

# Series 956 Diesel Engines



**mtu**

Diesels für den LKW



# Series 956 Advantages

## Power Density

The 956 engine's exceptional power density offers the following benefits:

- Light engine weight enables more fuel horsepower for an installation, reducing the weight added to a vessel's hull. Also, the use of lighter engine components in auxiliary machinery, generators, and power transmission aids design convenience.
- Compact dimensions enable low engine room space and easier installation operation.
- Lightweight construction and compactness facilitate the design of well-balanced, smooth-running, low-vibration propulsion and auxiliary drive units.
- High, uniform output per unit horsepower makes these engines ideal for low-speed engines in small installations in a group drive.

## Accessories Integration

Accessory equipment integration with the excellent benefits of engine compartment provides the following additional advantages:

- Allowed for application engineering services for easier installation.
- Proper functional compatibility ensures operational stability and auxiliary.

## Economy

The outstanding operating economy of Series 956 engines can be defined both in terms of engine performance and in terms of installation, maintenance and fuel cost of installation systems.

- Easy, low-costing replacement is economical afforded by design and design integration.
- Economical high-performance controls, Series 956 accessories, systems and maintenance make engine operation.

## Family Design Concept

The 956 family design concept, apart from mechanical parts, allows some accessories interchangeability, enables the user to obtain complete flexibility in variety of engine events.

- For the application engineer, the concept facilitates the interchangeability of accessories, and allows handling the multitude of applications and accessories.
- The complete interchangeability design family for a complete engine provides significantly reduced engine component requirements. This provides the designer through its interchangeability.

# MTU's Scope of Services

MTU offers a full customer-engineered scope of services to meet your needs. For more information, contact our Customer Service. This scope includes technical engineering, manufacturing, assembly and production assistance, inspection, a high degree of customer assistance and your value retention. We strive to meet customer satisfaction in all areas.

## Customer Support

MTU's Customer Support is available 24 hours a day, 7 days a week. Our Customer Support team is available to assist you with any questions you may have regarding your MTU engine or generator. Our Customer Support team is available to assist you with any questions you may have regarding your MTU engine or generator.

## Project Management

The project manager is the primary point of contact through to ensure successful outcomes of the project. The project manager is responsible for the following:

- Coordinate and facilitate all project activities
- Provide management and systems engineering
- Coordinate all project activities and schedules
- Provide customer assistance

## Product Support

MTU Product Support is a dedicated team for ensuring operational availability of your MTU engine. MTU offers a wide range of services which, in addition to our standard technical assistance, includes parts delivery and documentation, site commissioning, installation and operation, maintenance, troubleshooting and repair, and training. Product Support is a dedicated team of MTU's Sales and Service Engineers and Technicians to help with any operational or maintenance-related questions.

# Technical Description

MTU engines are designed to meet the most demanding applications. They are available in a wide range of power ratings and configurations. They are designed to meet the most demanding applications. They are available in a wide range of power ratings and configurations. They are designed to meet the most demanding applications. They are available in a wide range of power ratings and configurations.

## Sequential Turbocharging

- Two-stage turbo
- Two-stage turbo
- Two-stage turbo
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Sequential turbocharging is a turbocharging system that uses two turbochargers in series. The first turbocharger is used to compress the intake air, and the second turbocharger is used to compress the exhaust gas. This system provides a significant performance advantage over a single turbocharger system.

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## Cylinder Cutout, Charge Transfer

Cylinder Cutout, Charge Transfer is a turbocharging system that uses two turbochargers in series. The first turbocharger is used to compress the intake air, and the second turbocharger is used to compress the exhaust gas. This system provides a significant performance advantage over a single turbocharger system.

## VMP Fuel Injection

VMP Fuel Injection is a fuel injection system that uses a variable metering pump to deliver fuel to the cylinders. This system provides a significant performance advantage over a conventional fuel injection system.

## Major Engine Components

Engine and its components are designed to work as one unit. Any component, whether it is a piston, valve, or connecting rod, must function properly for the engine to run.

Major components include:

**Cylinder Block and Crankshaft:** The cylinder block houses the pistons and is connected to the crankshaft.

**Pistons and Rings:** The pistons are connected to the crankshaft and compress the air-fuel mixture. The rings seal the combustion chamber and scrape excess oil from the cylinder walls.

**Valves and Valve Train:** The valves allow fresh air to enter and exhaust gases to leave the cylinder. The valve train controls the opening and closing of the valves.

**Camshaft and Timing Belt/Chain:** The camshaft controls the opening and closing of the valves. The timing belt/chain synchronizes the camshaft with the crankshaft.

**Timing Belt/Chain:** The timing belt/chain is a loop that connects the crankshaft to the camshaft. It ensures that the valves open and close at the correct time.

**Valve Train Components:** The valve train includes the camshaft, pushrods, rocker arms, and valves. It controls the flow of air and fuel into and out of the cylinder.

**Compression Ratio:** The compression ratio is the ratio of the volume of the cylinder at the start of the compression stroke to the volume at the end of the compression stroke. A higher compression ratio results in a more powerful engine.

