

### Agriculture and Forestry

We drive you. With full power.



Power. Passion. Partnership.



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	TECHNOLOGICAL LEADER

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### 1 Technological leader

As a supplier of high-quality, performance propulsion solutions, MTU stands for the highest level of technological expertise.

MTU is passionate about fulfilling the needs of its customers with the utmost

MTU is a reliable and trend-setting partner which acts with foresight in

### A customer-oriented technological leader.

MTU supplies its customers with technologically-advanced products that are proven in the field. MTU's range of products and services for off-highway applications is extensive and includes both standard and customized solutions.

MTU is part of the Rolls-Royce Group and a world-leading provider of high- and mediumspeed diesel and gas engines, complete drive systems and distributed energy systems for the most demanding requirements.

The product range of MTU is one of the widest and most modern in the sector. We offer comprehensive, powerful and reliable engine solutions for yachts, commercial ships and naval vessels, construction and industrial vehicles, agricultural machinery, mining, rail and military vehicles as well as for the oil and gas industry. We also provide a full line of service products to help you maximize uptime and performance.

For over 100 years, MTU has been known for cutting-edge innovation and technological leadership. That same spirit of innovation inspires our sustainability efforts. Today and in the future, our focus is on developing and implementing system solutions to maximize efficiency and meet emissions standards.

### An expert technological leader

MTU has always set standards in technological expertise for customized product and system solutions. To deliver you maximum power density, we concentrate our innovation on the continuous advancement of our core competencies: turbo charging, exhaust aftertreatment and electronics.

### A passionate engine specialist

We spend every day working together with you, our customers, to deliver engines and systems that best fit your needs. Whether a standard system or a customized solution - we are passionate about the art of engine creation.

### A reliable partner

We understand the specific demands for diverse applications. In collaboration with you, we look for the solutions which are best suited to your individual requirements. Every step of the way - from the start of project planning, during the design of your integrated system solution, at the point of delivery and commissioning and continuing through the care of your product - we are there with you for the entire lifecycle.

### We assure your best yields.

From the moment people first learned to use tools, we have been managing fields and forests. But today those who want to successfully sow, cultivate and harvest need more than just centuries of knowledge and experience. Above all, they need modern technology. Technology that is dependable anytime, anywhere. Technology that makes agricultural work more efficient to meet growing supply demands and ensure profitability. Technology like that provided by MTU: reliable, economical and environmentally friendly.

Often profits can be maximized in agriculture and forestry only through consistent streamlining and the use of extremely economical machines. Our engines prove themselves with their high performance, reliability and long service intervals – in short, built-in efficiency. They show themselves time and time again to be your perfect match for these demanding applications. Leading manufacturers and operators of countless agricultural and forestry machines rely on our expertise and decades of experience.

From the large variety of different applications, there are often very special requirements placed on engines. Whether the need is for very light weight, an extremely compact build or the ability to communicate with electronic controls, our engines can meet these demands without restrictions.

Our individualized and professional customer service ensures that our extensive range of products always provides you with the right drive solution.





### Power you can depend on.

Tractors are the absolutely essential workhorses of agriculture. There are good reasons that our engines drive these highly modern vehicles.

Our engines produce a high amount of torque over a wide range of engine speeds. Whether doing heavy transport work or plowing on wet, hard surfaces, the compact engines prove themselves with their superior power. In addition, a maintenance-free, wheel-driven power take-off can be used as a strong source of power for various add-on units.

Since the consumption of both fuel and resources is kept low, the use of our engines is economically efficient. In addition, the reliability and availability that our engines have always featured make them what they are: your driving power.





### 1 Drive for maximum demands

Whenever traction and maximum power are needed, our engines deliver with reliable power.

### 2 We stand for efficiency

Powerful performance and low fuel consumption assure you of





Unconditional operation
 Our engines provide maximum availability of your equipment – even under extreme conditions.

### 2 A cut above the rest

We are your reliable partner in every situation – for your efforts and results around the clock.

**Engines for Combine Harvesters** 

### We deliver power that reaps many rewards.

How quickly the harvest can successfully be brought in has considerable effect on earnings. Harvesters must therefore not only be robust and flexible, but they must also work reliably without exception. And all that with various types of crops, in giant fields, with dust and heat, and often under a tight deadline.

