

KEY FEATURES:

Generator made by OEM-Cummins

Every generating set carries a comprehensive test program & report thereon

Certifications

ISO 8528/1, NEMA MG 1-22, NEMA MG 1.32-33, IEC 60034, BS 5000 PART 99, VDE 0530, ISO 8528/3, ISO TS16949, OHSAS 18001, UL 1446, UL 1004, ISO 9001, ISO 14001, AS 1359, IEC 34

Complete protection functions & safety labels

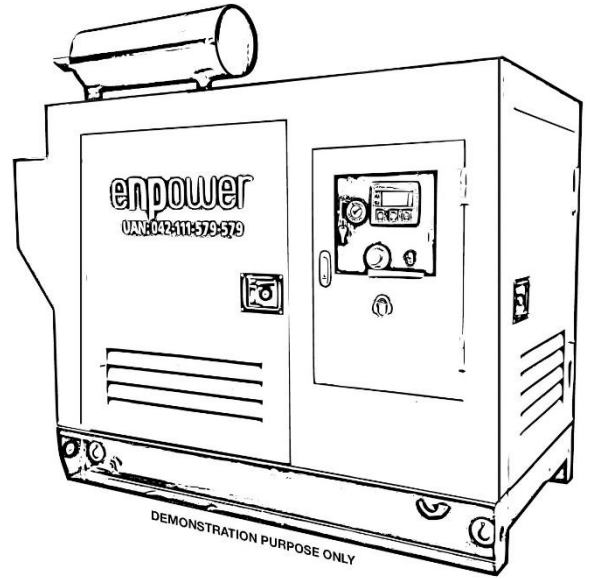
Easy & Economical availability of Spares

Advanced digital control system, long service life, easy to operate, low fuel consumption & anti-vibrating isolators

After Sales support all over Pakistan

High quality, reliable & complete generating set

Easy for operation & maintenance



POWERED BY:



GENERATOR SET:

| | | |
|-----------------|---|-------|
| Generator Model | ECG22 | |
| Prime Power | 20-KVA | 16-KW |
| Standby Power | 22-KVA | 18-KW |
| Configuration | 380-415 V, 3Ph, 50 Hz, 1500 RPM at 0.8 PF | |

FUEL CONSUMPTION

| | |
|-------------------------|----------|
| Consumption @ 100% load | 5.7Ltrs |
| Consumption @ 75% load | 4.6Ltrs |
| Consumption @ 50% load | 3.7 Ltrs |

DIMENSIONS, WEIGHT & FUEL TANK (Approx.)

| Particulars | Open | Canopy-R | Canopy-S |
|-----------------|------|----------|----------|
| Length (Inches) | 69 | 69 | 82 |
| Width (Inches) | 24 | 40 | 40 |
| Height (Inches) | 53 | 53 | 52 |
| Net Weight (Kg) | | 1233 | 1267 |
| Fuel Tank (L) | | 104 | 102 |

ALTERNATOR DATA:

| Brand | Enpower | Leroy Somer | Equivalent |
|--------------------|---------|------------------|------------|
| Model /Series | Current | TAL Series | TBA |
| Frequency /Speed | | 50 Hz / 1500 RPM | |
| Coupling | | Direct | |
| No. of Bearings | | Single Bearing | |
| Phase / Poles | | 3-Phase/4-Pole | |
| Over speed | | 2250 mn-1 | |
| AVR Model | | SX 460 | |
| Voltage Regulation | | ± 1% | |
| Insulation Class | | H | |
| Ingress Protection | | IP 23 | |
| Excitation | | Self Excited | |
| Winding Pitch | | 2/3 (wdg 3) | |

CONTROLLER DATA:

| | |
|-------|-------------|
| Make | Deep Sea-UK |
| Model | DSE 4520 |

ENGINE DATA:

| | |
|-----------------------------|---------------------|
| Manufacturer | Cummins |
| Model | 4B3.9-G11 |
| Cylinders | 4 |
| Cylinders Arrangement | Vertical In-Line |
| Displacement | 3.9 L |
| Aspiration System | Naturally Aspirated |
| Combustion System | Direct Injection |
| Governor | Mechanical |
| Bore | 102 mm |
| Stroke | 120 mm |
| Speed | 50 Hz & 1500 RPM |
| Cooling System | Water Cooled |
| Cycle | 4-Stroke |
| Gross Power PRP (KWm) | 25-KWm /32-HP |
| Gross Power STP (KWm) | 27.5-KWm /36-HP |
| Gross Power PRP | 36 HP |
| Compression Ratio | 17.3:1 |
| Rotation | Anti-Clockwise |
| Lubricating Capacity | 10.9 L |
| Coolant Capacity | 17.2 L |
| Thermostat Operation Range | 82-95° C |
| Coolant & water Ratio | 50:50 |
| Exhaust Gas Temperature | 410° C |
| Heat Rejection Coolant | 29-KW |
| Intake Air Flow L/sec | 33 |
| Exhaust Gas Flow L/sec | 67.5 |
| Allowable Back Pressure | 10 kPa |
| Exhaust Outlet Size | 75 mm |
| Battery Charging Alternator | 63 Amps |
| Starter Motor | 3 KW, 12V |
| Oil Pressure | 207-345 kPa |
| Dry Weight (Kg) | 308 |
| Recommended Oil Grade | API-CH4-SAE15W-40 |
| Battery Voltage | 12 V |
| Fuel Type | Diesel |
| Recommended Fuel | Grade # 2 |

OTHER INFORMATION:

| | |
|------------------------|------------------|
| ATS /AMF Panel | Optional |
| External Fuel Tank | Optional |
| Trailer/Trolley | Optional |
| Remote Monitoring | Optional |
| Operating Temperature | Up to 50° C |
| Low Fuel Level Sensor | Available |
| 4-Pole Breaker | Optional |
| Sound Level @ 7M | 74 dBs (Approx.) |
| Synchronizing System | Optional |
| Customized Color | Optional |
| Customized Sound Level | Optional |

STANDARD SPECIFICATIONS:

1.ENGINE Perkins 4 stroke heavy duty high performance industrial type diesel engine.

