MITSUBISHI DIESEL ENGINE TECHNICAL INFORMATION	ITEM NO.	T0218-0001E Rev.3 (1/4)
	DATE	July, 2007

Specification Sheets of S12R-F1PTAW2 Engine

Specification Sheets of S12R-F1PTAW2 Engine are enclosed herein.

Revision				
	First Edition : July, 2007	Engine Engineering Department Large Engine Design Section		
	Rev.1 : Sep., 2008			
	Rev.2 : July, 2009	Approved by	Checked by	Drawn by
	Rev.3 : Sept., 2009	T.HASHIGUCHI		T.H.

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Inter Cooler (Fresh water to Cooler)	
Cylinder Arragement	60°V	
No.of Cylinders	12	
Bore mm(in.)	170	(6.69)
Stroke mm(in.)	180	(7.09)
Displacement liter(in^3)	49.03	(2992)
Compression Ratio	14.5:1	
Dry Weight - Engine only - kg(lb)	5270	(11620)
Wet Weight - Engine only - kg(lb)	5555	(12249)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	2100	
Moment of inertia of Rotating Components - kgf·m^2(lbf·ft^2) (Includes Std.Flywheel)	75.3	(1787.2)
Cyclic Speed Variation with Flywheel at 1500rpm	1/320	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf·m(lbf·ft)	450	(3255.6)

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H_2O (in.H_2O)	400	(15.7)
With Dirty Filter Element - mm H_2O (in.H_2O)	635	(25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H_2O (in.H_2O)	600	(23.6)

LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm^2(psi)	2~3	(29~43)
at Rate Speed - kgf/cm^2(psi)	5~6.5	(71~93)
Maximum Oil Temperature - °C(°F)	110	230
Oil Capacity of Standard Pan High - liter (U.S.gal)	150	(40)
Low - liter (U.S.gal)	108	(28.5)
Total System Capacity (Includes Oil Filter) - liter (U.S.gal)	180	(47.6)
Maximum Angle of Installation (Std. Pan) Front Down	6.5°	
(Engine Only) Front Up	6.5°	
Side to Side	22.5°	

COOLING SYSTEM

Coolant Capacity of Jacket (Engine only) - liter (U.S.gal)	116	(30.6)
Coolant Capacity of Air cooler (Engine only) - liter (U.S.gal)	14	(3.7)
Maximum External Friction Head at Engine Outlet - kgf/cm^2(psi) (For Jacket and Air Cooler)	0.35	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft)	10	(32.8)
Standard Thermostat (modulating)Range of Jacket - °C(°F)	71~85	(160~185)
Standard Thermostat (modulating)Range of Air Cooler - °C(°F)	42~55	(108~131)
Maximum Coolant Temperature at Engine Outlet of Jacket - °C(°F)	98	(208)
Minimum Coolant Expansion Space - % of System Capacity (For Jacket and Air Cooler)	10	(0.4)
Maximum Coolant Temperature at Intercooler Inlet, PTAW type - °C(°F)	45	(113)
Maximum Air Restriction on Discharge Side of Radiator and Fan - mm H_2O(in.H_2O)	10	(0.4)

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FUEL SYSTEM

Fuel Injector	Mitsubishi PS6 Type × 2	
Maximum Suction Head of Feed Pump - mm Hg (in. Hg)	75	(3.0)
Maximum Static Head of Return Pipe - mm Hg (in.Hg)	150	(5.9)

STARTING SYSTEM

Battery Charging Alternator - V- Ah	24-30
Starting Motor Capacity - V - kW	24-7.5 × 2
Maximum Allowable Resistance of Cranking Circuit - m Ω	1.5
Recommended Minimum Battery Capacity	
At 5°C (41°F) and above - Ah	300
Below 5°C (41°F) through - 5°C (23°F)	600

Emission Level 100% Load (at STAND-BY POWER)

Values in mg/Nm3, O2 content 5%

Nox : 2000mg/Nm3

CO : 650mg/Nm3

HC : 150mg/Nm3

PM : 50mg/Nm3

Control method of emission level shall be compliant with EPA regulation.

Test Condition

f	0.98＜f＜1.02	f: Engine specific parameter considering atmospheric condition which determined according to the following provisions. (See CODE OF FEDERAL REGULATIONS 40 CRF ch.1)
		$f = (99/Ps)^{0.7} (Ta/289)^{1.5}$
		Ps: Dry Atmospheric pressure(kPa)
		Ta:Absolute temperature of the intake air(k)
Fuel	JIS K-2204 Type2	

S12R-F1PTAW2 SPECIFICATION SHEET

ENGINE RATING

All data represent net performance with standard accessories such as air cleaner, inlet /exhaust manifolds, fuel oil system, L.O. pump, etc. under the condition of 100kPa(29.6inHg) barometric pressure, 77°F(25°C) ambient temperature and 30% relative humidity.

ITEM	UNIT	STAND-BY POWER	PRIME POWER		
		50Hz	50Hz		
Engine Speed	rpm	1500	1500		
No. of Cylinders		12			
Bore	mm (in.)	170 (6.69)			
Stroke	mm (in.)	180 (7.09)			
Displacement	liter ($in.^3$)	49.03 (2992)			
Brake Horse power without Fan	HP (kW)	1960 (1462)	1782 (1329)		
Brake Mean Effective Pressure without Fan	kgf/cm^2 (psi)	24.3 (346)	22.1 (314)		
Mean Piston Speed	m/s (ft/min)	9.0 (1772)	9.0 (1772)		
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	141 (105)	141 (105)		
Intake Air flow	m^3/min (CFM)	131 (4626)	117 (4131)		
Exhaust Gas Flow	m^3/min (CFM)	346 (12217)	308 (10875)		
Coolant Flow	liter/min (U.S. GPM)	1650 (436)	1650 (436)		
Coolant Flow to Intercooler (Max.Flow 320L/min)	liter/min (U.S. GPM)	220 (58)	220 (58)		
Cooling Air Flow (Std. Fan)	m^3/min (CFM)	—	—		
Allowable Fan Loss Horse Power	HP (kW)	40 (30)	40 (30)		
Radiated Heat to Ambient	kcal/hr (BTU/min)	98350 (6505)	87767 (5805)		
Heat Rejection to Coolant	kcal/hr (BTU/min)	426183 (28187)	380326 (25154)		
Heat Rejection to Air Cooler (PTAW Version)	kcal/hr (BTU/min)	360616 (23851)	321814 (21284)		
Heat Rejection to Exhaust	kcal/hr (BTU/min)	1136108 (75141)	992959 (65673)		
Noise Level (1 m height & distance) (excludes, Intake,Exhaust & Fan)	dB(A)	107	107		

The specifications are subject to change without notice.

APPLICATION : GENERATOR

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