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D15 Series for 375kVA – 400kVA – 450kVA generator

Ratings (kW/PS)	1500rpm/50Hz				1800rpm/60Hz		
	D15	D15A	D15A1	D15A2	D15B	D15B1	D15B2
Prime		405/551	365/496	330/450	440/599	405/551	370/503
Standby	500/680	445/605	415/565	363/494	500/680	460/626	405/551

Ratings Definitions

The power ratings of Emergency Standby and Prime are in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046.

Electric power (kW) should be estimated by considering generator efficiency, cooling fan power loss and power derating due to altitude and ambient temperature.

STANDBY POWER RATING is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of a 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

PRIME POWER RATING is available for an unlimited of hours per year in variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 24 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12 hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

◆ GENERAL ENGINE DATA

• Engine Type	4-Cycle, V-type, 8-Cylinder, Turbo charged & intercooled (air to air)
• Bore x stroke	128x142 mm
• Displacement	14.618 L
• Compression ratio	14.6:1
• Rotation	Counter clockwise viewed from Flywheel
• Firing order	1-5-7-2-6-3-4-8
• Injection timing	18°±1° BTDC @ 1500 rpm, 20°±1° BTDC @ 1800 rpm
• Dry weight	1050kg
• Dimension(L x W x H)	1484 x 1389 x 1288 mm
• Fly wheel housing	SAE 1
• Fly wheel	14(PCD : 438.15 mm/17.25 inch)
• Number of teeth on flywheel	160

◆ INTAKE & EXHAUST SYSTEM

• Combustion Air Consumption	2137-3077 m³/h
• Max. Intake Restriction	5 kPa
• Max. Exhaust Temperature After Turbo)	440-530°C
• Max. Exhaust Back Pressure	5 kPa
• Exhaust Gas Flow	4695-7615 m³/h
• Cooling fan air flow	713 m³/min (D15/D15A/D15A1/D15A2); 810 m³/min (D15B/D15B1/D15B2)

◆ ENGINE MOUNTING

● Maximum Bending Moment at Rear Face to Block	1325 N-m
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◆ COOLING SYSTEM

● Coolant Capacity for Engine	20 L
● Max. Permissible Temperature	90 °C
● Max. Coolant Warning Temperature	95 °C
● Max. Coolant Shutdown Temperature	105 °C
● Thermostat Open Temperature	71 °C
● Max. external coolant system restriction	Not available

* Two radiator options are provided, based on allowable maximum Air temperature On radiator inlet (Air On) Air On 40°C / Air On 50°C

- ATB (Ambient Temperature before Boiling) of generator set varies depending on the engine room ventilation design, even if the same radiator applied. Adequate selection of radiator options by means of the cooling test is highly recommended, and generator set makers are responsible for the selection.

◆ FUEL SYSTEM

In-line pump type with integrated, electromagnetic actuator.

● Governor	Electric type			
● Used fuel	Diesel fuel oil			
● Fuel Consumption of generator set prime output	25%(L/h)	50%(L/h)	75%(L/h)	100%(L/h)
--D15	33.90	62.77	92.44	124.70
--D15A	27.46	50.84	74.88	101.01
--D15A1	25.04	45.52	65.11	88.70
--D15A2	22.87	40.83	59.10	80.23
--D15B	33.00	56.96	82.70	113.66
--D15B1	29.03	49.77	73.56	100.32
--D15B2	26.52	45.49	67.60	90.94
● Lowest Fuel Consumption Ratio	196-207 g/kW • h			

◆ LUBRICATION SYSTEM

Force-feed lubrication by gear pump, lubricating oil cooling in cooling water circuit of engine.

● Oil capacity	19-27 L
● Lube oil specification	CF-4
● Lub oil pressure	Idle Speed: Min 160 kPa Governed Speed: Min 200 kPa
● Maximum oil temperature	110 °C
● Max. Permissible Oil Temperature	90 °C
● Oil Consumption (as % of fuel consumption)	≤0.5

◆ ELECTRICAL SYSTEM

● Charging Alternator Voltage	28 V
● Charging Alternator Capacity	45 A
● Starting Voltage	24 V
● Starting Motor Capacity	7 kW
● Minimum Battery Capacity	2×200 Ah
● Minimum Temperature for Unaided Cold Start	-10 °C

◆ VALVE SYSTEM

● Type	Overhead valve type
● Number of valve	Intake 1, exhaust 1 per cylinder

• Valve lashes at cold	Intake 0.3 mm , Exhaust 0.4 mm	
• Valve timing		
	Opening	Close
-Intake valve	24 deg.BTDC	36 deg.ABDC
-Exhaust valve	63 deg.BBDC	27 deg.ATDC

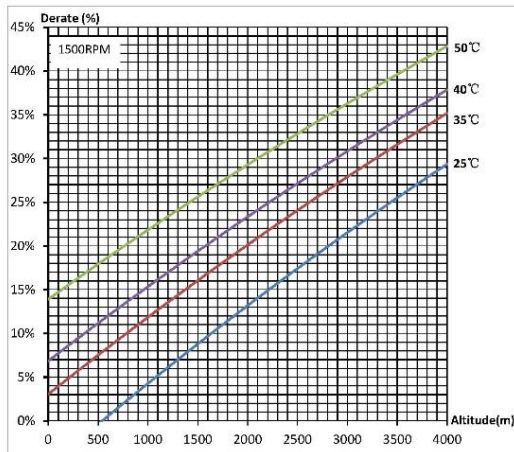
◆ Engine Data with Dry Type Exhaust Manifold

• Heat Rejection to Exhaust	328-468 kW
• Heat Rejection to Coolant	156-222 kW
• Heat Rejection to Intercooler	79-113 kW
• Radiated Heat to Ambient	33-48 kW
• Cooling water circulation	590 L/min (1500 rpm),660 L/min (1800 rpm)

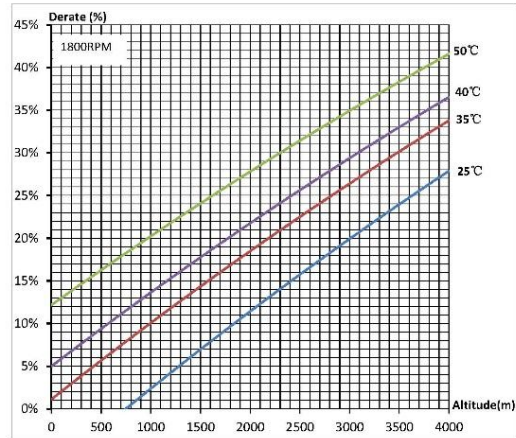
◆ DERATING FROM ISO 3046 STANDARD CONDITIONS

The maximum power is the STANDBY rating when assessing derate parameters.
Ambient temperature is air cleaner inlet temperature.

1500rpm



1800rpm



◆ ENGINE DIMENSION