Under these extreme conditions, our engines prove what they can do. Thoroughly field tested and proven, with engine management that reliably protects against overload and damage, these engines make it possible for modern, highperformance harvesters to take full advantage of their performance potential.

Low fuel consumption, sensible service intervals and low maintenance provide you with additional long-term economic benefits.

Engines for Forage Harvesters

# With us you can cut anything down to size.

Forage harvesters take on the hardest jobs. Powered by our proven and tested engines they can be used in any weather, even on difficult wet surfaces. Regardless of how much power the harvester requires, our engines are able to provide it. Due to electronically controlled fuel injection and high performance, our engines produce high torque even at low engine speeds. If the forage harvesters are running at full power, the throughput can become a real challenge even for the best transport logistics. They can cover a large amount of area in a short time.

Our engines provide extraordinary power with great efficiency. The low consumption of fuel and long service intervals are exemplary. Even the noise emission levels are low – an advantage whenever the equipment needs to be used near residential areas.

Furthermore, the engine design makes quick and uncomplicated maintenance possible – expensive downtimes are reduced to a minimum.









### 1 Leaders in the field

Leading manufacturers appreciate the benefits of our drive systems: high availability, optimum power-to-weight ratio and low fuel consumption.

2 A new dimension of productivity
With perseverance and a high torque, we provide for a fast
and efficient harvest.

Engines for Sugar Cane, Potato, Straw and Beet Harvesters

### Harvesting success.

Harvesting potatoes, beets and other vegetables is a special challenge: In order to bring in the harvest as quickly as possible, the harvesting equipment must work well into the dark of night, sometimes under severe conditions. Rain, cold and problematic ground conditions call for reliable high-power technology with sensitive controls.

Our engines are the first choice for these applications. Because of their compact dimensions, they are comparatively light and need little installation space. At the same time, they provide high amounts of torque. Furthermore, they feature low fuel consumption and emissions as well as low-maintenance designs that minimize downtimes. Numerous available add-ons simplify the integration of engines into the respective equipment - and help you achieve a good harvest.

Engines for Forestry Equipment

# With us, your forestry operation is in the green.

Forest harvesting equipment takes on the hardest jobs in a sensitive environment – in continuous operation in the heat, rain and snow. Our engines ensure that the highly specialized equipment reliably performs the different types of work. High torque at low engine speed ensures powerful action in any engine-speed range.

Low noise and exhaust emissions help to protect the environment – not only for today, but also for the future. Low fuel consumption, an important part of operating costs, is an advantage that has both ecological and economical benefits.

The advanced, proven electronic engine management system ensures the high responsiveness and efficiency of the entire system. It can also be networked and therefore integrated into the computer-based control systems of the equipment.







### All engines at a glance

The higher the requirements and the more specific the application, the more the need for an MTU engine. That's because we develop the optimum drive solutions for all individual tasks.

The characteristics of our engines make them ideal for agricultural and forestry equipment:

### Availability

Uncompromising availability provides reliable operation. Our tested and proven products and technologies combined with our acknowledged quality standards translate into superior dependability. Our engines are prepared for the job anytime, anywhere.

