



# 4HTAA4.3-G31

## ◎ Power

Engine Speed r/min	Type of Operation	Engine Power	Generator Power	
		kW	kW	kVA
1500	Prime Power	51	40	50
	Standby Power	56	45	55
1800	Prime Power	62	50	62.5
	Standby Power	68	55	68

-. The engine performance is as per GB/T2820

-. Ratings are based on GB/T1147.1.

→**Prime Power** :--- There is no time limit in the case of variable load operation. In any 250hours of continuous operation period, the variable load of average work load less than 70%of the prime power. The operation time in the situation of 100% prime power no more than 500 hours. Permit 10% overload running 1hours in any 12 hours of continuous operation period. The overload 10% power running time of every year no more than 25 hours..

→**Standby Power**: The annual total standby power load should be less than 80%and the average running time shall be less than200 hours. Among them the standby power point should be no more than 25 hours a year. .

## ◎ SPECIFICATIONS

○ Engine Model	4HTAA4.3-G31
○ Engine Type	In-line,4strokes,4valves,water-cooled, Turbo charged with aftercooler
○ Combustion type	Direct injection
○ Cylinder Type	Dry liner
○ Number of cylinders	4
○ Bore ×stroke	105×124mm
○ Displacement	4.3 L
○ Compression ratio	16 : 1
○ Firing order	1-3-4-2
○ Injection timing	Electronic control
○ Dry weight	Approx. 460kg
○ Dimension (L×W×H)	1037×728×1024 mm
○ Rotation	SAE NO.3
○ Fly wheel housing	SAE NO.11.5(tooth number of gear:127)

## ◎ MECHANISM

○ Type	Overhead valve
○ Number of valve	Intake 2, exhaust 2 per cylinder
○ Valve lashes at cold	Intake 0.25mm Exhaust 0.50mm

## ◎ VALVE TIMING

	Opening	Close
○ Intake valve	20.9° BTDC	44.9° ABDC
○ Exhaust valve	51.7° BBDC	11.7° ATDC

## ◎ FUEL CONSUMPTION

○ Power	L/h (1500r/min)	L/h (1800r/min)
25%	3.0	3.6
50%	6.0	7.3
75%	8.9	10.8
100%	11.9	14.5
110%	13.2	16.1

## ◎ FUEL SYSTEM

○ Injection pump	DENSO
○ Governor	DENSO
○ Feed pump	DENSO
○ Injection nozzle	Multi hole type
○ Opening pressure	180MPa
○ Fuel filter	Full flow, cartridge type
○ Used fuel	Diesel fuel oil

## ◎ LUBRICATION SYSTEM

○ Lub. Method	Fully forced pressure feed type
○ Oil pump	Gear type driven by crankshaft
○ Oil filter	Full flow, cartridge type
○ Oil pan capacity	High level 13 liters Low level 11 liters
○ Angularity limit	Front down 25 deg. Front up 35 deg. Side to side 35 deg.
○ Lub. Oil	Refer to Operation Manual

## ◎ COOLING SYSTEM

- Cooling method Fresh water forced circulation
- Water capacity 6.8 liters  
(engine only)
- Lid Min. pressure 70kPa
- Water pump Centrifugal type driven by belt
- Water pump Capacity 155L/min (1500r/min)  
186L/min (1800r/min)
  
- The maximum temp. of coolant in prime/ Standby power 104/100
- Thermostat Wax-pellet type  
Opening temp. 82 °C  
Full open temp. 95 °C
- Cooling fan Blower type, plastic  
550 mm diameter, 9blades  
Power consumption 2kw
- Cooling air flow 2 m<sup>3</sup>/s

## ◎ ELECTRICAL SYSTEM

- Charging generator 24V×55A
- Voltage regulator Built-in type IC regulator
- Starting motor 24V×4.5kW
- Battery Voltage 24V
- Battery Capacity 120 AH

## ◎ ENGINEERING DATA

- Heat rejection to coolant 5.1kcal/sec (1500r/min)  
6.2kcal/sec (1800r/min)
- Heat rejection to intercooler 3.2kcal/sec (1500r/min)  
3.9kcal/sec (1800r/min)
- Air flow 4.5m<sup>3</sup>/min (1500r/min)  
6.2m<sup>3</sup>/min (1800r/min)
- Exhaust gas flow 10.2m<sup>3</sup>/min (1500r/min)  
13.7m<sup>3</sup>/min (1800r/min)
  
- Exhaust gas temp. 600 °C
- Max. permissible restrictions 3 kPa initial  
6 kPa final (need charge filter element)
  
- Intake system
  
- Exhaust system 6 kPa max.
- Max. permissible altitude 2000 m

