



MITSUBISHI MEDIUM SPEED MARINE ENGINES

SU SERIES 1007 KWM TO 3580 KWM

- Robust
- Powerful propulsion
- Highly reliable
- Easy to mount and maintain



SU series, tough marine engine solutions

The SU inherits all the very best of Mitsubishi's proprietary technologies which have been developed for over half a century. Mitsubishi's reliable mechanism generates a powerful propulsion, yet compact style makes the engine easy to mount and maintain.

Robust, rigid structure and low fuel consumption ratio - key requirements for the main engine of tugboats and other heavy applications. The SU engine is built to deliver reliable service for many years and to satisfy the exacting demands of professional boat operators

High Reliability

An intermediate shelf is provided in the cylinder head to enhance rigidity and efficiently cool the combustion area. The exhaust valve is made of heat-resistant

alloys and its seat area is reinforced cobalt-based heat-resistant alloy to prevent high temperature corrosion and wear. Tufftlide treatment is applied to the cylinder liners for excellent wear resistance. The piston comprises a high strength, heat-resistant steel crown and a high strength, tough forged aluminum body. The durability of the piston at high outputs has been improved by the use of a forced cooling system. The constant temperature cooling system with thermostat gives optimum combustion.

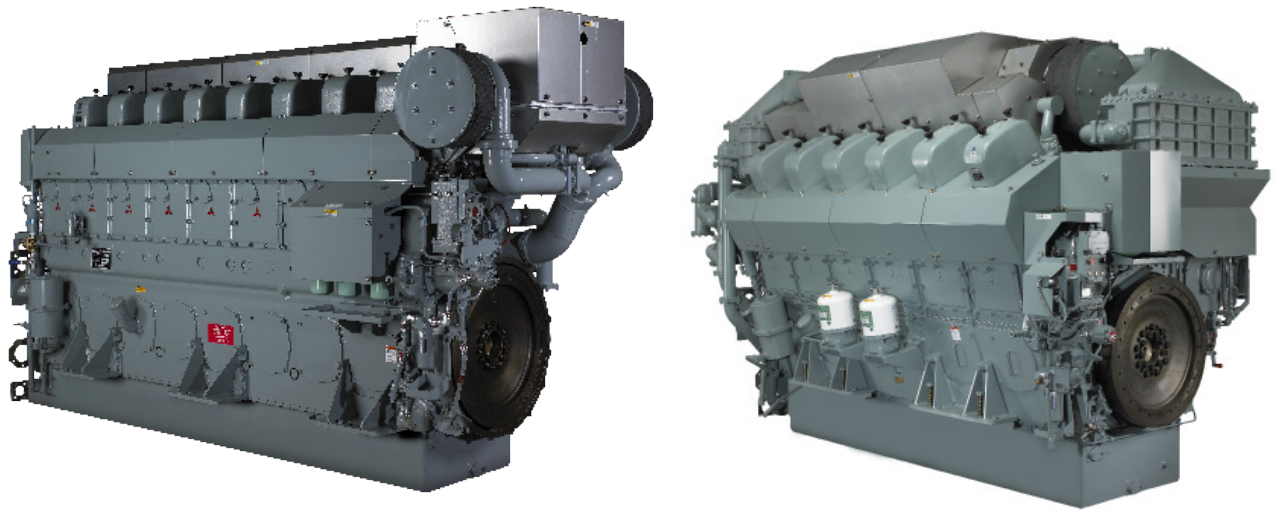
Low Fuel Consumption

Fuel consumption at rated output is around 200 g/kWhr. The high-pressure injection pump together with optimum cam profiles and injection nozzles realizes high-pressure injection of 1500 kgf/cm² and reduces the injection period to further increase combustion efficiency. NO_x emissions and smoke have been reduced by

improving the integration between the piston combustion chamber shape, compression ratio and fuel injection timing.

Easy Maintenance

All maintenance and servicing of the equipment, including the fuel injection system, is located on one side while the exhaust and cooling water pipings are installed on the other for easier access. The main bearing and cylinder head can be tightened easily and securely using an hydraulic device. A large inspection area is provided to enable assembly and disassembly of the piston and main bearing inboard. The major component parts are light enough and split into smaller components for easier handling. Rocker arms, pumps and turbochargers are forced lubricated with oil from the engine oil pan to reduce the daily



Mitsubishi Marine Engines, S8U and S12U

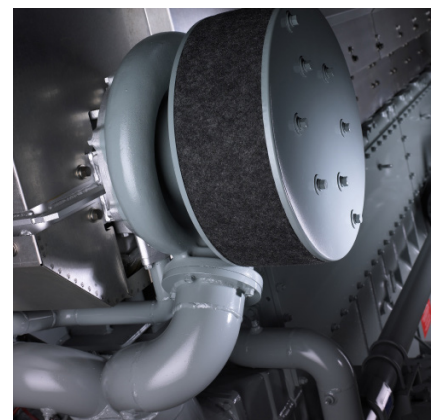
maintenance.

