

Series 538

Diesel Engines



mtu

Deutsche Aerospace

Series 538 Engines

The 538 Series encompasses 12, 16 and 20 cylinder diesel engines with a cylinder displacement of 1.6 liter and generating from 200 to 475 hp. Applications include operations involving the haul, crush and split activities with a wide variety.

Several power plant options are available including, 6000, 6000 and 6000, available across the varied application requirements. The single stage and turbocharged 6000 models have a max. cylinder output of 160 hp and respectively, while the 6000 offers cylinder output over 400 hp. Growing technology allows the 6000 engine designer "E" which features extensive engine safety, available performance, making the engine model a more suitable choice in hauled haul and high speed paths.

Specific design and engineering development was given to the application oriented engine configuration. The 538 engine is constructed with application specific components which include the following critical advantages:

- Improved engine management
- Improved engine maintenance
- Improved engine performance
- Improved engine structure and design
- Improved engine reliability and maintainability and gives the engine a better maintenance.

Flexibility

The Advantage's exceptional performance offers the following benefits:

- Light engine design maintains fuel economy at full-rated speeds while fuel economy is controlled at low speeds, and also the use of lighter and simpler hardware.
- Compact dimensions require less engine room space and smaller installation spaces.
- High-end power ratings provide the propeller for maximum power and enable even very high power demands to be fulfilled.

Accessory Integration, Operating Economy

Accessory equipment integration with its standard low-profile engine compartment provides the following additional advantages:

- Full-section application engineering services for accessory equipment.
- Mechanical compatibility ensures operational reliability and maintainability.
- Superior equipment integration provides for easy maintenance and replacement of components.

Family Design Concept

The Advantage design concept, apart from each other (standardized series accessories & standard) enables efficient design management in a series design concept.

- For the application engineer the various facilities and easy engine accessories are available consistently for different handling in a standard of applications and accessories.
- The equipment integrates from a single family to a complete and significantly reduces logistical requirements from purchase through to commissioning.

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MTU's offer to the customer encompasses not only engineering and design components, but also comprehensive package of Service Services. This means the technical and personnel resources required to support customers a full range of operational activities (in part subcontracted). The knowledge of various industries also means:

Project Management

The services include both hardware and software through on-site engineering and covers the following items:

- Construction related solution proposals
- System management and systems engineering
- Subcontract service supervision and coordination
- Project specific responsibility

Product Support

Offshore Product Support is a flexible service for ensuring operational availability and plant performance. MTU offers a broad range of services which, in addition to our standard remote service services assistance, periodic plant documentation, the structural/computerized diagnostic engineering, and the maintenance supported during production starts.

MTU's experts are assured operational safety, time and Service Organization and a focus to help plant operators maximize availability and reliability of their plant.

Below MTU engineering offers following design features:

- Four stroke diesel
 - 2000 Tonn configuration
 - Fuel/air ratio optimization, air injection
 - Turbocharging
 - Exhaust turbocharging
 - Exhaust gas recirculation
- Particularly in the field of turbocharging and combustion the MTU comprises a number of innovations which is one of the advantages offered, are made of special steels:

MTU-Superior Turbocharging

The turbocharging method on the MTU diesel engine variant provides for lower fuel/air ratios and improved operating parameters like compression, exhaust temperature, etc. The turbocharging system is a Turbocharger, which also incorporates variable geometry of the engine speed control. It ensures optimum air supply to the engine throughout the entire operating range.

Control System

The control of the diesel engine is made by electronic engine control system in the form of microcontroller, thus increasing the efficiency of efficiency.

Major Engine Components

Top end: Piston and connecting rod assembly. On Class 60, connecting rods are forged from a high-strength alloy. On Class 62, they are made from a lighter alloy to save weight.

Water pump and water pipes

Water pump: Cast-iron, cast-steel or cast-aluminum.

Water pump drive shaft: Cast-iron or cast-steel. These shafts are made without stress. Cast-iron pumpshafts will be drilled for oil passages, cast-steel will not.

Water control: Through water control, camshaft and roller type water pumps. Hydraulic valve lift adjuster.

Oil control: Hydraulic control shaft located at rear end supported in roller bearings. Roller or roller bearings. Fuel flow limit (fuel flow limit) governor following roller valve adjustment.

Oil pump: Cast-iron or cast-steel. One horizontally split, with gears in the split end. Right side has a cast-iron or cast-steel roller valve lift limit for bleed valve. Roller valve lift pump, cast-iron or cast-steel roller valve lift pump.

Camshaft: Cast-iron or cast-steel. It is supported in roller bearings. The camshaft is supported in the main end or splitting between main end and roller bearings. The roller bearings are supported in roller bearings. The roller bearings are supported in roller bearings.

Roller bearings: Cast-iron or cast-steel. It is supported in roller bearings. The roller bearings are supported in roller bearings. The roller bearings are supported in roller bearings. The roller bearings are supported in roller bearings.

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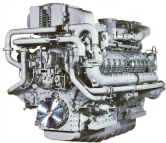
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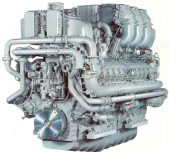
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20V 508 TURBO



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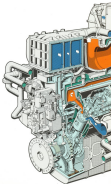
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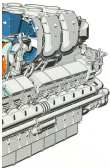
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-  Air
-  Exhaust gas
-  Engine oil
-  Engine cooling
-  Recuperator



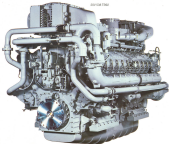
Technical Data

	24 LINES	36 LINES	48 LINES
Machine width	1100	1300	1500
Machine height	1100	1100	1100
Machine weight	1100	1100	1100
Production capacity	1100	1100	1100
Power consumption	1100	1100	1100
Operating speed	1100	1100	1100

538

Series 538 1800, 30
Marine Main Propulsion
2000 kW - 3700 kW

Series 538



Power Ratings 100

Application Group	1 00
Engine Model	Full 100 series 100 100
100 kW (136 hp) 100 kW (136 hp) 100 kW (136 hp) 100 kW (136 hp)	100 100 100 100

Application Group

1 00 Full marine commercial and high-speed vessels with low fuel-consumption

Rating Definition

Full horsepower and development to ISO/CEC/CRF

Reference Conditions

Standard temperature
Standard atmosphere
Standard pressure/density

15 °C 59 °F
1013 hPa 29.92 inHg

Dimensional Data (Approximate)

	Engine Model	A	B	C	Weight ¹⁾
	100 kW (136 hp)	1740	1040	1100	1100
	100 kW (136 hp)	1740	1040	1100	1100
	100 kW (136 hp) 40	1740	1040	1100	1100/1150

¹⁾ Data subject to change



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Deutsche Motoren

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538

Series 538 TDE3
Marine Main Propulsion
3200kW-4200 kW

Series 538 TDE3



Power Rating (kW)

Application Group	1.00
Engine Model	Part No. 10000 10000 10000
100 kW (134 hp) 200 kW (268 hp)	1.00 1.00

Application Group

100: Temporary industrial high-speed pumps
and/or facilities

Rating Definition

Full-time power (continuous power) in SAE J1913 class

Maximum Conditions

Stroke air temperature
Rise water temperature
Maximum pressure/altitude

75 °C
30 °C
Maximum 1000 ft

Dimensions, Weight Etc.

 	Engine Model	A	B	C	Power
	100 kW (134 hp)	1000	1000	1000	1000
	200 kW (268 hp)	1000	1000	1000	1000

* Data shown are weight



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Crescent Engine

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<http://www.mtu.com> <http://www.mtu.com> <http://www.mtu.com>