2.ENGINE FILTRATION SYSTEM • Air filter. • Fuel filter. • Full flow lube oil filter. All filters have replaceable elements.

3.COOLING RADIATOR. Radiator and cooling fan, complete with safety guards, designed to cool the engine at high ambient temperatures

4.EXHAUST SYSTEM Heavy duty Industrial Exhaust Silencer.

5. CIRCUIT BREAKER TYPE 3 pole MCB. (4 pole is optional)

6. FUEL SYSTEM On Generating Sets up to 500 KVA, the base frame design is incorporated with an integral fuel tank with capacity of approx. 5-8 hours running at Full Load. The tank is supplied complete with fill cap breather, fuel feed and return lines to the Engine and drain plug.

7. ALTERNATOR 7.1 INSULATION SYSTEM • The insulation system is Class H. • All windings are impregnated in either a triple dip thermosetting liquid, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin. • Heavy coat of anti-tracking varnish additional protection against moisture or condensation. 7.2 AUTOMATIC VOLTAGE REGULATOR (AVR) The fully sealed Automatic Voltage Regulator maintains the Voltage Regulation at $\pm 2\%$. Nominal adjustment by means of a trim pot incorporated on the AVR.

8. MOUNTING ARRANGEMENT 8.1 BASE FRAME The complete Generating Set is mounted as a whole on a heavy duty fabricated steel Base frame. 8.2 COUPLING The Engine and Alternator are directly coupled by means of an SAE flange. The Engine flywheel is flexibly coupled to the Alternator rotor. 8.3 ANTI-VIBRATION MOUNTING PADS Anti-Vibration pads are affixed between the Engine / Alternator feet and the Base frame thus ensuring complete vibration isolation of the rotating assembly. 8.4 SAFETY GUARDS The Fan & Fan Drive along with the Battery Charging Alternator are Safety Guard protected for personnel protection.

9. FACTORY TESTS • The Generating set is load tested before dispatch • All protective devices control functions and site load conditions are simulated. The generator and it's systems are checked before dispatch.

10. DOCUMENTATIONS Operation & Maintenance manual, Circuit wiring diagrams and Commissioning / Fault Finding instruction leaflets are accompanied with the Generator.

11. WARRANTY All of the Generating Sets are covered under a warranty policy for a period of 12 months or 1000 Hours Warranty of the equipment is in line with manufacturers warranty terms & conditions. (check warranty statement for more details, as it may vary for different countries)

Disclaimer: In-line with continuous product development, we reserve the right to change specifications without prior notice.

| CONTROLLER LCD DISPLAY: | Deep Sea DSE 4520 | Deep Sea DSE 6020 |
|--|----------------------|----------------------|
| Voltage between Phases (L-L) | ✓ | ✓ |
| Voltage between Neutral and Phase (L-N) | ✓ | ✓ |
| Frequency | ✓ | ✓ |
| 3 Phase Current | ✓ | ✓ |
| Real Power (KW) and Apparent Power (KVA) | ✓ | ✓ |
| Power Factor | ✓ | ✓ |
| Engine Speed | ✓ | ✓ |
| Running Hours | ✓ | ✓ |
| Coolant Temperature | ✓ | ✓ |
| Oil Pressure | ✓ | ✓ |
| Battery Voltage | ✓ | ✓ |
| LCD Alarm Indication | ✓ | ✓ |
| 3 Phase Mains (Utility) Sensing | ✓ | ✓ |

PROTECTING FUNCTIONS:

| | | |
|--|---|---|
| Emergency Stop Button | ✓ | ✓ |
| High coolant Temperature | ✓ | ✓ |
| Low Oil Pressure | ✓ | ✓ |
| Over Current / Load | ✓ | ✓ |
| Under/Over Speed, Frequency & Voltages | ✓ | ✓ |
| Low / High Battery Voltages | ✓ | ✓ |
| Low Fuel Level Warning at 20% | ✓ | ✓ |
| Low Fuel Level Shutdown at 10% | ✓ | ✓ |

RATINGS DEFINITIONS:

Prime Power: These ratings are applicable for supplying continuous electrical power at variable load in lieu of commercially purchased power. 10% overload power is available for 1 hour in 12 hours continuous operation.

Standby Power: These ratings are applicable for supplying continuous electrical power at variable load in the event of a utility power failure. No overload is permitted.

STANDARD REFERENCE CONDITIONS:

Output ratings are presented at 25° C air inlet temperature, barometric pressure 100 kPa relative humidity 30%. This rating set is designed to operate at high ambient temperature up to 50° C, humidity up to 99% and higher altitude. De-rating may apply. (Some of the specifications are not standard on all Genset models)

OPTIONAL ITEMS



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engineering company

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