

## TECHNICAL SPECIFICATION OF 160 KVA SILENT DG

**SET.**

**CSH-A/160**

Powered by:

**ASHOK LEYLAND AL6DTIDG4**

160KVAat 50 Hz

### GENERAL

C&S Himoina-**CSH** is a 50:50 joint venture company with Indian Leaders in Switchgear components “C&S Electric” and world largest Manufacturer of Silent DG Set , “Himoina Group” of Spain.

**CSH Silent DG sets** are available in the range of 5 to 250 KVA with ‘**Ashok Leyland**’ Diesel Engines.

**160 KVA CSH -Ashok Leyland** DG Set's is factory assemble pre-aligned and pre-tested ready to use set incorporating the following:

### ENGINE

Ashok Leyland make diesel engine **AL6DTIDG4** , which is a 6 Cylinder, 4 stroke in-line water cooled engine with max power output of **197.05 BHP (147 KW)** with electric start and designed to run at 1500 rpm continuous on 100% load & also capable to take 10% overload for 1 hours out of 12 hours of operation . Complies with current **CPCB II** emission norms (as per GSR.448 (E) - MoEF, Govt of India)

### ENGINE AND BLOCK

- Optimized cast Iron Cylinder block with optimum distribution of forces
- Drop Forged Steel connecting Rods.
- Crankshaft hardened bearing surfaces and fillets for moderate Load on main and big-end bearing.
- Keystone Top Compression rings for long service life.
- Replaceable valve guide and valve seats.
- Lift eyelets
- SAE3 Flywheel Housing and SAE10 Flywheel.
- Fixed Integrated Radiator.

### LUBRICATION SYSTEM

- Full flow disposable spin-on oil filter for extra high filtration.
- Rotary displacement oil pump driven by the crankshaft.
- Deep rear oil sump
- Short oil dip stick at rear
- Integrated full flow oil cooler, side mounted
- Oil Change Period 600hrs or 12 months whichever is earlier

### FUEL SYSTEM

- SAPL rotary FIP
- Gear driven fuel feed pump.
- Six hole fuel Injection nozzles
- Spin on type fuel filter for longer duration
- Electronic Governor -A0 Class
- Integrated fuel filter cum water separator

### INTAKE AND EXHAUST SYSTEM

- Connection Flange for exhaust line.
- Residential type Exhaust Silencer.

Dimension and specification are only indicative. Product innovation is a continuous process, hence data given is subject to change without notice.

### COOLING SYSTEM

- Poly V Belt driven, maintenance free coolant pump with high degree of efficiency.
- Efficient cooling with accurate cooling control through a water distribution duct in the cylinder block.
- Reliable thermostat with minimum pressure drop.
- Aluminium Radiator with pusher fan.

### ELECTRICAL SYSTEM

- 12V DC electrical system with digital control panel.
- Sensors\_for Oil Pressure and Water Temperature.
- Start on solenoid mounted on fuel injection pump.

### ALTERNATOR

Leroy Somer or equivalent make 160 KVA single bearing alternator suitable for operation at 1500 rpm , 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire system, conforming to BS 5000 / IS 4722. The Alternators are brushless type, screen protected, drip proof, revolving field, self excited, self regulated through an AVR.

### ACCOUSTIC ENCLOSURE

The acoustic enclosure is made of 1.6 mm thick CRCA steel sheets and C Type sheet metal base frame of 3 mm thick CRCA Steel Sheet, painted in White & Blue shade. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75 dBA at 1mtr sound levels specified by CPCB. The Key Features of the Enclosure are:

- Specially designed to meet CPCB norms of 75 dBA @ 1mtr at 75% load
- Four point lifting for easy handling
- Made on special purpose CNC machines for consistent quality & workmanship
- CRCA used is Powder coated and pre-treated in 11 Stage pre-treatment plant for long lasting service life and superior finish
- With UV resistant powder coating.
- Insulation material meets exacting IS 8183 specifications for better sound attenuation
- Flush styling - no projections
- Fluid drains for lube oil and fuel
- Fuel filling point
- MS tank with Inlet and outlet arrangement with Drain Plug and Air Vent.
- Residential Silencer inside Canopy.

### GENSET CONTROLLER

Genset Control Unit with Integrated E-Governor helps in reading all Genset Inputs and controls the genset. GCU help in monitoring following parameters:

- Controls the engine Speed.Supports Auto Mains Failure (AMF) Functions for 1Ph and 3 Phase Genset.
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- Low Fuel Level Supports Manual Control (MCP) Functions for 1Ph and 3Ph Genset.
- Measures Genset Voltages and Currents
- Measures Mains Supply Voltages and Currents.
- Measures electrical Parameters like Frequency, Power Factor, Generator Power.
- Monitor critical engine safety parameters.
- Starts / Stops the Genset.
- Have Counters for Genset Start / Stop, Run Hours, KWh, Power Factor.



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### OTHER FEATURES

- Robust, Compact, Fuel efficient Diesel Generator sets designed to operate under arduous site conditions
- Latest Technology & Highly Reliable.
- Highly Engineered for Optimized Power Solutions, can be connected to laptop / computer using RS@#@ port and monitor all the engine performance related data.
- Troubleshooting and fine tuning of engine can be done by using electronic tool.
- Designed to operate continually 24 x 7 @ 100% load.
- Better Fuel Consumption.
- Low Running cost.
- Compact Foot Print.
- Easy access for maintenance

### Detailed Technical Specification

Technical Data	160 KVA @ 1500 RPM	
No. of cylinders and configuration	In-line 6	
Method of operation	4-stroke	
Bore, mm (in.)	104 (4.094)	
Stroke, mm (in.)	113 (4.448)	
Displacement, ltrs.	5.76	
Compression ratio	16.5 ± 0.5 : 1	
Fuel Tank Capacity Ltr	230 Ltrs	
Coolant Capacity approx. Ltr	25	
Lube Oil Capacity	17.5	
DG weight approx.	2176 kg	
<b>Performance</b>		
with fan, kW (hp) at:	kW	Hp
Prime Power	147	197.05
Max Standby Power	161.7	216.9
<b>Fuel system</b>		
<b>Fuel consumption at Prime power</b>	g / kWh	Lit / Hr
75%	220	27.9
<b>Governing</b>	Electronic - A0 Class	
<b>Oil Change Period</b>	600 Hours or 1 year or whichever is earlier	
<b>Starting System / Battery</b>	12 V / 90 AH	
<b>Safety Protection</b>		
Safety Protection HWT	Yes	
Safety Protection for Low lube oil pressure trip	Yes	
Safety Protection for Over speed Trip	Yes	
Safety Protection for Low Fuel Level	Yes	
<b>DG Size</b>		
Length (mm)	3400	
Width (mm)	1400	
Height including base (mm)	1870	

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