**Ignition System:** The ignition system is responsible for igniting the air-fuel mixture. It includes the spark plug, spark plug wires, distributor, and ignition coil. The spark plug is the component that actually ignites the mixture.

**Injection System:** The injection system is responsible for delivering fuel to the cylinder. It includes the fuel pump, fuel injectors, and fuel lines. The fuel injectors spray fuel into the cylinder.

**Oil Pan and Lubrication System:** The oil pan is a reservoir for engine oil. The lubrication system circulates oil throughout the engine to reduce friction and wear. It includes the oil pump, oil filter, and oil passages.

**Timing Belt/Chain:** The timing belt/chain is a loop that connects the crankshaft to the camshaft. It ensures that the valves open and close at the correct time.

**Valve Train Components:** The valve train includes the camshaft, pushrods, rocker arms, and valves. It controls the flow of air and fuel into and out of the cylinder.

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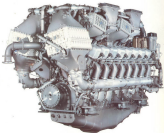
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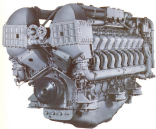
**Oil Pan and Lubrication System:** The oil pan is a reservoir for engine oil.

The engine is a complex system of parts that work together to convert fuel into mechanical energy. Understanding the major components and how they work is essential for anyone interested in automotive engineering.

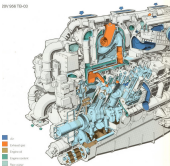
BMW T60



HW 890 T602



2019/2020 F10-C02







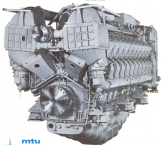
#### Technical Data

	1.8000	1.8000	1.8000
Engine Model	1.8000	1.8000	1.8000
Number of cylinders	4	4	4
Displacement	1.8000	1.8000	1.8000
Maximum power (kW)	100.00	100.00	100.00
Maximum power (hp)	136.00	136.00	136.00
Maximum torque (Nm)	140.00	140.00	140.00
Maximum torque (kgm)	14.30	14.30	14.30
Number of valves	16	16	16

# 956

Series 956 T882.02  
Marine Main Propulsion  
2300kW-4900 kW

Series 956

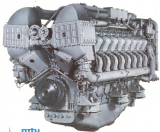




# 956

Series 956 T802  
Stationary Power Generation  
2008 kW-4800kW

1610476-01



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Power Generation

**Power Rating/Class**

Application Class	DC
Engine Model	5000
	1000
	2000
	3000
Control Mode	4000
Control Mode	5000
Control Mode	6000

**Application Class**

- 00 Electric power generation  
 01 Commercial installation

**Rating/Class**

- 00 Electric power to net (base power per ISO 15000  
 environmental design power per ISO 15000 for the  
 engine generator 0% overload capacity)

**Reference Conditions**

Reference temperature	15	25
Change in ambient temperature	10	20
Reference pressure/altitude	101325	101325

**Dimensions Unit: Millimeter**

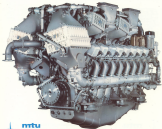
	Engine Model	A	B	C	Height
	100 kW/1500	2070	1800	2400	1500
	100 kW/1800	2070	1800	2400	1570
	100 kW/2000	2070	1800	2400	1620

Reference drawing page

# 956

Series 956 T800  
Stationary Power Generation  
3750 kW – 5000 kW

1000079-01



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Power to Perform

**Power Ratings (kW)**

Application Group	AC
Engine Model	1012
	1013
	1014
	1015
10% duty cycle	1000
50% duty cycle	1000
100% duty cycle	1000

**Application Group**

AC: Generators/alternators,  
compressors/pumps

**Rating Method**

1: Continuous power is not to be used for ISO 3046  
with maximum design power per ISO 3046 for each  
generators/alternators ISO certified capacity

**Reference Conditions**

Rated temperature: 40 °C  
 Design ambient temperature: 45 °C  
 Maximum air velocity: 1000 m/min

**Dimensions, Weighting**

	Engine Model	A	B	C	Weight*
	10% duty cycle	1070	660	1700	10000
	50% duty cycle	1070	660	1700	10000
	100% duty cycle	1070	660	1700	10000

\* See engine dry weight



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 Energy Solutions

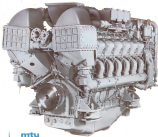
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# 956

Contra-Cool T8 E2  
Full service  
2000 kW - 3200 kW

09 600 70 00



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Energy for All



**Table 1: Weight (kg)**

Generator Group	1.4
Engine Model	100 100T C
100kVA Model	6.000
150kVA Model	7.000
200kVA Model	8.000

Application Group  
 1: Not specified

Rating Definition  
 1: IEC-compliance (S1/S2/S3)

**Reference Conditions**

Reference temperature	40	20
Thermal conductivity coefficient	1.0	1.0
Reference pressure altitude	sealevel	1000/100

**Dimensions, Height (kg)**

	Engine Model	A	B	C	Weight
	100kVA Model	1700	1000	1700	6000
	150kVA Model	2000	1000	1700	7000
	200kVA Model	2300	1000	1700	8000

See engine data sheet



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## Series 956 – Typical Applications





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Elektrische Energie

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