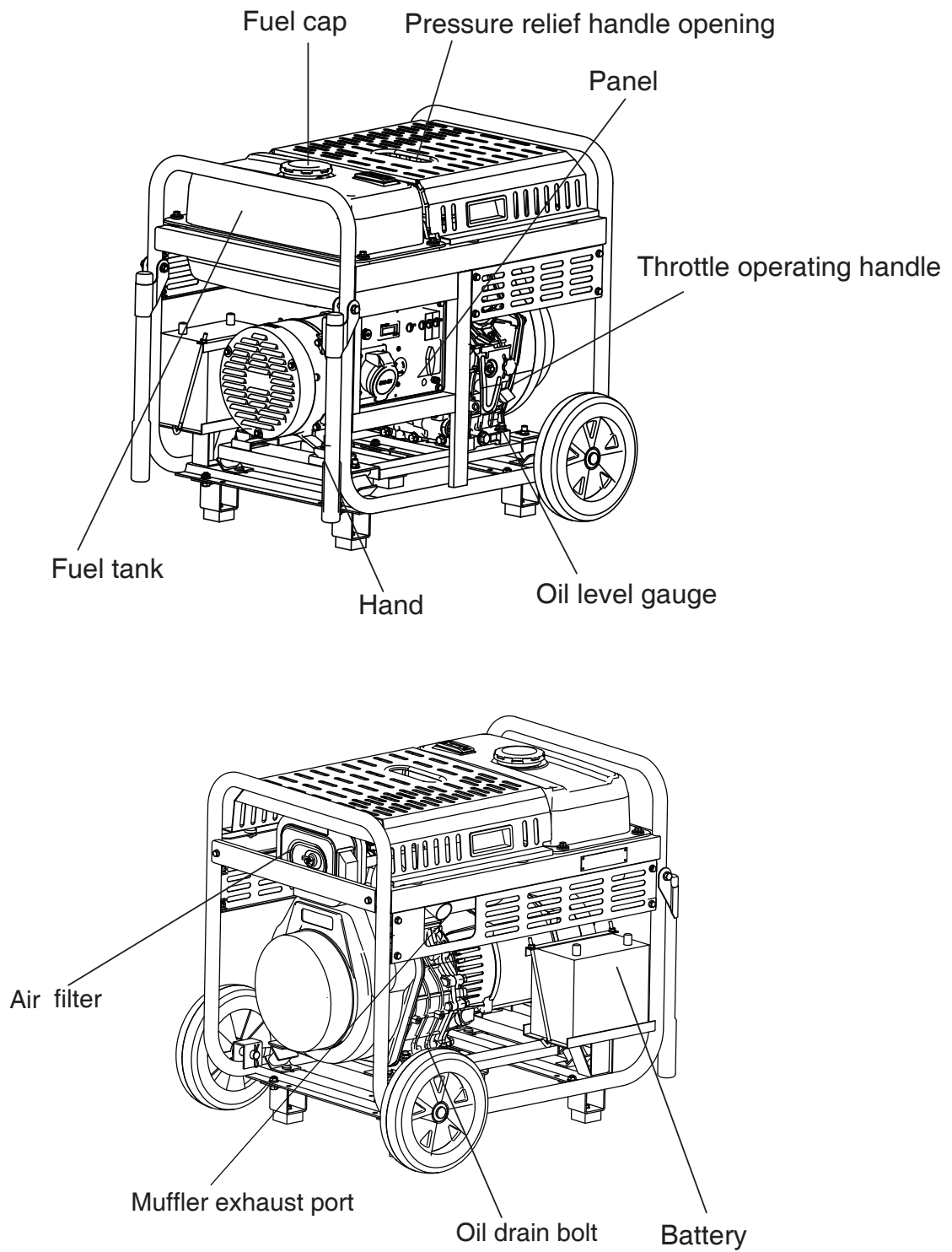
Nominal cross section	A.W.G	Allowable current	Number of strands/strand s diameter	Resistance	Current Amp							Voltage drop
					1A	3A	5A	8A	10A	12A	15A	
mm ²	No.	A	No./mm	/100m	2.5 V.a.c	8 V.a.c	12.5 V.a.c					
0.75	18	7	30/0.18	2.477								
1.27	16	12	50/0.16	1.486	1.5 V.a.c	5 V.a.c	7.5 V.a.c	12 V.a.c	15 V.a.c	18 V.a.c		
2	14	17	37/0.26	0.952	1 V.a.c	3 V.a.c	5 V.a.c	8 V.a.c	10 V.a.c	12 V.a.c	15 V.a.c	
3.5	12 to 10	23	45/0.32	0.517		1.5 V.a.c	2.5 V.a.c	4 V.a.c	5 V.a.c	6.5 V.a.c	7.5 V.a.c	
5.5	10 to 8	35	70/0.32	0.332		1 V.a.c	2 V.a.c	2.5 V.a.c	3.5 V.a.c	4 V.a.c	5 V.a.c	