### Power-to-volume ratio

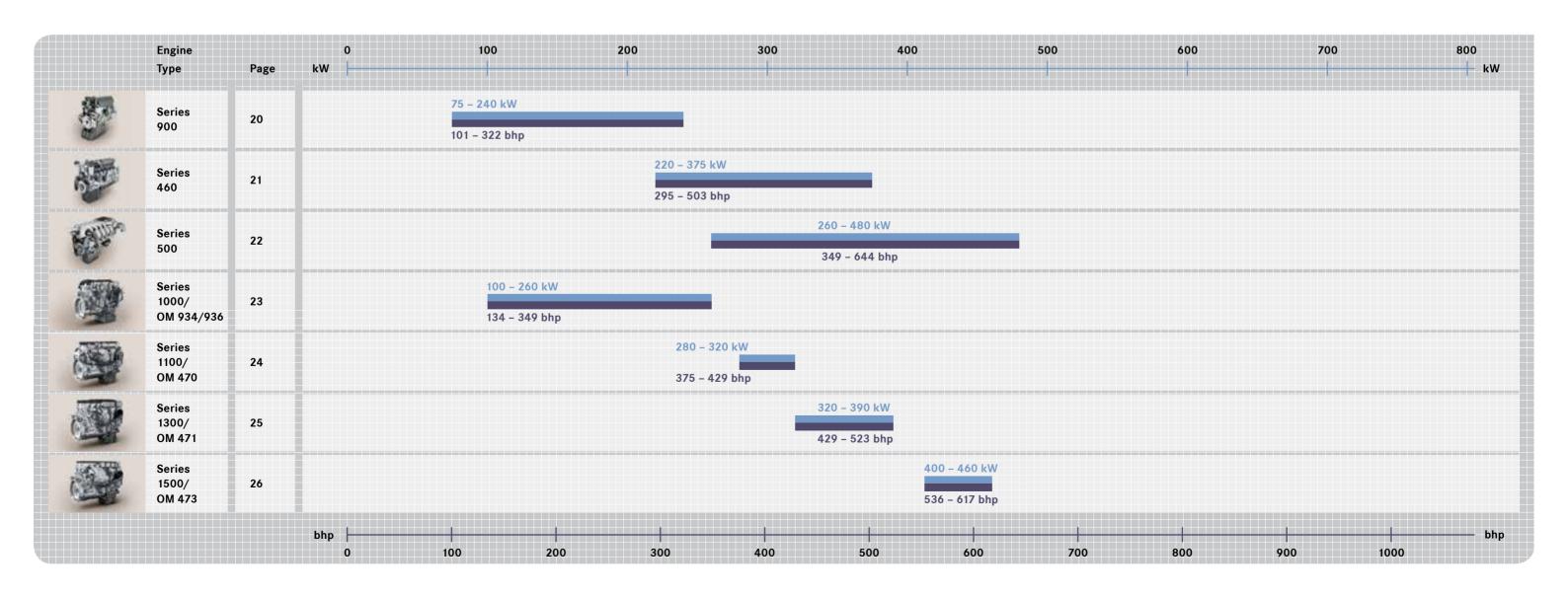
Our engines are designed for the smallest dimensions, allowing agriculture and forestry machinery engineers maximum flexibility to design equipment.

### Power-to-weight ratio

Increasing power demands typically result in heavier equipment. Our engines are designed to provide maximum power with minimum weight. They are carefully engineered to eliminate dead weight without compromising durability.

### Emissions reduction technology

The conservation of the environment and natural resources is a social obligation for us as an engine builder. We offer engines and technology solutions that comply with the next level of emissions regulations. At the same time, we have met the challenge of reducing fuel consumption.









### Series 900

Series		900				
Engine model		904 C01	906 C01	924 C01	926 C01	
		4R	6R	4R	6R	
Power Output	kW	75 - 129	130 - 205	145	220 - 240	
	(bhp)	(101 - 173)	(174 - 275)	(194)	(295 - 322)	
Peak Torque	Nm	400 - 675	700 - 1100	705	1200 - 1300	
Speed	rpm	2200	2200	2200	2200	
Emissions qualificat	tion	EPA Nonroad	T3 Comp (40CF)	R89) and/or		
		EU Nonroad I	IIA Comp (97/68	EC) and/or		
		China Nonroa	China Nonroad III (GB20891-2014)			

Series			900 with SCR technology		
Engine model			924 C02	926 C02	
			4R	6R	
Power Output	kW		95 - 150	175 - 240	
	(bhp)		(127 - 201)	(235 - 322)	
Peak Torque	Nm		550 - 800	850 - 1300	
Speed	rpm		2200	2200	
Emissions qualification			EPA Nonroad T4i Comp		
			(40CFR1039) and/or EU		
			Nonroad IIIB C	Comp (97/68 EC)	

### Series 460

Series		460		
Engine model		460 C01		
		6R		
Power Output kW		220 - 375		
	(bhp)	(295 - 503)		
Peak Torque	Nm	1400 - 2200		
Speed	rpm	1800		
Emissions qualification		EPA Nonroad T3 Comp (40CFR89) and/or EU Nonroad IIIA Comp (97/68 EC) and/or		
		China Nonroad III (GB20891-2014)		

Series		460 with SCR technology	
Engine model		460 C02	
		6R	
Power Output	kW	265 - 375	
	(bhp)	(355 - 503)	
Peak Torque	Nm	1850 - 2200	
Speed	rpm	1800	
Emissions qualificat	tion	EPA Nonroad T4i Comp	
		(40CFR1039) and/or EU Nonroad	
		IIIB Comp (97/68 EC) and/or	
		China Onroad V (GB17691-2005)	





