MITSUBISHI DIESEL ENGINE TECHNICAL INFORMATION	ITEM NO.	T0215-0004C (1/4)
	DATE	August, 2013

Specification Sheets of S12R-PTA2-C Engine

Specification Sheets of S12R-PTA2-C Engine are enclosed herein.

Revision		Engine Engineering Department High Speed Engine Designing Section		
		Approved by	Checked by	Drawn by
		K.FUKUZAWA	S.MORI K.SAKAMOTO	N.YAMAGUCHI

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

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, After Cooled (Jacket water to Cooler)	
Cylinder Arrangement	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	13.5:1	
Dry Weight - Engine only - kg(lb)	5400	(11907)
Wet Weight - Engine only - kg(lb)	5680	(12524)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load		
Hydraulic (std.) or Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	2100	
Moment of inertia of Rotating Components - N･m^2($lbf･ft^2$) (Includes Std.Flywheel)	738	(1787)
Cyclic Speed Variation with Flywheel a 1500rpm	1/294	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - N･m(lbf･ft)	4413	(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 Idle - MPa(psi)	0.2～0.3	(29～43)
at Rate Speed - MPa(psi)	0.49～0.64	(71～93)
Maximum Oil Temperature - °C(°F)	110	(230)
Oil Capacity of Standard Pan High - liter (U.S.gal)	150	(39.6)
Low - liter (U.S.gal)	110	(29.1)
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 Capactiy (Engine only) - liter (U.S.gal	125	(33.0)
Maximum External Friction Head at Engine Outlet - MPa(psi)	0.034	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft)	10	(32.8)
Maximum Outlet Pressure of Engine Water Pump - MPa(psi)	0.20	(28.6)
Standard Thermostat (modulating)Range-°C(°F)	71～85	(160～185)
Maximum Coolant Temperature at Engine Outlet-°C(°F)	98	(208)
Minimum Coolant Expansion Space - % of System Capacity	10	
Maximum Coolant Temperature at Intercooler Inlet, TK type-°C(°F)		
Maximum Air Restriction on Discharge Side of Radiator and Fan-mm H_2O(in.H_2O)	10	(0.4)

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 & Leak 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 - mΩ	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

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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		
			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	kW (HP)		1285 (1722)			1165 (1561)	
Brake Horse power without Fan	kW (HP)		1315 (1762)			1195 (1601)	
Brake Mean Effective Pressure with Fan	MPa (psi)						
Brake Mean Effective Pressure without Fan	MPa (psi)		2.1 (311)			2.0 (283)	
Mean Piston Speed	m/s (ft/min)		9.0 (1772)			9.0 (1772)	
Fuel Consumption	g/kWh (g/HPh)		197 (147)			197 (147)	
Maximum Regenerative Power Absorption Capacity without Fan	kW (HP)		105 (141)			105 (141)	
Intake Air flow	m^3/min (CFM)		105 (3708)			96 (3390)	
Exhaust Gas Flow	m^3/min (CFM)		279 (9851)			253 (8933)	
Coolant Flow	liter/min (U.S. GPM)		1650 (436)			1650 (436)	
Coolant Flow to Intercooler (TK only)	liter/min (U.S. GPM)						
Cooling Air Flow (Std. Fan)	m^3/min (CFM)		1800 (63558)			1800 (63558)	
Fan Loss Horse Power (Std. Fan)	kW (HP)		30 (40)			30 (40)	
Radiated Heat to Ambient	kJ/hr (BTU/min)		331962 (5245)			301647 (4766)	
Heat Rejection to Coolant	kJ/hr (BTU/min)		2766397 (43708)			2513735 (39717)	
Heat Rejection to Inter Cooler (TK Version)	kJ/hr (BTU/min)						
Heat Rejection to Exhaust	kJ/hr (BTU/min)		3233396 (51088)			2938116 (46422)	
Noise Level (1 m height & distance) (excludes, lntake,Exhaust & Fan)	dB(A)		TBD			TBD	