3. SPECIFICATIONS:

Model		ADG7000E	ADG10000E
Type		Single phase/Three phases	
Alternator	Frequency(Hz)	50	50
	Max Power(kW/kVA)	5.5/7.0	8.5/10.5
	Rated Power(kW/kVA)	5.0/6.5	7.5/9.5
	Voltage(AC)(V)	230V	
	Rotating Speed (rpm)	3000	3000
	Voltage(DC)(V)	12	
	Current (DC)(A)	8.3	
	Rated Current(A)	21.7	32.6
Engine	Model No.	186	195
	Rated Power(KW)	5.7	8.5
	Max Power(KW)	/	/
	BoreXStroke	86x72	95x75
	Displacement(ml)	418	532
	Cooling	Air cooling	
	Lubrication sys.	Force-feed and splash	
	Oil capacity(L)	1.65	
	Starting sys.	Recoil or Electric start	
	Fuel type	Diesel	
Generator	Fuel tank capa.(L)	20	
	Weight (Kg)	115	125
	Dimension (mm)	740x540x690	
	Noise(7M)	106dB	

Specifications are subject to change with out notice

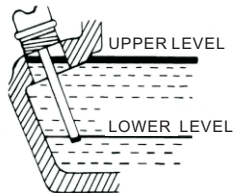
4. COMPONENTS:



5. PRE - OPERATION CHECKS:

5.1. CHECKING THE ENGINE OIL:

- Ensure that the generator is on a flat and level surface before adding oil.
- Remove the oil cap and check the level of the oil.
- Add oil to the generator if the oil is below the indicator line.
- Always ensure that your engine oil is clean.

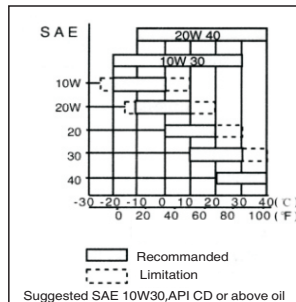


5.2. OIL CAPACITY FOR THE 7 kVA GENERATOR MODEL:

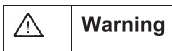
- Oil Capacity is 1.65L

5.3. RECOMMENDED ENGINE OIL:

- Suggested SAE 15W – 40 API CD or above oil, if single viscosity oil is used select the appropriate viscosity for the average temperature in your area.



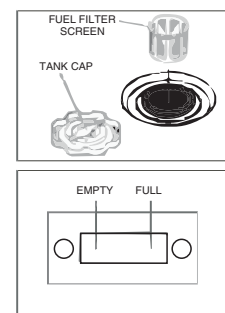
5.4. CHECKING THE ENGINE FUEL:



Warning

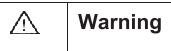
Do not refuel the generator whilst in use or whilst smoking or near an open flame.

- Use the fuel gauge to check the fuel level.
- If the fuel level is too low refuel using clean diesel only
- Ensure that you use the fuel filter screen on the fuel filter



5.5. FUEL CAPACITY:

Fuel capacity is 20L



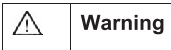
Make sure you review each warning in order to prevent fire hazards. Do not refill the fuel tank whilst the engine is running or hot. Please ensure that the fuel cock is closed before refueling. Be careful not to contaminate the fuel with any dust, dirt, water or other foreign liquids/objects. Please clean all spilt fuel properly before starting the generator.

Ensure that the generator is clear from any open flames. Do not smoke whilst refueling the generator.

5.6. BEFORE STARTING THE GENERATOR PLEASE CHECK THE FOLLOWING :

- Check for any fuel leaking from any part of the generator.
- Check that all the nuts and bolts are securely tightened on the generator.
- Check for any visible damaged components on the generator.
- Check that the generator is not resting on or adjacent to any electrical wiring.

5.7. CHECK THE GENERATOR SURROUNDINGS :

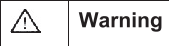


Make sure you review each warning in order to prevent fire hazards. Keep the surrounding area clear of flammables or other hazardous materials. Keep the generator at least 3 feet (1meter) away from all buildings and or other structures. Only operate the generator in a dry, well - ventilated area. Keep the exhaust pipe clear of all foreign objects. Keep the generator away from open flames. Do not smoke in close proximity to the generator. Keep the generator on a flat and level surface.

Do not attempt to block the generator air vents with any paper or other material/object.

5.8. BATTERY INSTALLATION (ELECTRIC STARTER MODEL)

The recommended lithium battery capacity is 12 V – 6ah.



Follow the instruction very carefully as failing to do so may result in injury and or death. Only use the recommended battery capacity. Ensure that the key/switch is in the “STOP” position prior to connecting or disconnecting the battery. Always check to ensure that terminals are connected correctly. Positive (+) Cable to Positive (+) Terminal, Negative (-) Cable to Negative (-) terminal.

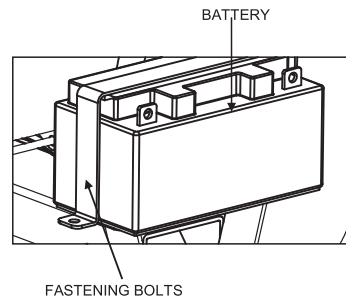
RED CABLE: Positive(+) Terminal **BLACK CABLE:** Negative (-) Terminal

Please note that the generator will not start if the connection of the battery is done incorrectly. Ensure that you securely tighten the nuts and bolts on the battery terminals. Disconnect the battery cables from the terminals when charging the battery. The battery can be charged whilst the generator is running.

