

GV222TIC

© POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Prime Power	410	557
	Standby Power	*	*
1500	Prime Power	350	476
	Standby Power	*	*



Note : -. The engine performance corresponds to ISO 3026, BS 5514 and DIN 6271.

-. Ratings are based on ISO 8528.

→ Prime power available at variable load. The permissible average power out put (during 24h period) shall not exceed 70% of the prime power rating.

© MECHANICAL SYSTEM

○ Engine Model	GV222TIC
○ Engine Type	V-type 4 cycle, water cooled Turbo charged & intercooled (water to air)
○ Combustion type	Stoichiometric, Premixed and spark ignited
○ Cylinder Type	Replaceable wet liner
○ Number of cylinders	12
○ Bore x stroke	128(5.04) x 142(5.59) mm(in.)
○ Displacement	21.927 (1,338.0) lit.(m ³)
○ Compression ratio	10.5 : 1
○ Firing order	1-12-5-8-3-10-6-7-2-11-4-9
○ Ignition timing	12° BTDC
○ Compression pressure	Above 28 kg/cm ² (398 psi) at 200rpm
○ Dry weight	Approx. 1,750 kg (3,858 lb)
○ Dimension (LxWxH)	1,717 x 1,222 x 1,195 mm (68 x 48 x 47 in.)
○ Rotation	Counter clockwise viewed from Flywheel
○ Fly wheel housing	SAE NO.1
○ Fly wheel	Clutch NO.14

© MECHANISM

○ Type	Over head valve
○ Number of valve	Intake 1, exhaust 1 per cylinder
○ Valve lashes at cold	Intake 0.25mm (0.0098 in.) Exhaust 0.35mm (0.0138 in.)

© VALVE TIMING

	Opening	Close
○ Intake valve	24 deg. BTDC	36 deg. ABDC
○ Exhaust valve	63 deg. BBDC	27 deg. ATDC

© FUEL CONSUMPTION

○ Prime Power (Nm ³ /hr)	1,500 rpm	1,800 rpm
25%	32.2	40.6
50%	51.5	64.9
75%	72.8	86.5
100%	90.9	109.3

© FUEL SYSTEM

○ Carburetor	Impco 200M Varifuel carburetor (2EA)
○ Gas regulator	Maxitrol RV61 (2EA)
○ Max. inlet pressure	1.0 psi at the engine inlet

© 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 40 liters (10.6 gal.) Low level 33 liters (8.7 gal.)
○ Angularity limit	Front down 20 deg. Front up 20 deg. Side to side 15 deg.
○ Lub. Oil	Refer to Operation Manual Low ash type(0.5wt%) natural gas engine oil API service grade CD or higher SAE 15W-40

© COOLING SYSTEM

○ Cooling method	Fresh water forced circulation
○ Water capacity (engine only)	44 liters (11.62 gal.)
○ Pressure system	Max. 0.9 kg/cm ² (12.8 psi)
○ Water pump	Centrifugal type driven by belt
○ Water pump Capacity	760 liters (200.8 gal.)/min at 1,800 rpm (engine)
○ Thermostat	Wax – pellet type Opening temp. 71°C Full open temp. 85°C

© ELECTRICAL SYSTEM

○ Charging generator	24V x 45A alternator
○ Voltage regulator	Built-in type IC regulator
○ Starting motor	24V x 7.0kW
○ Battery Voltage	24V
○ Battery Capacity	200 AH (recommended)
○ Ignition controller	12 or 24V DC (min 8V DC at start, 32V DC max)

© IGNITION SYSTEM

○ Spark plug	NGK IFR7B-D, 0.4mm air gap Champion RC78PYP, 0.38mm air gap
○ Ignition controller	Altronic CPU-95 unit (24V DC)
○ Ignition coil	Altronic 501 061 blue epoxy individual coil
○ Trigger system	Magnetic pick-up sensor and trigger wheel and Hall-effect (0.5/ 0.5/ 1.0mm air gap)

© ENGINEERING DATA

○ Water flow	630 liters/min @1,500 rpm
○ Heat rejection to coolant	90.1 kcal/sec @1,500 rpm
○ Heat rejection to CAC	6.1 kcal/sec @1,500 rpm
○ Air flow	29.6 m ³ /min @1,500 rpm
○ Exhaust gas flow	47.8 m ³ /min @1,500 rpm
○ Exhaust gas temp.	490 °C @1,500 rpm
○ Water flow	760 liters/min @1,800 rpm
○ Heat rejection to coolant	108.2 kcal/sec @1,800 rpm
○ Heat rejection to CAC	9.1 kcal/sec @1,800 rpm
○ Air flow	35.5 m ³ /min @1,800 rpm
○ Exhaust gas flow	57.4 m ³ /min @1,800 rpm
○ Exhaust gas temp.	515 °C @1,800 rpm
○ Max. permissible restrictions	
- Intake system	220 mmH ₂ O initial 635 mmH ₂ O final
- Exhaust system	800 mmH ₂ O max.

◆ CONVERSION TABLE

in. = mm x 0.0394	lb/ft = N.m x 0.737
PS = kW x 1.3596	U.S. gal = lit. x 0.264
psi = kg/cm ² x 14.2233	kW = 0.2388 kcal/s
in ³ = lit. x 61.02	lb/PS.h = g/kW.h x 0.00162
hp = PS x 0.98635	cfm = m ³ /min x 35.336
lb = kg x 2.20462	Nm ³ = SCF x 0.0283
Kg/hr = Nm ³ /hr x 0.732 (natural gas)	
Btu/ft ³ = MJ/m ³ x 26.8392 (natural gas)	