### Series 500

Series		500			
Engine model		501 C01	502 C01	502 C01	
		6V	8V		
Power Output	kW	260 - 315	330 - 480		
	(bhp)	(349 - 422)	(443 - 644)		
Peak Torque	Nm	1730 - 2000	2150 - 2800		
Speed	rpm	1800	1800		
Emissions qualification		EPA Nonroad T3 Comp (40CFR89) and/or EU Nonroad IIIA Comp (97/68 EC) and/or			
		China Nonroad III (GB20891-2014)			

	500 with SCR technology		
Engine model		502 C02	
	6V	8V	
kW	265 - 350	375 - 480	
(bhp)	(355 - 469)	(503 - 644)	
Nm	1850 - 2300	2400 - 3000	
rpm	1800	1800	
	EPA Nonroad T4i Comp		
		(40CFR1039) and/or EU Nonroad	
		8 EC) and/or	
	China Onroad V	(GB17691-2005)	
	(bhp) Nm	501 C02 6V  kW 265 - 350 (bhp) (355 - 469) Nm 1850 - 2300 rpm 1800 EPA Nonroad T4 (40CFR1039) an IIIB Comp (97/6)	

### Series 1000/OM 934/936

Series		1000 with EGR and SCR technology		
Engine model		1000 A00		
		4R/OM 934	6R/OM 936	
Power Output	kW	100 - 170	180 - 260	
	(bhp)	(134 - 228)	(241 - 349)	
Peak Torque	Nm	600 - 900	1000 - 1400	
Speed	rpm	2200	2200	
Emissions qualificat	ion	EPA Nonroad T4 (40CFR1039) and/		
		or EU Nonroad IV (97/68 EC),		
		UN ECE R96 Emission Flex Package		
		(EFP)	9	





### Series 1100/OM 470

Series Engine model		1100 with EGR and SCR technology 1100 A00 6R
Power Output	kW (bhp)	280 - 320 (375 - 429)
Peak Torque	Nm	1900 – 2100
Speed	rpm	1700
Emissions qualification		EPA Nonroad T4 (40CFR1039) and/ or EU Nonroad IV (97/68 EC), UN ECE R96 Emission Flex Package (EFP)

### Series 1300/OM 471

Series		1300 with EGR and SCR technology	
Engine model		1300 A00	
		6R	
Power Output	kW	320 - 390	
	(bhp)	(429 - 523)	
Peak Torque	Nm	2100 - 2460	
Speed	rpm	1700	
Emissions qualificat	ion	EPA Nonroad T4 (40CFR1039) and/	
		or EU Nonroad IV (97/68 EC),	
		UN ECE R96 Emission Flex Package	
		(EFP)	



### Series 1500/OM 473

Series		1500 with EGR and SCR technology
Engine model		1500 A00
		6R
Power Output	kW (bhp)	400 - 460 (536 - 617)
Peak Torque	Nm	2600 - 2900
Speed	rpm	1700
Emissions qualification		EPA Nonroad T4 (40CFR1039) and/ or EU Nonroad IV (97/68 EC), UN ECE R96 Emission Flex Package (EFP)







**Emissions Reduction Technology** 

### Low emissions. High performance.

MTU has long established itself as a leader in the development of solutions for emissions reduction. This challenge involves key technologies which we carry out in-house.

In construction and industrial applications the aim is to generate profit while protecting the environment. One basic condition for efficient operations is to comply with emissions regulations. We care for the technology you need.

In order to achieve advanced emissions reductions, we have invested our comprehensive expertise in core technologies: turbocharging, cooled exhaust gas recirculation, electronic engine controls for optimizing engine processes and preventing soot formation, as well as external optimization.

Advanced emissions regulations like EU Stage IV and EPA Tier 4 final demand further significant reduction in the pollutants emitted. Our engines and systems meet current legislative requirements with proven technologies.

We care for the optimal solution for the special demands of each application and power range by chosing the ideal technology:

- Selective Catalytic Reduction (SCR) to lower NOx emissions as a key to compliance of regulations.
- Cooled Exhaust Gas Recirculation (EGR) is the ideal solution to meet current and future emission standards.

