

## TECHNICAL SPECIFICATION OF 10 KVA SILENT DG SET.

CSH-A/10

Powered by:

**ASHOK LEYLAND AL2CDG1**

10KVAat 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.

**10 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 Diesel Engine Model **AL2CDG1** is a **2 Cylinder**, 4 stroke in-line water cooled engine with prime power output of **21 BHP (15.6 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.
- Replaceable valve guide and valve seats.
- SAE3 Flywheel Housing and SAE10 Flywheel.
- Fixed Integrated Radiator.

### LUBRICATION SYSTEM

- Full flow disposable spin-on oil filter for extra high filtration.
- Gear type 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

- Inline FIP
- Plunger type fuel feed pump.
- Five hole fuel Injection nozzles
- Integrated fuel filter cum water separator
- Mechanical Governor – A1 Class

### INTAKE AND EXHAUST SYSTEM

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

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### 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 Micro Processor based Engine Control Panel
- Sensors\_for Oil Pressure and Water Temperature
- Add-on shut off solenoid with fuel injection pump

### ALTERNATOR

Leroy Somer or equivalent - make 10 KVA single bearing alternator suitable for operation at 1500 rpm , 0.8 pf (lag) suitable for 50 Hz, 1 Phase /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.

### CONTROL PANEL

The control panel incorporates digital indication for Water Temperature, Lube Oil Pressure, Engine RPM, Battery charging, ammeter and hour meter. It also includes the standard DG ON and load on DG Indications, with Key Start & Stop.

- The control panel comes with fault indications (LED type on ESU) for Low Lube Oil
- Pressure High Water Temperature, Low Fuel Level Microprocessor based design. Compact Size, Elegant design, easy install.
- Designed for Water/Air Cooled Engine.
- Suitable for High Speed Engines.
- Tamper proof Engine Running Hour counters.
- Built-in key switch for ON/OFF control.
- Push Buttons for Ignition & display scroll control.



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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.
- 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	10 kVA @ 1500 RPM	
No. of cylinders and configuration	In-line 2	
Method of operation	4-stroke	
Aspiration	Natural Aspiration	
Bore, mm	104	
Stroke, mm	113	
Displacement, ltrs.	1.92	
Compression ratio	17.5 ± 0.5 : 1	
Fuel Tank Capacity Ltr	70 Ltrs	
Coolant Capacity approx. Ltr	10 Ltrs	
Lube Oil Capacity	6 Ltrs	
DG weight approx.	676 kg	
<b>Performance</b>		
with fan, kW (hp) at:	kW	HP
Prime Power	15.6	21
Max Standby Power	17.2	23
<b>Fuel system</b>		
<b>Fuel consumption at Prime power</b>		
75%	2.35 ltrs/hrs	
<b>Governing</b>	Mechanical - A1 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)	1760	
Width (mm)	900	
Height including base (mm)	1245	

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