GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Inter Cooler (Raw water to Cooler)	
Cylinder Arrangemen	60°V	
No.of Cylinders	12	
Bore mm(in.	150	(5.91)
Stroke mm(in.)	160	(6.30)
Displacement Liter(in^3)	33.93	(2071)
Compression Ratio	14.5 : 1	
Dry Weight - Engine only - kg(lb	3720	(8203)
Wet Weight - Engine only - kg(lb	3946	(8701)

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	2400	
Moment of Inertia of Rotating Components J- k・m^2(lbf・ft^2) (Includes 18 inch Flywheel	10.65	(1011)
Cyclic Speed Variation with Flywheel a 1800rpm	1/552	
1500rpm	1/373	

ENGINE MOUNTING

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

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)- kPa (in. $_2$O)	3.92	(15.7)
Maximum Allowable Intake Air Temperature-°C (°F)	45	(113)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - kPa (in.H$_2$O)	4.41	(17.7)

LUBRICATION SYSTEM

Oil Pressure at ldle - MPa (psi)	0.2 ~ 0.3	(29 ~ 43)
at Rate Speed - MPa (psi)	0.5 ~ 0.6	(71 ~ 86)
Maximum Oil Temperature-°C (°F)	110	(230)
Oil Capacity of Marine Pan High - liter (U.S.gal)	120	(31.7)
Low - liter (U.S.gal)	92	(24.3)
Total System Capacity (lncludes Oil Filter) - liter (U.S.gal	140	(37.0)
Maximum lnstallation Angle Front Up	11°	
Front Down	9.5°	
Maximum Instantaneous Operating Angle (Engine Level Front Up	45°	
Front Down	24°	
Side to Side	22.5°	

COOLING SYSTEM

Coolant Capacity - liter (U.S.gal) (Engine only	100	(26.4)
Maximum External Friction Head at Engine Outlet-MPa(psi	0.034	(5.0)
Recommended Static Head of Coolant above Crankshaft Center - m(f MAX.	10	(32.8)
MIN.	7	(23.0)
Standard Thermostat (Modulating)Range-°C (°F)	71 ~ 85	(160 ~ 185)
Maximum Coolant Temperature at Engine Outlet-°C (°F)	95	(203)
Recommended Coolant Temperature at Engine outle °C (°F)	80	(176)
Minimum Coolant Expansion Space-% of System Capacit	10	
Maximum Coolant Temperature at Inter Cooler lnlet, TK type °C (°F)	32	(90)

FUEL SYSTEM

Fuel Injection Pump		Bosch P Type x 2	
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		20	(0.79)
Minimum Fuel Oil Leak Pipe Inner Diameter - mm(in		20	(0.79)

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	1.5
Recommended Minimum Battery Capacit	
At 5ºC (41ºF) and above - Ah	300
Below 5ºC (41ºF) through -5ºC (23ºF)	500
Cranking Ampere of Starter at 5ºC (41ºF) / -5ºC (23ºF)	
Static Ampere -A	380 × 2 / 480 × 2
Momentary Ampere -A	680 × 2 / 900 × 2

ACCESSORY EQUIPMENT

Air Cleaner	Silencer Type
Exhaust Manifold	Air Cooled
Turbocharger	Air Cooled
Air Cooler	Raw Water Cooled
Breather	Conduction Type
Governor	Hydraulic PSG Type
Fuel Injection Pump	
Fuel Feed Pump	
Fuel Injection Pipe	Standard Type
Fuel Injection Nozzl	
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
Cooling Water Pump	
Cooling Water Thermosta	
Starter	Earth Float Type
Alternator	Earth Float Type
Stop Solenoid	DC24V-15A
Engine Support	Marine Type
Accessory Drive	Front Drive Pulley

ACCESSORY EQUIPMENT(LOOSE SUPPLY)

Relay Safety	For Starter
Jack Bolt	
Companion Flange	
Standard Tools	
Standard Spare Parts	

IMO

MITSUBISHI

S12A2-MPTK SPECIFICATION SHEET DIESEL ENGINES

ENGINE RATING

All data represent net performance according to ISO3046 with standard accessories such as fuel injection pump, water pump L.O. pump and charging alternator under the condition of 100kPa(750 mm Hg),barometric pressure 298K(25ºC) ambient temperature and 30% relative humidity.

A:Light duty B:Medium duty C:Heavy duty

ITEM	UNIT	Propulsion use			Generator use		
		A	B	C	60Hz	50Hz	
Engine Speed	rpm	2100	2000	1940	1800	1500	
No. of Cylinders		12					
Bore	mm	150					
	(in.)	(5.91)					
Stroke	mm	160					
	(in.)	(6.30)					
Displacement	liter	33.93					
	($in.^3$)	(2071)					
Brake Horse Power	kW	858	776	701	828	709	
	(HP)	(1150)	(1040)	(940)	(1110)	(950)	
Brake Mean Effective Pressure	MPa	1.44	1.37	1.28	1.63	1.67	
	(psi)	(209)	(199)	(186)	(236)	(242)	
Mean Piston Speed	m/s	11.2	10.7	10.3	9.6	8.0	
	(ft/min)	(2205)	(2106)	(2028)	(1890)	(1575)	
Maximum Regenerative Power	kW	127	116	109	93	68	
Absorption Capacity	(HP)	(170)	(155)	(146)	(125)	(91)	
Intake Air Flow	m^3/min	78	71	63	72	60	
	(CFM)	(2754)	(2507)	(2225)	(2542)	(2119)	
Exhaust Gas Flow	m^3/min	208	188	167	190	158	
	(CFM)	(7344)	(6638)	(5897)	(6709)	(5579)	
Coolant Flow	liter/min	1200	1180	1160	1120	1000	
	(U.S. GPM)	(317)	(312)	(306)	(296)	(264)	
Coolant(Jacket water) Pressure	MPa	0.21	0.20	0.19	0.17	0.11	
(water pump outlet)	(psi)	(31)	(28)	(27)	(24)	(16)	
Coolant Flow to Inter Cooler	liter/min	200	200	200	200	200	
(TK only)	(U.S. GPM)	(53)	(53)	(53)	(53)	(53)	
Oil Flow	liter/min	440	410	400	370	310	
	(U.S. GPM)	(116)	(108)	(106)	(98)	(82)	
Radiated Heat to Ambient	kJ/hr	247473	223802	198670	226069	188615	
	(BTU/min)	(3910)	(3536)	(3139)	(3572)	(2980)	
Heat Rejection to Coolant	kJ/hr	1732311	1566612	1390691	1582482	1320304	
(include water cooled manifold)	(BTU/min)	(27370)	(24752)	(21973)	(25003)	(20861)	
Heat Rejection to Inter Cooler	kJ/hr	329964	298402	264893	301425	251487	
(TK Version)	(BTU/min)	(5213)	(4715)	(4185)	(4763)	(3973)	
Heat Rejection to Exhaust	kJ/hr	2851553	2578796	2244142	2445256	1975967	
	(BTU/min)	(45054)	(40745)	(35457)	(38635)	(31220)	
Noise Level (1 m height & distance)	dB(A)						
(excludes, lntake,Exhaust)							
Maximum No Load Governed Speed	rpm	2258	2150	2086	1890	1575	

The specifications are subject to change without notice.

APPLICATION : MARINE