### Selective Catalytic Reduction (SCR)

SCR is a technology that injects urea into the exhaust stream where a catalyst then helps to convert nitrogen pollutants into the harmless components nitrogen, carbon dioxide and water vapor. The SCR technology has been tried and tested for many years in the truck sector.

The advantages of SCR in our engines:

- Low fuel consumption
- Uncompromising engine availability and operational safety
- Substantial reduction in nitrogen oxide and greenhouse gas emissions
- No DPF and no DOC required

The perfect interplay of different technologies facilitates optimal results and the most important aim is achieved - a decrease in harmful emissions, along with a reduction in fuel consumption. A win-win situation for your earnings and the environment.

### Exhaust Gas Recirculation (EGR)

Our latest engines are equipped with modern EGR technology. Combined with two-stage turbo-charging and charge-air cooling, EGR enables engine compliance with the most stringent emission regulations such as EPA Tier 4 final. That means optimum engine characteristics and cost-efficient operation while meeting emissions standards.

Depending on the engine operating point, a certain quantity of exhaust gas is conveyed to the EGR cooler. As it passes through the cooler, the hot exhaust gas is cooled and then mixed with charge air. Mixing the exhaust gas with charge air results in a significant reduction in combustion temperature by comparison with engines that are not using EGR. In return, much lower raw emissions levels of nitrogen oxide are generated inside the engine. The highly efficient EGR combustion process developed by MTU ensures compliance with EPA Tier 4 final emissions legislation without the need for aftertreatment.

### Advantages

In combination with two-stage turbocharging and charge-air cooling (MTU core technologies), EGR offers many advantages:

- Low fuel consumption
- Wide engine performance map full torque curve
- Exceptionally high torque at low speeds
- Excellent transient behaviour (load acceptance/speed jumps)
- Full power output available even at high altitudes
- Full power output available even at high ambient temperatures

No need for exhaust aftertreatment also means no need for additional operating fluids such as DEF, nor for DPF or DOC, nor for hydrocarbon dosing.



SCR Technology (example Series 1300 EU Stage IV/EPA Tier 4 final)

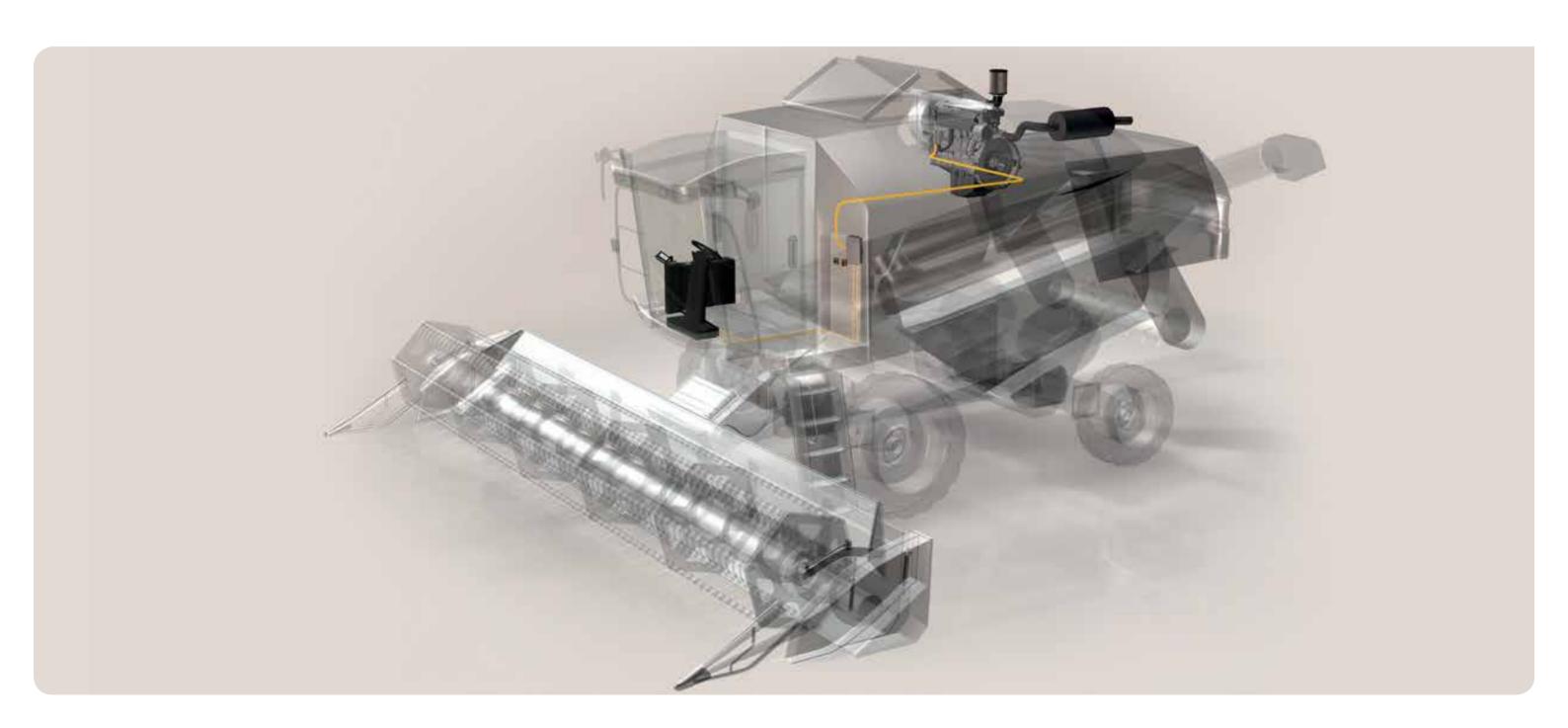
- 1 Urea Tank
- 2 DEF Urea Supply Unit (pump) pumps liquid urea from the tank to the dosing unit
- 4 Dosing unit with Urea Nozzle