ALWAYS CHARGE YOUR BATTERY ON A TRICKLE CHARGE FOR 24 HOURS BEFORE USING FOR THE FIRST TIME.

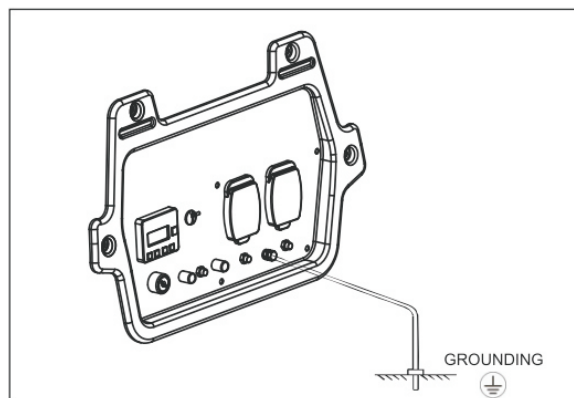
5.9. BATTERY CONNCTION:

- Check that the engine switch is in “OFF” position.
- Loosen the support fastening bolts for the battery, remove and place it on a flat and level surface.



5.10. GROUNDING THE GENERATOR:

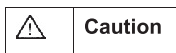
- When grounding the generator connect the grounding lug of the generator to the ground spike. (not supplied)
- If such grounding conductor or ground electrode is un-available connect the grounding lug of the generator to the grounding terminal of the electric tool or appliance.



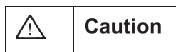
6. STARTING OF GENERATOR:

6.1. RECOIL START:

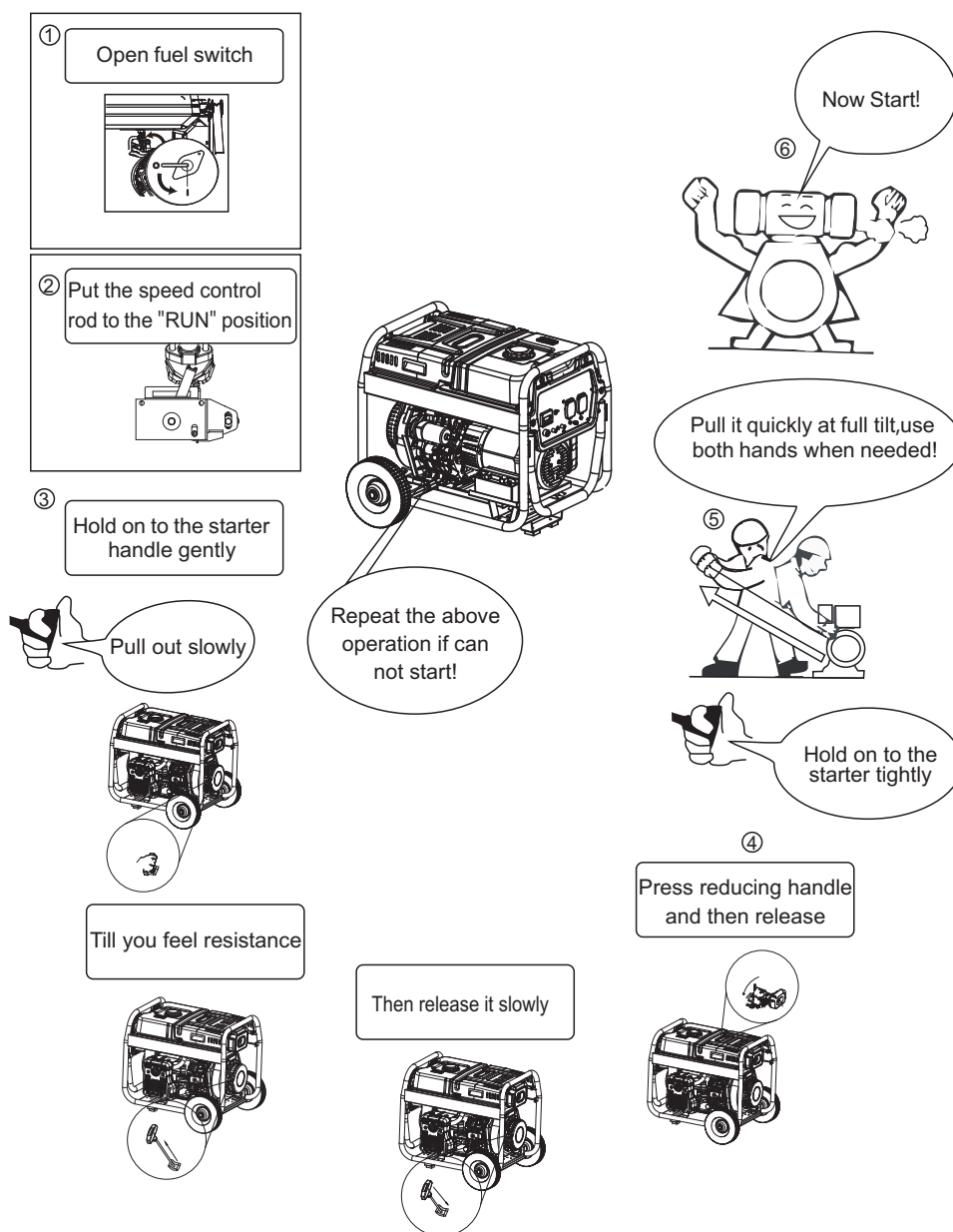
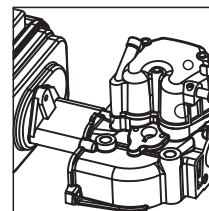
For recoil start refer to the instruction pictures.