Space - Saving

All pumps, oil coolers and filters in the cooling water, lubrication and fuel systems are compactly installed on the engine enhancing comfort in the working area and provide an affordable space. The overlap distance between the crankshaft main journal and pins has been increased to reduce the cylinder pitch, thus reducing the overall engine length.



Cam chamber cover



Manual stop lever

SU series

Output selection list for Mitsubishi medium speed diesel engines, SU models, for marine auxiliary generator and propulsion use.

Engine Type		S6U-MPTK	S6U2-MPTK	S8U-MPTK	S12U-MPTK	S16U-MPTK
Type	4 stroke cycle, water cooled, diesel engine turbocharged with air-cooler (inter coolertype)					
Combustion type		Direct injection	Direct injection	Direct injection	Direct injection	Direct injection
Application	Engine speed (rpm)	MPTK	MPTK	MPTK	MPTK	MPTK
Generator drive, marine auxiliary use	900	1150	1250	1533	2299	2065
	1000	1270	1363	1693	2541	3388
	1200	1343	N/A	1790	2685	3580
Diesel electric continuous	900	1045	1161	1394	2090	2787
	1000	1142	1234	1522	2283	3045
	1200	1205	N/A	1608	2412	3215
Diesel electric intermittent	900	1150	1250	1533	2299	3065
	1000	1270	1363	1693	2541	3388
	1200	1343	N/A	1790	2685	3580
Propulsion use (General)	Medium Duty	960	-	1156	-	-
		1100	1119	N/A	1492	2238
	Heavy Duty	930	-	1040	-	-
		1060	1007	N/A	1343	2014
Propulsion use (Harbour tugboat)	Harbour Tug Boat rating	1150	1103	N/A	1470	2205
Fuel oil	ISO8217, DMX-class					
Engine starting	Compressed air starting					
Lubrication system	Forced lubrication by gear pump					
Cylinder arrangement		In-line type	In-line type	In-line type	V-type	V-type
Number of cylinders		6	6	8	12	16
Bore x stroke		240 x 260	240 x 300	240 x 260	240 x 260	240 x 260
Displacement ltr.		71	81	94	141	188
Compression ratio		12.7 (13.5)	12.4 (13.4)	12.7 (13.5)	12.7 (13.5)	12.7 (13.5)
Fuel injection pump	Bosch type unit pump, 1 unit per cylinder					
Fuel injection lines	Double walled, equal shaped					
Total lub. oil capacity ltr.		370	370	490	450	600
Total coolant capacity ltr.		270	270	260	520	700
Max. inclination angle, std. oil pan	front down	14°	14°	14°	14°	14°
	front up	14°	14°	14°	14°	14°
	side to side	25°	25°	25°	25°	25°
Dry weight kg		8400	8600	11000	16600	20500

Specifications other than the standard specifications mentioned above may be available on request.
Rating information: all outputs mentioned in kW, valid up to 45°C without derating. Compression ratio related to engine application.

Application

Auxiliary generator - Main power supply: average load factor is 60 - 80% of rated power. 100% of rated power is available intermittently for less than 3 h per every 12 h operation. Operating hours: 3,000 - 4,000 h per year. Overload: 110% is available for max. 25 h per year on emergency basis.

Diesel-electric propulsion - Continuous operation: Allowable load factor is less than 100% of rated power. Operating hours are unlimited per year. Overload: 110% is available for max. 25 h per year on emergency basis.

Diesel-electric propulsion - Intermittent operation: Average load factor is 60 - 80% of rated power. 100% of rated power is available intermittently for less than 3 h per every 12 h operation. Operating hours: 3,000 - 4,000 h per year. Overload: 110% is available for max. 25 h per year on emergency basis.

Propulsion - Heavy duty: Allowable load factor is less than 100% of rated power. Allowable cruising speed is less than 100% of rated speed. Operating hours are less than 8,000 h per year.

Propulsion - Medium duty: Allowable load factor is up to 83% of rated power. Allowable cruising speed is up to 94% of rated speed. 100% of rated power is available intermittently for 4 h per every 12 h operation. Operating hours are less than 3,000 h per year.

Propulsion - Light duty: Allowable load factor is up to 75% of rated power. Allowable cruising speed is up to 90% of rated speed. 100% of rated power is available intermittently for 1 h per every 6 h operation. Operating hours are less than 1,000 h per year.

Propulsion - Heavy duty tugboat: 100% of rated power is available intermittently for 8 h per every 24 h operation. Operating hours are less than 6,000 h per year. Average load factor is 60 - 80% of rated power.

All information is subject to change without prior notice.



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