MITSUBISHI DIESEL ENGINE	Item no.	M0209-0012E
	Date	April 2013

Specification sheet of S6R2-T2MPTK marine diesel engine

Specification sheet of:
- S6R2-T2MPTK (in compliance with IMO MARPOL 73/78, Annex VI, Regulation 13, Tier 2)

Revision					
	0	First edition: March 2012	Technology Department Engine Division		
	1	April 2013			
			Approved by	Checked by	Drawn by
			M. Vermeulen		

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled		
Aspiration	Turbo-Charged, Inter Cooler (Raw water to Cooler)		
Cylinder Arrangement	Inline		
No.of Cylinders	6		
Bore mm(in.)	170	(6.69)	
Stroke mm(in.)	220	(8.66)	
Displacement Liter($in.^3$)	29.96	(1828)	
Compression Ratio	14.0 : 1		
Dry Weight - Engine only - kg(lb)	2960	(6527)	
Wet Weight - Engine only - kg(lb)	3150	(6946)	

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load(Generator Use)			
Hydraulic (std.) or Electric Governor - %	±0.25 or better		
Idling Speed -rpm	600～650		
Maximum Overspeed Capacity - rpm	1750		
Moment of Inertia of Rotating Components J - kg・m^2(lbf・ft^2) (Includes 18 inch Flywheel)	11.96	(1135)	
Cyclic Speed Variation with Flywheel at 1500rpm	1/116		
Cyclic Speed Variation with Flywheel at 1200rpm	1/76		

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - N・m (lbf・ft)	1961	(1447)	

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)- kPa (in. H_2O)	3.92	(15.7)	
Maximum Allowable Intake Air Temperature- ^oC (^oF)	45	(113)	

EXHAUST SYSTEM

Maximum Allowable Back Pressure - kPa (in. H_2O)	4.41	(17.7)	

LUBRICATION SYSTEM

Oil Pressur at Idle - MPa (psi)	0.2～0.3	(29～43)	
Oil Pressur at Rate Speed - MPa (psi)	0.5～0.64	(71～93)	
Maximum Oil Temperature- ^oC (^oF)	110	(230)	
Lub Oil Standard Thermostat (Modulating) Range- ^oC (^oF)	82～95	(180～203)	
Oil Capacity of Marine Pan High - liter (U.S.gal)	140	(37.0)	
Oil Capacity of Marine Pan Low - liter (U.S.gal)	110	(29.1)	
Total System Capacity (Includes Oil Filter) - liter (U.S.gal)	160	(42.3)	
Maximum Installation Angle Front Up	8^o		
Maximum Installation Angle Front Down	8^o		
Maximum Instantaneous Operating Angle (Engine Level) Front Up	25^o		
Maximum Instantaneous Operating Angle (Engine Level) Front Down	15^o		
Maximum Instantaneous Operating Angle (Engine Level) Side to Side	22.5^o		

COOLING SYSTEM

Jacket water system

Cooling system: Closed fresh water type High Temperature (HT) system with treated water/glycol mixture

Coolant Capacity of Jacket Water System (Engine only) - liter (U.S.gal)	55	(14.5)	
Maximum External Friction Head at Engine Outlet-MPa(psi)	0.034	(5.0)	
Jacket Water Standard Thermostat (Modulating) Range- ^oC (^oF)	71～85	(160～185)	
Maximum Allowable Coolant Temperature at Engine Outlet- ^oC (^oF)	95	(203)	
Recommended Coolant Temperature at Engine outlet- ^oC (^oF)	80	(176)	

Charge air cooler cooling system

Cooling system: Direct sea water or Closed fresh water type Low Temperature (LT) system with treated water/glycol mixture

Coolant Capacity of Charge Air Cooler (Engine only) - liter (U.S.gal)	7	(1.8)	
Maximum External Friction Head at Intercooler Outlet-MPa(psi)	0.035	(5.1)	
Maximum Coolant Temperature at Intercooler Inlet	see page 4/4		
Minimum Coolant Expansion Space -% of System Capacity	10		
Recommended Static Head of Coolant above Crankshaft Center - m(ft) MAX.	10	(32.8)	
Recommended Static Head of Coolant above Crankshaft Center - m(ft) MIN.	7	(23.0)	

FUEL SYSTEM			
Fuel Injection Pump		Mitsubishi PS6 Type x 1	
Maximum Suction Head of Feed Pump - kPa (in. Hg)		14.7	(4.3)
Maximum Level of Fuel Tank - m	Continuous Use	5.0	
	Stand-by Use	2.0	
Minimum Fuel Oil Supply Pipe Inner Diameter - mm(in.)		16	(0.63)
Minimum Fuel Oil Leak Pipe Inner Diameter - mm(in.)		16	(0.63)
STARTING SYSTEM			
Battery Charging Alternator - V-Ah		24-35	
Starting Motor Capacity - V -kW		24-7.5	
Maximum Allowable Resistance of Cranking Circuit - m Ω		2.5	
Recommended Minimum Battery Capacity			
At 5°C (41°F) and above - Ah		200	
Below 5°C (41°F) through -5°C (23°F)		500	
Cranking Ampere of Starter at 5°C (41°F) / -5°C (23°F)			
Static Ampere -A		370 / 500	
Momentary Ampere -A		700 / 960	

