

GV180TIC

© POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Prime Power	340	462
	Standby Power	*	*
1500	Prime Power	290	394
	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	GV180TIC
○ 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	10
○ Bore x stroke	128(5.04) x 142(5.59) mm(in.)
○ Displacement	18.273 (1,115.09) lit.(in ³)
○ Compression ratio	10.5 : 1
○ Firing order	1-6-5-10-2-7-3-8-4-9
○ Ignition timing	14° BTDC
○ Compression pressure	Above 28 kg/cm ² (398 psi) at 200rpm
○ Dry weight	Approx. 1,520 kg (3,351 lb)
○ Dimension (LxWxH)	1,495 x 1,222 x 1,169 mm (59 x 48 x 46 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%	25.8	32.5
50%	40.8	51.2
75%	56.5	72.0
100%	73.4	90.5

© 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 35 liters (9.25 gal.) Low level 28 liters (7.40 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 42 liters (11.1 gal.)
(engine only)
- Pressure system Max. 0.9 kg/cm² (12.8 psi)
- Water pump Centrifugal type driven by belt
- Water pump Capacity 700 liters (184.9 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 580 liters/min @1,500 rpm
- Heat rejection to coolant 70.7 kcal/sec @1,500 rpm
- Heat rejection to CAC 4.3 kcal/sec @1,500 rpm
- Air flow 23.9 m³/min @1,500 rpm
- Exhaust gas flow 38.8 m³/min @1,500 rpm
- Exhaust gas temp. 520 °C @1,500 rpm

- Water flow 700 liters/min @1,800 rpm
- Heat rejection to coolant 87.3 kcal/sec @1,800 rpm
- Heat rejection to CAC 6.8 kcal/sec @1,800 rpm
- Air flow 29.4 m³/min @1,800 rpm
- Exhaust gas flow 47.9 m³/min @1,800 rpm
- Exhaust gas temp. 530 °C @1,800 rpm

- Max. permissible restrictions
 - Intake system 220 mmH₂O initial
635 mmH₂O final
 - Exhaust system 800 mmH₂O max.

◆ CONVERSION TABLE

- in. = mm x 0.0394
- PS = kW x 1.3596
- psi = kg/cm² x 14.2233
- in³ = lit. x 61.02
- hp = PS x 0.98635
- lb = kg x 2.20462
- Kg/hr = Nm³/hr x 0.732 (natural gas)
- Btu/ft³ = MJ/m³ x 26.8392 (natural gas)
- lb/ft = N.m x 0.737
- U.S. gal = lit. x 0.264
- kW = 0.2388 kcal/s
- lb/PS.h = g/kW.h x 0.00162
- cfm = m³/min x 35.336
- Nm³ = SCF x 0.0283