When the ambient temperature is low, twist the fuel plug on the cover of the cylinder head and add ± 2 ml oil and then tighten.

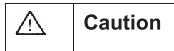
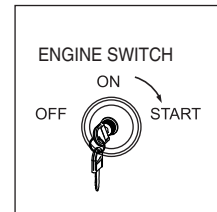


The fuel plug must be tight on the cover of the cylinder head.

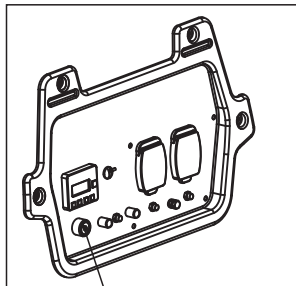


6.2. ELECTRIC/KEY START:

- Disconnect all electrical appliances.
- Place the key in the "OFF" position.
- Turn the fuel cock to the "ON/OPEN" position.
- Shift the operation handle to "RUN" position.
- Turn the ignition/key clockwise to "START" position.

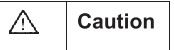


If the generator does not start, be careful not to keep engaging/turning the key/ignition as this may damage the starter motor, engine and battery. Check the fuel, fuel cock and oil. For further assistance please contact ALRASHEED



Starting switch

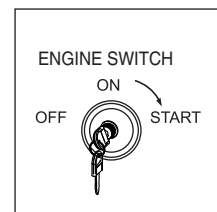
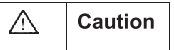
7. OPERATING PROCEDURES:



Always check the oil and fuel levels before starting the generator.

7.1. ENGINE SWITCH:

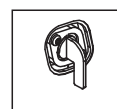
"RUN" indicates that the engine is in the "RUN" position, "OFF" indicates that the engine is in the "OFF" position, "START" indicates that the engine is in the "STARTING" position.



Please note that the battery is powering the carburetor valve when the engine switch is in the "RUN" position. The engine switch needs to be moved to the "OFF" position when the generator is not running.

7.2. FUEL COCK:

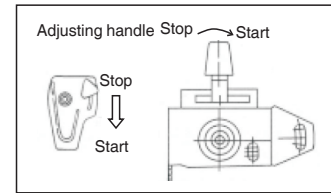
The fuel cock is used to control the fuel flow from the tank to the carburetor. After stopping the engine the fuel cock should be turned to the "OFF" position



Fuel valve

7.3. ADJUSTING HANDLE:

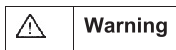
The adjusting handle can control the engine frequency. If you want to start the engine you must adjust the handle to the “START” position.



7.4. CIRCUIT BREAKER:

If the generator is overloaded the circuit breaker will trip automatically. This is a protective measure however depending on the amperage and voltage of the overload, damage may still occur to the Circuit Breaker, AVR, Alternator and Sockets. Prior to re-setting the circuit breaker check that the load that the generator is attempting to power does not exceed the rated power output of the generator. Please also check for any short circuit.

7.5. USING ELECTRIC POWER:

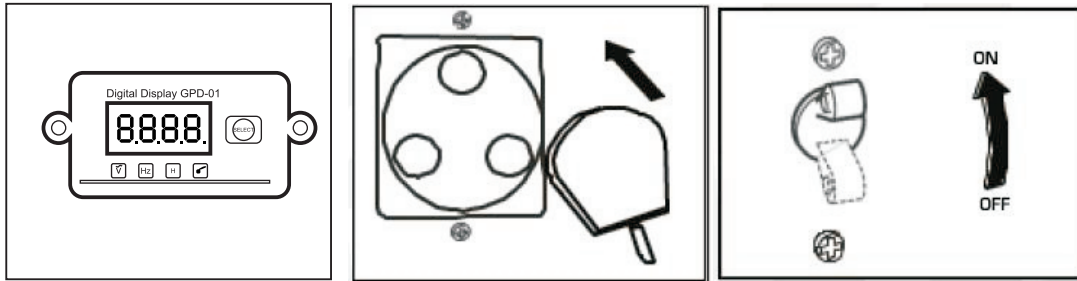


Make sure that the appliance is switched “OFF” before connecting it to the generator. Do not attempt move the generator while it is running.