ACCESSORY EQUIPMENT	
Air Cleaner	Silencer Type
Exhaust Manifold	Water Cooled
Turbocharger	Air cooled
Air Cooler	Raw Water Cooled
Breather	Conduction Type
Governor	Hydraulic PSG Type or electronic (optional)
Fuel Injection Pump	
Fuel Feed Pump	
Fuel Injection Pipe	Double walled Type
Fuel Injection Nozzle	
Fuel Filter	Paper Element Type
Lubricating Oil Pump	
Lubricating Oil Cooler	
Lubricating Oil Filter(Full-Flow)	Paper Element Type
Lubricating Oil Filter(By-Pass Flow)	Paper Element Type
Oil Pan	Large Capacity,steel
Lubricating Oil Thermostat	
Cooling Water Pump (HT)	
Cooling Water Thermostat (HT)	
Starter	Earth Floated Type
Alternator	Earth Floated Type
Stop Solenoid	DC24V-15A
Engine Support	Marine Type
Accessory Drive	Front Drive Pulley

ENGINE RATING[1]

All data represent net performance according to ISO 3046 with standard accessories such as fuel injection pump, water pump, L.O. pump and charging alternator under the condition of 100 kPa (750 mmHg) barometric pressure, 298 ºK (25 °C) ambient temperature and 30% relative humidity

ITEM		UNIT	propulsion use			auxiliary generator	
Engine Model			-T2MPTK-3			-T2MPTK-5	-T2MPTK-9
Rating			Heavy Duty			50 Hz	60 Hz
Rated engine speed		rpm	1350			1500	1200
Emisson Regulation (Test cycle)		IMO Tier 2	E2 (CPP) / E3 (FPP)			D2	D2
No. of Cylinders			6				
Bore		mm (in.)	170 (6.69)				
Stroke		mm (in.)	220 (8.66)				
Displacement		liter ($in.^3$)	29.96 (1828.27)				
Rated output[1]		kW (HP)	480 (643)			640 (858)	500 (670)
Brake Mean Effective Pressure		MPa (psi)	1.42 (206)			1.71 (248)	1.67 (242)
Mean Piston Speed		m/s (ft/min)	9.9 (1949)			11.0 (2166)	8.8 (1732)
Maximum Regenerative Power Absorption Capacity		kW (HP)	52 (70)			60 (80)	44 (59)
Intake Air Flow		m3/min (CFM)	43 (1518)			57 (2012)	43 (1518)
Exhaust Gas Flow		m3/min (CFM)	113 (3990)			152 (5367)	113 (3990)
Coolant Flow		liter/min (U.S. GPM)	730 (193)			820 (217)	650 (172)
Coolant(Jacket water) Pressure (water pump outlet)		MPa (psi)	0.14 (21)			0.17 (25)	0.11 (16)
Minimum Coolant Flow to Inter Cooler (Max. Flow: 469L/min)		liter/min (U.S. GPM)	150 (40)			150 (40)	150 (40)
Oil Flow		liter/min (U.S. GPM)	260 (69)			290 (77)	230 (61)
Radiated Heat to Ambient		kJ/hr (BTU/min)	89444 (1413)	89866 (1420)		120478 (1903)	90123 (1424)
Heat Rejection to Coolant (include water cooled manifold)		kJ/hr (BTU/min)	1073331 (16956)	1078394 (17036)		1445732 (22839)	1081472 (17085)
Heat Rejection to Inter Cooler (PTK Version)		kJ/hr (BTU/min)	402499 (6359)	404398 (6389)		542149 (8565)	405552 (6407)
Heat Rejection to Exhaust		kJ/hr (BTU/min)	1180455 (18649)	1194167 (18865)		1611758 (25462)	1130009 (17852)
Cooling system	Direct Sea Water Cooling Max. sea water temp. at intercooler inlet	°C	Max. 32°C				
	Intermediate Fresh Water Cooling Max. fresh water temp. at intercooler inlet	°C	Max. 38°C (When sea water temp. 32°C)				
	Radiator Cooling Max. coolant temp. at intercooler inlet	°C	N/A			Max. 45°C (When Air Temp. 25°C)	
Noise Level (1 m height & distance) (excludes, Intake,Exhaust)		dB(A)	-		-	-	-
Maximum No Load Governed Speed		rpm	1451		1451	1575	1260

[1] the rated output is available up to IACS ambient reference conditions without derating