EGR Technology (example Series 1500 EPA Tier 4 final)



# Integrated controls: Intelligent monitoring and control systems.

Powerful engines alone will not meet the various technical demands of the different equipment. It takes more than performance to achieve optimal efficiency, reliability and environmental friendliness. To achieve this, you need advanced management, regulation and monitoring of the engine functions.



Engine Management Systems for Series 460, Series 500 and Series 900

### We manage everything for you.

All our engines are equipped with electronic engine controls. Intelligent electronics ensure that performance and efficient operation are achieved under all operating conditions. Innovative, high-end technology takes over the control, regulation and monitoring of the drive system. The systems are modular in order to be able to adapt the diesel engine to the complex optimal operating conditions of the equipment. In addition, operating conditions that could lead to damage are detected in time.

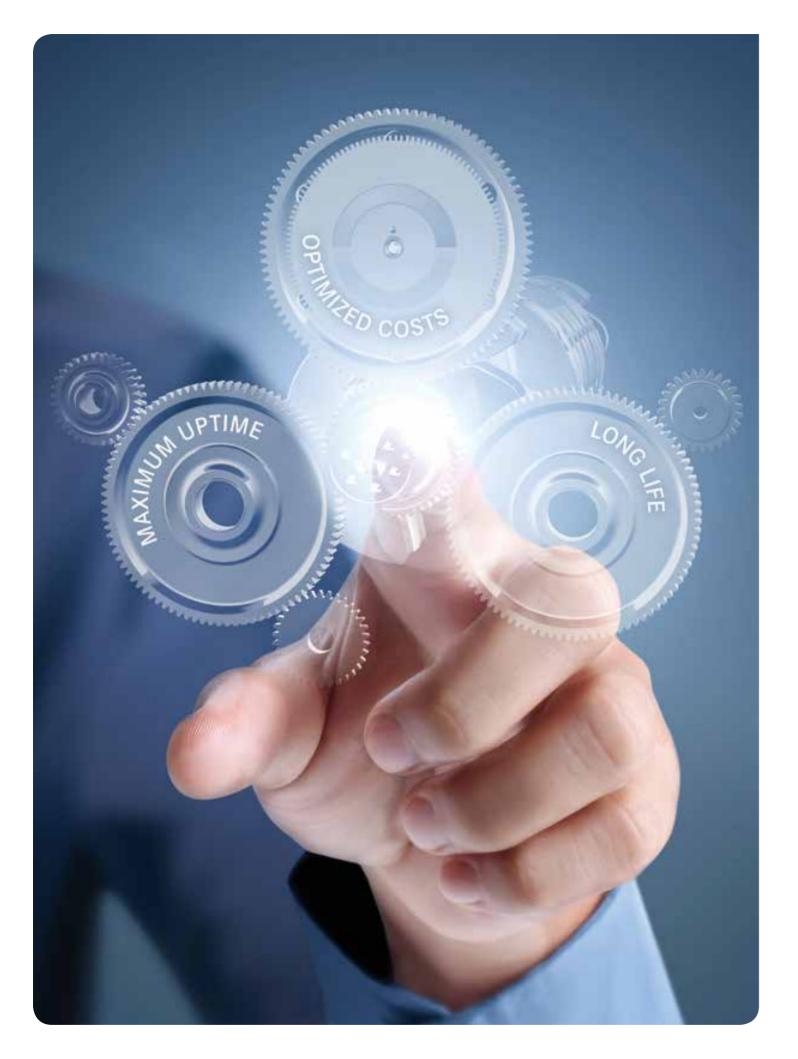
For engines equipped with SCR systems, we are your expert technology partner. The latest electronics integrate the necessary SCR components for the reduction of emissions intelligently into the overall system. This ensures optimal tuning of all engine and emission control functions.