CONTROL PANEL

7.6. AC APPLICATION:

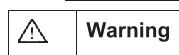
- Check the digital meter to ensure that the voltage output is correct (i.e. 230 V).
- This generator has been properly tested and set correctly at the time of manufacture.
- If the generator does not produce the specified voltage please contact ALRASHEED Industries.
- Turn off the switch (es) of the electrical appliance(s) before connecting to the generator.
- Insert the plug(s) of the electrical appliance(s) into the receptacle.



- Check the amperage of the receptacles used making reference to the table on Page 4. Be careful not to exceed the specified amperage
- Check that the total wattage of all appliances that is being connected to the generator does not exceed the rated output of the generator.
- Turn on the appliance switch.

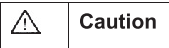
NOTE: If the circuit breaker “TRIPS” during operation it is likely that the generator has been overloaded or that the appliance is defective. Turn off the generator immediately and check the appliance. Check the power rating of the appliance before reconnecting to the generator.

7.7. CONNECTING TO DOMESTIC CIRCUITS (HOUSE WIRING):



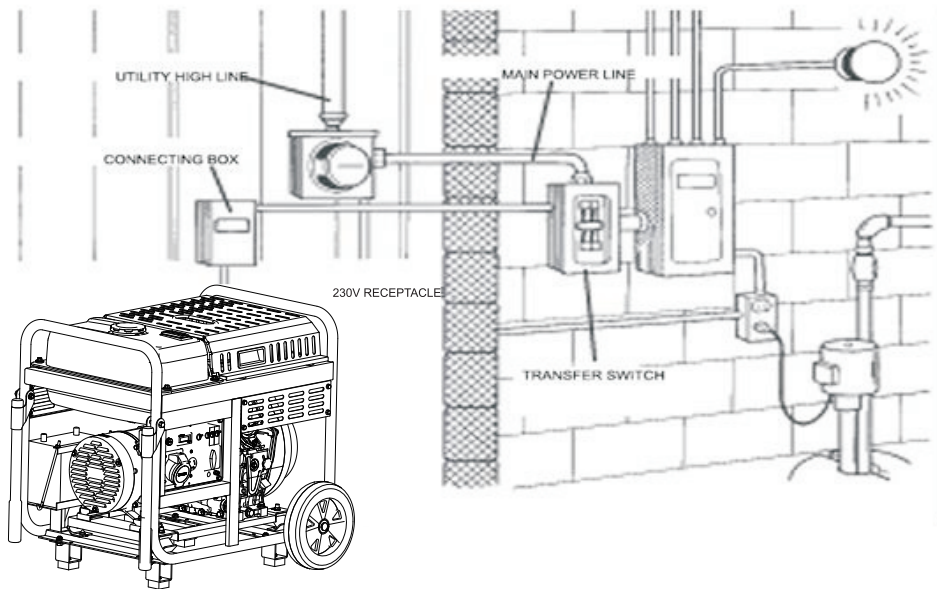
If a generator is to be connected to a residential power line for stand-by power during power outages, all connections must be made by a competent person/licensed Electrician. Connection failure, or improper connection, may result in death, personal injury or damage to the generator, damage to the appliances, damage to the building's wiring and may even result in a fire. A Certificate of Compliance is a legal requirement for this application/installation.

- When connecting the generator to the house wiring the generator output power must not be taken from the 16 amp receptacle.
- A transfer switch must be installed to transfer the load from the commercial power source to the generator. This switch is necessary to prevent accidents caused by the recovery from power outages. Only use a transfer switch of the correct capacity. Install the transfer switch between the household DB Board and the Generator. This installation must only be done by a qualified/competent person (Electrician).



Caution

If the neutral wire of the house wiring is earthed, be sure to earth the ground terminal of the generator. An electric shock may result if this procedure is not followed.



7.8. OPERATING THE GENERATOR AT HIGH ALTITUDE:

When operating the generator at altitude the performance of the generator is reduced and the fuel consumption is increased. The generator power output is reduced approximately 3-5% per 300m above sea level. Carefully calculate the power output of the generator before attempting to connect any appliances.

7.9. DC APPLICATION:

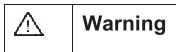
Note: Please ensure that you charge the battery for 24 hours using a battery charger on slow/trickle charge prior to using it for the first time.

- The DC terminal on the control panel provides a power source of 12 V / 3.8 A. The red terminal is the “+” (positive) pole of power source whilst the black terminal is “-” (negative) pole of power source. The power source can be used for a 12 V DC load and can also be used to charge the battery.
- Connect the positive (+) red terminal on the generator to the positive (+) red terminal on the battery.
- Connect the negative (-) black terminal on the generator to the negative (-) black terminal on the battery.
- Use the recoil starter to start the generator. The generator will start to charge the battery.



Caution

The DC load current cannot exceed 8 A



Be careful not to reverse the polarities as this may cause damage to both the generator and the battery. Always disconnect the battery terminals when storing the generator.

7.10. BATTERY CHARGER:

- Disconnect the battery cables before/during charging the battery.
- Ensure that the battery charger is connected correctly.
- Please note that we recommend a trickle/slow charge.
- Once the battery is fully charged reconnect the battery to the generator (refer to page 9) .

