



Mitsubishi medium speed Marine engines:  
SU series 1007 kWm to 3580 kWm

- Robust
- Highly Reliable
- Powerful Propulsion
- 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. Tuffslide 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.

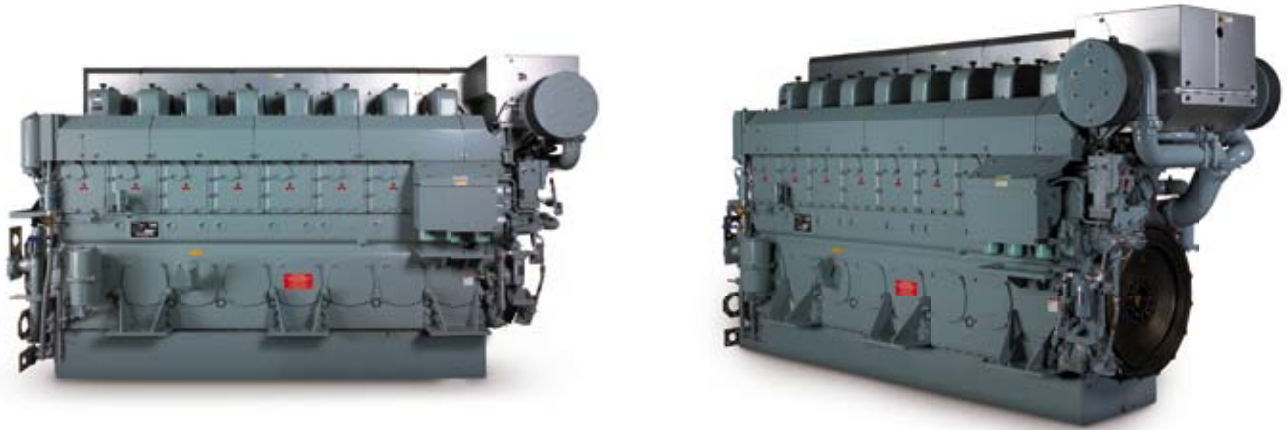
### Low Fuel Consumption

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 kg/cm<sup>2</sup> and reduces the injection period to further increase combustion efficiency. NOx 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 a 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



*Mitsubishi Marine Engines, S6U/S6U2/S8U/S12U/S16U-series*

are forced lubricated with oil from the engine oil pan to reduce the daily 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	-	-
Propulsion use (Harbour Tugboat)		1060	1007	N/A	1343	2014
	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: Continuous duty under variable load conditions; 10% overload is available for max. 1hr. per every 12 running hours.

Diesel Electric continuous: Continuous duty under variable load conditions; 10% overload is available for max. 25hrs. per year on emergency basis.

Diesel Electric intermittent: Average load factor is 60 - 80%; operating hours: 3000-4000hrs per year; 10% overload is available for max. 25hrs. per year on emergency basis.

Medium Duty: Rating is intended for variable load applications during an unlimited time of annual operating hours such as work boats, passenger vessels and ferry boats.

Heavy Duty: Rating is intended for 24hrs. running applications without load changing such as cargo vessels and fishing boats having little load cycling.

Harbour Tugboat: Rating is intended for 100% load applications and available 8hrs. out of 24hrs. such as Harbour Tugboats.

The MITSUBISHI SU type engines are 4 stroke diesel engines with direct fuel injection and 4 valves per cylinder. The combination of MITSUBISHI'S own designed turbochargers, highly efficient charge air coolers and high pressure fuel injection system, guarantees a perfect combustion, resulting in a low fuel consumption and excellent follow up characteristics on load changings. The engine block and the hanger type main bearing supports have a very rigid design, the camshaft lies high in the engine block. Wide inspection doors make inspection and maintenance of main bearings, crankshaft, camshaft and tappets very easy.

All information is subject to change without prior notice.

 **MITSUBISHI TURBOCHARGER AND ENGINE EUROPE B.V.**

**Diamond Diesels (UK) LTD**  
Unit 4, Blackburn Industrial Estate,  
Enterprise Way, Sherburn in Elmet,  
North Yorkshire, LS25 6NA

Phone: 01977 683 690  
Local: 0844 499 6373  
Fax: 01977 683 815  
Local: 0844 499 6383