

GENERAL SPECIFICATIONS OF DIESEL GENERATOR SET

The D.G SET should be (CPCB IV PLUS COMPLIANT) shall have the following specification

i) 400 KVA DG

- Diesel captive generator with acoustic enclosure.
- Volts-415V
- RPM-1500
- Pf-0.8, 50 Hz
- Phase sequence-R-Y-B
- Connection-Star-Neutral solidly earthed.

1. ENGINE

Direct injection, 4 stroke vertical inline cylinders, liquid cooled with specified shaft output after reduction of power for engine Auxiliaries and When operating at a governed speed of 1500 RPM at NTP condition.

The engine is suitable for continuous duty and conforms to relevant BS/IS with latest amendments. The engine and DG set shall be complete with all standard accessories and fittings as detailed below and as per relevant standards.

- Fly wheel
- Fly wheel housing
- Inlet manifolds and air cleaner-dry type air filters
- Gear type lube oil pump
- Lubricating oil filter
- Lubricating oil cooler
- Mico/Bosch or equivalent fuel injection system with Injection pump, Nozzles, Governor (Mechanical)
- Fuel filter
- Fuel prefilter and water separator
- Exhaust manifold (uncooled)
- Turbochargers
- After cooler
- Electric starting arrangement consisting of:
- Starting gear ring
- Starter motor
- Battery charging alternator with built-in rectifier.
- Engine protection unit for low lube oil pressure and high cooling temperature including solenoid fuel on type
- Engine instrument panel consisting of (engine mounted) Tacho cum

- Hourmeter (mechanical)
- Lube oil pressure gauge
- Stop button, battery charging ammeter, battery charging lamp and fusebox
- Cooling system comprising of: Radiator
 - Fan for radiator
 - Fresh water pump
 - Exhaust silencer (CPCB-MOEF Norms complied) Stainless steel flexible exhaust bellows with end flanges Fuel pipes
- Set of standard tools
- Illustrated part list and operation and maintenance manual-1 no each
- Sheet steel leak proof horizontal cylindrical, diesel tank with stand capable of storing diesel for atleast 8 hours of full load operation of the set with accessories like fuel level indicators.

2. **ALTERNATOR**

- **400 KVA** at 0.8 pf A.C, 415V, 3 phase, 4 wire, 50Hz, brush less Revolving field, self excited and self regulated, directly coupled with the diesel engine and complete with floor mounted, screen protected, drip proof type enclosure and damper windings in the pole phases in accordance with relevant BS/IS standards.
- Re-connectable windings with 12 terminals brought out for connection
- Class H insulation

3. **BASEFRAME**

- Base frame with engine and alternator mounted on the same (close coupled single bearing alternator with cross members mounted on AVM-Anti vibration mount)
- Channel iron combination – base plate to accommodate the engine and alternator with anti vibration mounting.
- Shall be fabricated in sheet metal and shall have provision for mounting of acoustic enclosure.
- Base frame shall have provision of lifting hook for convenient lifting of complete set, i.e., along with canopy, engine and alternator
- Fuel tank with 8 hours full load running capacity fabricated out of CRCA MS sheet duly painted and fitted with inlet and outlet connections and easily removable for cleaning or any maintenance.

4. **BATTERY**

- 24V System / 12V System
- 1 set each Battery leads
- 1 No. each Exhaust Expansion Bellow

5. **ANTI VIBRATION MOUNTINGS**

- 8 nos .with bolt and friction pad (same for both type DG sets)

6. **ACOUSTIC ENCLOSURE**

- Acoustic Enclosure as per CPCB norms specified in tender: (Sound Pressure Level 75 db at 1 m distance from enclosure surface under free field conditions. Acoustic arrangements shall be provided for generator to limit sound level below 75db outside)or latest as per latest CPCB norms
- Acoustic Enclosure shall be powder coated after seven-tank surface preparation process of 16 SWG CRCA MS sheet. The silent canopy shall be of nut bolt type construction
- Canopy panel and doors shall have inside lining of **FIRE-RETARDANT** foam or mineral wool as acoustic material.
- Exhaust pipe shall maintain 1.8 m clearances from the ground level.
- Hinged doors shall be provided to canopy, one door shall have glass window for control panel.
- Emergency engine stop shall be provided at a location accessible to operator.
- Earthing of generator body and neutral shall be carried out as per IS 3043/87.

7. **GENERATOR CONTROL PANEL**

GCP shall be floor mounted, fabricated out of 1.6mm sheet steel with one/two hinged front doors of 2 mm sheet steel bolted back / sides, totally enclosed and vermin proof.

GCP shall consist of

1. Suitably rated 4P Microprocessor Based MCCB with spreader links and UV release
2. Indication lamp for 3 phases, running and on load conditions
3. Voltmeter/Ammeter in 3phases with CT.
4. Frequency meter
5. Wh meter & Hour meter.
6. Standby lowest E/F relay using CT at neutral earthing conductor.
7. Copper Bus bars with suitable capacity with incoming/outgoing terminals

8. Instrument Fuses duly wired and ferruled
9. Earthing studs
10. Earth Fault Relay.
11. Water and lube oil drain outlets located on the outer surface