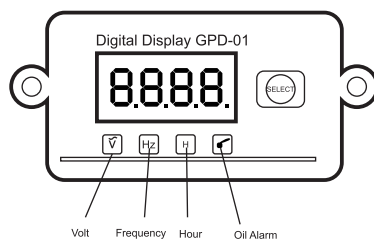
7.11. SAFETY PRECAUTION WHEN CHARGING THE BATTERY:

- An explosive hydrogen gas is discharged through vent holes in the battery during the charging process.
- Electrolyte fluid can burn your eyes and clothing .Be extremely careful and avoid contact all contact. If contact occurs wash the affected area immediately with large quantities of water or milk and consult a doctor for treatment.

7.12. STOPPING THE GENERATOR:

- Turn off the power switch of the electric equipment and unplug the cord from the receptacle of the generator.
- Turn the circuit breaker to the “OFF” position.
- Allow the engine to cool down for approximately three minutes without any load connected to the generator prior to switching it off.
- Turn the key switch to “STOP” position.
- Adjust the adjusting handle to the “OFF” position.
- Close the fuel cock.

7.13. FOUR STAGE DIGITAL METER:



- Voltage Display Range: (160V-250V) single phase
- Digital Meter Display: The display shown on the digital meter 6 minutes prior to switching off the machine will be the first display shown when restarting the machine.
- LCD Display: Press the “SELECT” button to change the LCD display from voltage, hours run, frequency and oil level.
- Hours Run Time Indicated on the Digital Meter: 0.1h=6 minutes, 0.2h = 12minutes. The meter display will only change every 6 running minutes.
- Display Frequency: $\geq 30\text{Hz}$ (EG:50Hz will display as F-50)
- Display Voltage: 160V - 250V (a.c. single phase)
- Oil Level Display: If there is insufficient oil in the machine the oil light will flash red and the machine will automatically switch off.

Do not attempt to restart the machine until you have refilled with oil.

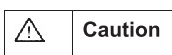
Digital Meter Maintenance Display Tips:

P-25: Machine requires the oil to be changed.

P-50: Machine requires the air filter element and the oil to be changed.

P-100: The machine requires the fuel filter, air filter element and the oil to be changed.

NOTE: THE MAINTENANCE TIPS AS INDICATED ABOVE, ONCE DISPLAYED, WILL NOT SHOW AGAIN AFTER THE MACHINE HAS BEEN SWITCHED OFF AND THEN RESTARTED.



DO NOT TRIMMER OR OPEN THE DIGITAL METER AS IT WILL NULLIFY YOUR WARRANTY AND MAY ALSO LEAD TO AN ELECTRIC SHOCK.

8. WATTAGE INFORMATION:

- Some appliances need a “surge” of power when starting. This is commonly known as a “LAGGING” Load.
- This means that the amount of electrical power needed to start the appliance may exceed the amount needed to run the appliance.
- Electrical appliances and tools normally come with a label indicating voltage, cycles/Hz amperage (A) and electrical power needed to run the appliance or power tool.
- Check with your store where you purchased your appliance from with questions regarding power surges of certain appliances or power tools.
- Electrical loads such as incandescent lamps and hot plates require the same wattage to start as is needed to maintain their use. This is commonly known as a “LEADING” load.
- Loads such as fluorescent lamps require 1 ½ to 2 times the indicated wattage during start - up.
- Electrical motors require a large starting current. Power requirements depend on

the type of motor and its use. Once enough “power” is attained to start the motor, the appliance will require only + -50% of the wattage in order to continue running. Most electrical tools require 1 1/2 to 3 times their wattage for running under load during use. Loads such as submersible pumps and air compressors require a very large force to start. They need 3 to 5 times the normal running wattage in order to start.

NOTE: PLEASE REFER TO THE CONSUMPTION CHART AND LOAD CALCULATOR IN THE QUICK REFERENCE GUIDE BOOKLET.

9. MAINTENANCE SCHEDULE:

FOR ALL YOUR SERVICE AND MAINTENANCE AND WARRANTY QUERIES PLEASE CONTACT ALRASHEED INDUSTRIES. PLEASE REFER TO THE BACK PAGE FOR ALL CONTACT DETAILS.

9.1 DAILY INSPECTION:

Before starting the generator please check:

- That there is sufficient diesel and oil
- That there are no loose or broken bolts and nuts
- That there is no diesel or oil leaks
- That the surroundings are safe and that there is sufficient ventilation
- That there is no fire
- That there is no water or moisture
- That the air filter elements are clean.

9.2 PERIODIC MAINTENANCE:

Periodic maintenance is vital for the safe and efficient operation of the generator. Check the table below for periodic maintenance intervals.

IT IS ALSO NECESSARY FOR THE USER OF THIS GENERATOR TO CONDUCT THE MAINTENANCE AND ADJUSTMENTS ON THE EMISSION-RELATED PARTS LISTED BELOW TO KEEP THE EMISSION CONTROL SYSTEM EFFECTIVE.

