



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0221-0002E Rev.3 (1/4)

DATE

March, 2013

Specification Sheets of S16R2-PTAW Engine

Specification Sheets of S16R2-PTAW Engine are enclosed herein.

Revision	First Edition : January, 2011	Engine Engineering Department Engine System Designing Section		
	Rev.1 : February, 2012			
	Rev.2 : May, 2012	Approved by	Checked by	Drawn by
	Rev.3 : March, 2013	T.HASHIGUCHI	T.OGURA	K.N.



**MITSUBISHI HEAVY INDUSTRIES, LTD.
GENERAL MACHINERY & SPECIAL VEHICLE**

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled
Aspiration	Turbo-Charged, Aircooler (Fresh Water)
Cylinder Arrangement	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) (Includes Std. Flywheel)	32.92 (781)
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)
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AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)

With Clean Filter Element - mm H ₂ O (in. H ₂ O)	400 (15.7)
With Dirty Filter Element - mm H ₂ O (in. H ₂ O)	635 (25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H ₂ O (in. H ₂ O)	600 (23.6)
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LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm ² (psi)	2~3 (29~43)
at Rate Speed - kgf/cm ² (psi)	4~6 (57~86)
Maximum Oil Temperature - °C(°F)	110 (230)
Oil Capacity of Standard Pan High - liter (U.S. gal)	260 (68.7)
Low - liter (U.S. gal)	200 (52.8)
Total System Capacity (Includes Oil Filter) - liter (U.S. gal)	290 (76.6)
Maximum External Friction Head at External Oil Cooler - kgf/cm ² (psi)	0.82 (11.7)
Maximum Angle of Installation (Std. Pan) Front Down	6°
(Engine Only) Front Up	6°
Side to Side	25°

COOLING SYSTEM

Coolant Capacity of Jacket (Engine Only) - liter (U.S. gal)	157 (41.5)
Coolant Capacity 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 Outlet- °C(°F)	98 (208)
Minimum Coolant Expansion Space - % of System Capacity	10
Maximum Coolant Temperature at Air cooler Inlet, PTAW type- °C(°F) (at ambient 40°C)	65 (149)

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

The specifications are subject to change without notice.

APPLICATION : GENERATOR

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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	CONTINUOUS C	CONTINUOUS D
		50Hz	50Hz	50Hz	50Hz
Engine Speed	rpm	1500	1500	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)	2252 (1680)	2001 (1493)
Brake Mean Effective Pressure	kgf/cm ² (MPa)	22.1 (2.17)	20.0 (1.96)	17.1 (1.68)	15.2 (1.49)
without Fan	(psi)	(314)	(284)	(243)	(216)
Mean Piston Speed	m/s (ft/min)	11.0 (2165)	11.0 (2165)	11.0 (2165)	11.0 (2165)
Maximum Regenerative Power	HP	204	204	204	204
Absorption Capacity without Fan	(kW)	(152)	(152)	(152)	(152)
Intake Air flow	m ³ /min (CFM)	188 (6638)	168 (5932)	141 (4979)	125 (4414)
Exhaust Gas Flow	m ³ /min (CFM)	498 (17584)	445 (15713)	372 (13135)	331 (11688)
Coolant Flow	liter/min (U.S. GPM)	1650 (436)	1650 (436)	1650 (436)	1650 (436)
Coolant Flow to Aircooler (PTAW only)	liter/min (U.S. GPM)	920 (243)	920 (243)	920 (243)	920 (243)
Oil Flow to External Oil Cooler	liter/min (U.S. GPM)	70 (18)	70 (18)	70 (18)	70 (18)
Allowable Fan Loss Horse Power	HP (kW)	82 (61)	82 (61)	82 (61)	82 (61)
Radiated Heat to Ambient	kcal/hr (kJ/hr) (BTU/min)	142702 (597357) (9438)	127286 (532825) (8419)	106554 (446040) (7047)	94693 (396389) (6263)
Heat Rejection to Coolant	kcal/hr (kJ/hr) (BTU/min)	647619 (2710962) (42833)	575086 (2407334) (38035)	479491 (2007171) (31713)	426119 (1783753) (28183)
Heat Rejection to Air Cooler	kcal/hr (kJ/hr) (BTU/min)	479718 (2008121) (31728)	425990 (1783211) (28174)	355179 (1486795) (23491)	315644 (1321300) (20876)
Heat Rejection to External Oil Cooler (external oil cooler, mounted on radiator)	kcal/hr (kJ/hr) (BTU/min)	71957 (301215) (4759)	63898 (267479) (4226)	53277 (223020) (3524)	47347 (198197) (3131)
Heat Rejection to Exhaust	kcal/hr (kJ/hr) (BTU/min)	1561603 (6536940) (103282)	1369607 (5733236) (90584)	1112770 (4658105) (73597)	988908 (4139613) (65405)
Noise Level (1 m height & distance) (excludes, Intake, Exhaust & Fan)	dB(A)	TBD	TBD	TBD	TBD

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APPLICATION : GENERATOR