MITSUBISHI DIESEL ENGINE TECHNICAL INFORMATION	ITEM NO.	T0221-0003E Rev.1 (1/4)
	DATE	July, 2013

Specification Sheets of S16R2-F1PTAW Engine

Specification Sheets of S16R2-F1PTAW Engine are enclosed herein.

Revision				
	First Edition : January, 2011	Engine Engineering Department Engine System Designing Section		
	Rev.1 : July, 2013			
		Approved by	Checked by	Drawn by
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GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Aircooler (Fresh Water)	
Cylinder Arragement	60°V	
No.of Cylinders	16	
Bore mm(in.)	170	(6.69)
Stroke mm(in.)	220	(8.66)
Displacement liter(in^3)	79.90	(4876)
Compression Ratio	14.0:1	
Dry Weight - Engine only - kg(lb)	7750	(17089)
Wet Weight - Engine only - kg(lb)	8200	(18081)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load		
Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	1750	
Moment of inertia of Rotating Components - kgf·m^2(lbf·ft^2)	32.92	(781)
(Includes Std.Flywheel)		
Cyclic Speed Variation with Flywheel at 1500rpm	1/210	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf·m(lbf·ft)	450	(3256)

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 ldle - kgf/cm^2(psi)	2～3	(29～43)
at Rate Speed - kgf/cm^2(psi)	4.5～6	(64～86)
Maximum Oil Temperature of Oil Pan - °C(°F)	105	(221)
Oil Capacity of Standard Oil Pan High - liter (U.S.gal)	260	(68.7)
Low - liter (U.S.gal)	200	(52.8)
Total System Capacity (lncludes Oil Filter) - liter (U.S.gal)	290	(76.6)
Maximum Angle of lnstallation (Std. Pan) Front Down	6°	
(Engine Only) Front Up	6°	
Side to Side	25°	

COOLING SYSTEM

Coolant Capactiy of Jacket (Engine Only) - liter (U.S.gal)	157	(41.5)
Coolant Capactiy of Air Cooler (Engine Only) - liter (U.S.gal)	33	(8.7)
Maximum External Friction Head at Engine Outlet - kgf/cm^2(psi)	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 Inlet- °C(°F)	77	(171)
Maximum Coolant Temperature at Engine Outlet- °C(°F)	86	(187)
Minimum Coolant Expansion Space - % of System Capacity	10	
Max. Coolant Temp. at Air cooler Inlet, PTAW type- °C(°F) (When air temp. 25°C)	45	(113)

* Be certainly satisfied with any conditions of "Maximum Coolant Temperature at Engine Inlet at 77°C(171°F)".

The specifications are subject to change without notice.

APPLICATION : GENERATOR

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FUEL SYSTEM

Fuel Injector	Mitsubishi PS8 Type × 2	
Maximum Suction Head of Feed Pump - mm Hg (in. Hg)	75	(3.0)
Maximum Static Head of Return & Leak Pipe - mm Hg (in.Hg)	150	(5.9)

STARTING SYSTEM

Battery Charging Alternator - V-Ah	24-35
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	400
Below 5°C(41°F) through - 5°C(23°F)	600

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

Values in mg/Nm^3, O_2 content 5%

NOx : $2000mg/Nm^3$

CO : $650mg/Nm^3$

HC : $150mg/Nm^3$

PM : $50mg/Nm^3$

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

Test Condition

fa	$0.96 \leqq fa \leqq 1.06$	fa: Engine specific parameter considering atmospheric condition which determined according to the following provisions. (See EUROMOT 2004 - EC 1997 68 Consolidated - Annex Ⅲ)
		$fa = (99/Ps)^{0.7} (Ta/298)^{1.5}$
		Ps: Dry Atmospheric pressure(kPa)
		Ta:Absolute temperature of the intake air(K)
Fuel	JIS K-2204 Type2	
Tfi	$33℃ \leqq Tfi \leqq 43℃$	Tfi: The fuel temperature at the injection pump inlet.

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		16			
Bore	mm (in.)	170 (6.69)			
Stroke	mm (in.)	220 (8.66)			
Displacement	liter ($in.^3$)	79.9 (4876)			
Brake Horse power without Fan	HP (kW)	2905 (2167)	2627 (1960)		
Brake Mean Effective Pressure without Fan	kgf/cm^2 (MPa) (psi)	22.1 (2.17) (314)	20.0 (1.96) (284)		
Mean Piston Speed	m/s (ft/min)	11.0 (2165)	11.0 (2165)		
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	204 (152)	204 (152)		
Intake Air flow	m^3/min (CFM)	194 (6850)	173 (6109)		
Exhaust Gas Flow	m^3/min (CFM)	514 (18149)	457 (16137)		
Coolant Flow	liter/min (U.S. GPM)	1650 (436)	1650 (436)		
Coolant Flow to Aircooler (PTAW only)	liter/min (U.S. GPM)	920 (243)	920 (243)		
Allowable Fan Loss Horse Power	HP (kW)	82 (61)	82 (61)		
Radiated Heat to Ambient	kcal/hr (kJ/hr) (BTU/min)	147306 (616629) (9743)	130855 (547765) (8655)		
Heat Rejection to Coolant	kcal/hr (kJ/hr) (BTU/min)	687426 (2877596) (45465)	610658 (2556242) (40388)		
Heat Rejection to Air Cooler	kcal/hr (kJ/hr) (BTU/min)	564672 (2363742) (37347)	501612 (2099770) (33176)		
Heat Rejection to Exhaust	kcal/hr (kJ/hr) (BTU/min)	1647531 (6896638) (108966)	1433449 (6000481) (94806)		
Noise Level (1 m height & distance) (excludes, Intake,Exhaust & Fan)	dB(A)	TBD	TBD		