The emission control system consists of the following parts:

- High pressure oil pump
- Cold start enrichment system (if applicable)
- Intake manifold (if applicable)
- Air cleaner elements
- Fuel spray nozzle
- Magneto or electronic ignition system
- Spark advance/retard system (if applicable)
- Exhaust manifold (if applicable)
- Hoses, belts, connectors and assemblies

The maintenance schedule indicated in the table is based on normal generator operation. Should the generator be operated in extremely dusty conditions or in heavier loading conditions, the maintenance intervals must be shortened. This will be dependent on the contamination of oil, clogging of filter elements and the wear and tear of parts.

9.3. **PERIODIC MAINTENANCE TABLE:**

Below is the periodic maintenance table for the ALRASHEED POWER Range of Generator. You are required to service and maintain the generator in accordance with this schedule. Falling to do will nullify your warranty policy. You may be required to provide the service history of the generator should it be requested.

MAINTENANCE PARTS	DAILY	EVERY 20 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 500 HOURS
Clean generator and check all nuts and bolts	*				
Tighten wheels and axle			*		
Check and refill engine oil		*			
Replace engine oil			Initial	*	
Clean air filter			*		
Replace air filter element				*	
Clean fuel strainer					
Replace fuel strainer				*	
Remove carbon from cylinder head					*
Clean and adjust valve clearance					*
Clean injectors					*
Replace carbon brushes					*
Replace fuel lines					*
Charge battery	When generator not in use				

NOTE:

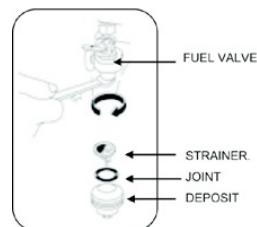
- The initial oil change should be performed after the first twenty (20) hours of operation.

NOTE:

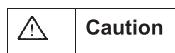
- We recommend that all maintenance is carried out by a qualified technician. Proof of such maintenance will be required for warranty purposes.
- Before changing the oil, please try to look for a suitable way to dispose of old oil.
- Do not pour it down drains, onto garden soil or into open streams.

10. "HOW - TO " MAINTENANCE :

- Change oil after the first 20 hours or first month of operation. Thereafter please refer to your periodic maintenance schedule provided in the operator's manual.
- Undo the oil screw, remove the oil drain plug whilst the diesel generator is off and drain the oil. (The drain plug is located at the bottom of the cylinder block).
- Always replace and tighten the oil drain plug when replacing the oil.
- Place an appropriate container under the oil draining hole to collect the used oil.
- Unscrew the oil draining screw plug by turning counter clockwise.
- Remove the oil filling plug so the engine can take in air. This will enable the oil to drain faster.



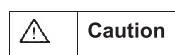
- Once all of the oil has been properly drained from the engine replace the draining bolt and joint. Clean any excess oil off the engine.
- Refill the engine with clean oil (as per the operator's manual). Ensure that the engine is on a flat level surface when doing this



It is recommended that you avoid direct skin contact with engine oil at all times.

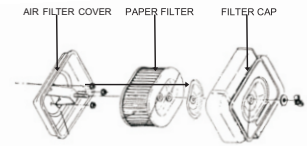
10.1. CLEANING AIR FILTER:

- A dirty air filter element will make the starting of the generator difficult. It will also cause the generator to under-perform and may cause permanent damage.
- Always keep the air filter element clean.
- The urethane foam element must be washed with a cleaning detergent. After cleaning it ensure that it is dried properly before reinstalling. Please clean every 50 running hours.



Please clean the air filter elements more often when operating in dusty environments.

- Do not operate the generator without the Air Cleaner Element as this will damage your generator.
- Do not clean the air filter element with cleaner. Brush off the outer dirt of the air filter element with a soft brush.
- Pat the element several times to remove the dust. For more stubborn dirt use a high pressure blower. Do not use a brush to remove the dirt as this will block the vent holes.



10.2. CLEAN THE OIL FILTER:

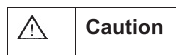
- Loosen the lock nut, take out the oil filter and wash it with a clean petrol or kerosene.
- Wash and change the fuel filter:

Fuel filter must wash frequently to ensure a maximum output power of diesel engine.

Discharge the fuel from fuel tank.

Loosen the small screw of fuel switch, take out the filter and clean the filter thoroughly with diesel oil.

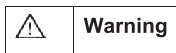
10.3. CLEAN FUEL STRAINER:



Please note that dirt and water in the fuel are removed by the fuel strainer.

- Close the fuel valve. Detach the depositing cup and remove the "O" ring and screen.
- Clean the depositing cup, the "O" ring and screen with a nonflammable solvent.
- Reinstall the "O" ring and the screen and tighten the cup.
- Open the fuel valve to check if there is any leakage.

10.4. FUEL HOSE REPLACEMENT:

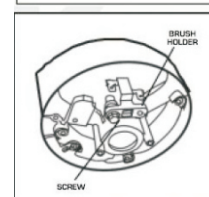
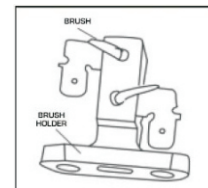


Please take extreme caution when replacing the fuel hose as gasoline is extremely flammable and dangerous. **DO NOT SMOKE OR EXPOSE TO OPEN FLAMES** whilst doing this.

- Please ensure that the fuel hose is replaced every 200 hours. Do not attempt to do this whilst there fuel cock is open.
- Please replace the fuel hose immediately should a leak develop or if the fuel hose is perished.

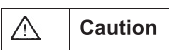
10.5. CHECKING CARBON BRUSH:

- When the brush becomes excessively worn its contact pressure with the slip ring changes and causes a rough surface on the slip ring resulting in irregular generator performance.
- Check and replace the carbon brush every 200 running hours or if the generator performance is irregular.
- If the brush is 0.2 inches (5mm) or less please replace it with a new one immediately.
- Remove the brush cover and disconnect the wire before removing the carbon brush.
- Carefully note the carbon brush direction and relative position with the slip ring when installing a new brush.



10. TRANSPORTING AND STORAGE:

- Before transporting the generator please ensure that the fuel cock is in the “OFF” position.



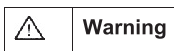
Contact with a hot engine or exhaust system can cause severe burns and or fires, always allow for the engine to cool down prior to transporting and or storing.

Always ensure that the generator is transported and or stored in a flat horizontal position.

Tilting of the unit may cause fuel spillage which may result in a fire.

Before storing the generator for an extended period of time please ensure that the area of storage is free from excessive water, dust and humidity. Please follow the table below:

STORAGE TIME	RECOMMENDED MAINTENANCE
0 - 1 MONTH	NO PREPARATION REQUIRED
1 - 2 MONTHS	DRAIN OUT ORIGINAL FUEL IN THE FUEL TANK AND REPLACE WITH CLEAN FUEL
2-12MONTHS	DRAIN OUT ORIGINAL FUEL IN THE FUEL TANK AND REPLACE WITH CLEAN FUEL EMPTY ALL FUEL FROM THE CARBURETOR EMPTY FUEL FROM THE FUEL SEDIMENT CUP
>12 MONTHS	DRAIN OUT ORIGINAL FUEL IN THE FUEL TANK AND REPLACE WITH CLEAN FUEL EMPTY ALL FUEL FROM THE CARBURETOR EMPTY FUEL FROM THE FUEL SEDIMENT CUP DRAIN THE OLD OIL AND REPLACE WITH CLEAN OIL AFTER REMOVAL FROM STORAGE, DRAIN THE STORED FUEL INTO A SUITABLE CONTAINER AND REPLACE WITH FRESH FUEL BEFORE STARTING
DRAIN THE CARBURETOR BY LOOSENING THE DRAIN SCREW. DRAIN THE FUEL INTO A SUITABLE CONTAINER. REINSTALL THE DRAIN PLUG. HAVING SWITCHED THE FUEL COCK OFF, REMOVE THE SEDIMENT CUP, EMPTY THE FUEL, THEN REINSTALL THE CUP AND SECURE IT PROPERLY.	



Warning

NEVER STORE THE GENERATOR INSIDE A HOUSE OR OFFICE. DO NOT STORE THE GENERATOR WHERE IT IS SUSCEPTABLE TO RAIN OR WATER. ALWAYS DISCONNECT THE BATTERY TERMINALS

12. TROUBLE SHOOTING:

Please refer to the Trouble Shooting Guide Booklet supplied. Alternatively please contact ALRASHEED Industries.

12. TROUBLE SHOOTING:

Please refer to the Trouble Shooting Guide Booklet supplied. Alternatively please contact ALRASHEED Industries.

Failure cause	Troubleshooting
diesel fuel shortage add diesel	Fuel
Fuel handle is not in the "ON" position	Turn the fuel handle to the "ON" position
High pressure pump, spray nozzle do not spray or spray too little	Overhaul of high-pressure pump, spray nozzle and to adjust in injector testbed
Governor controller is not in the "RUN" position	Turn the governor controller to the "RUN" position
Check the oil level of the lubricant oil	The oil amount is between the "higher limit" and "lower limit".
Recoil starter is not enough fast and strong Spray nozzle has dirt	To start the diesel GENERATOR according to "operation program". Clean the spray nozzle.
The storage battery has no electricity	Charging or changing
Main switch is no closing	Turn it to the "ON" position.
Socket is bad connecting	Adjust the socket feet
The engine didn't reach the rated speed	According to the requirement to achieve the rated speed
Blown fuse	Changing
Load electric leakage	Replace the load, reclosed
The engine didn't reach to the rated speed	1. Turn the governor arm to the limit position (apply to E type) 2. Adjust the idle spring position till to the rated speed (apply to XE, Q type)
Voltmeter is broken, pointer is ineffective	Use another voltmeter to confirm GENERATOR's voltmeter is broken and changing
Voltmeter is broken, pointer is ineffective	Use another voltmeter to confirm GENERATOR's voltmeter is broken and changing
AVR is broken or its wire isn't connect	Change the AVR or reconnect
Lubricating oil is too little, to protect XE, Q type	Add oil, the oil amount is between the "higher X, limit" and "lower limit".
X, XE, Q X's, XE's, Q's governor arm are easy to escape	Repair simply, adjust the hook

According to the above method after overhaul generators, if still unable to start generator, please contact the dealer directly.