### Your benefits:

- Protection of the engine and therefore safety by:
- · Reporting critical operating conditions
- · Temporary reduction in power
- · Automatic shutdown
- · Start inhibitor
- Over speed regulationSelf-diagnosis and regulation for the system
- Standard interfaces for external system connections, such as CAN data bus and SAE J 1939
- · Easy integration with the vehicle
- Flexible adjustment to the vehicle or vehicle components and project specific needs
- · Interface for engine diagnosis
- High availability and fail-safe operation
- High power efficiency
- Low fuel consumption
- Minimal exhaust emissions that fully meet all legal requirements

Scope of supply for current engine series with emissions regulations EU Stage III A/EPA Tier 3 Engine management system - Typical configuration Series 460, 500, 900 -ABS Transmission Vehicle instrument Interface to panel SAF I 1939 Vehicle -CAN Vehicle control Control unit 2 commands Diagnosis interface Engine sensors elements Additional components for current engine series with emissions regulations EU Stage III B/EPA Tier 4i Engine management system with integrated SCR system - Typical configuration -SCR-CAN 86666 Frame module Urea supply unit 2 SCR muffler with catalyst 2 Urea dosing unit; Heating valve and urea nozzle 1 <sup>1</sup> Engine mounted <sup>2</sup> Vehicle mounted





Parts & Service

### You've made a powerful investment. Protect it with MTU ValueCare.

MTU engines and systems are built to deliver robust, reliable performance. But our commitment to your success doesn't end there. For maximum uptime, longer life and optimized costs, rely on MTU ValueCare—the only service portfolio designed specifically with your equipment in mind.



### Improve performance and extend equipment life.

- Avoid the unexpected with professional service from MTU-certified technicians
- Keep your equipment running smoothly with genuine filters, oils, coolants and OEM parts
- Empower your operators and maintenance personnel with extensive, hands-on training
- Keep a good thing going with factory remanufacturing and rebuild solutions

### Optimize costs without increasing risk.

- Maximize fuel economy and uptime with preventive maintenance services
- Protect against the cost of repairs with Extended Coverage beyond the standard
- Proactively monitor equipment health and activity from afar with MTU digital solutions
- Spend less on parts without compromising quality through our remanufacturing program

MTU ValueCare products and services are available worldwide through our extensive network of more than 1,200 service locations. Contact your local service partner today and ask how MTU ValueCare can be customized to meet your unique needs.

### Never compromise.

MTU engines are built with legendary high standards. For maintenance and long-term support, don't settle for anything less. Maximize the performance, uptime and longevity of your MTU investment with MTU ValueCare—the only parts and service solutions that live up to MTU standards.

### Rely on MTU expertise.

Maintenance, repair and service solutions from MTU helps you get the most out of your equipment and protect your investment. MTU's expert technicians and factory-approved methods optimize availability and reduce lifecycle costs while helping you avoid unexpected problems. From scheduled and unscheduled maintenance to product training, our staff of trained professionals is committed to providing whatever level of support you need throughout the life of your MTU equipment, with support tailored to your specifications.

### Demand genuine.

MTU is committed to providing genuine OEM parts to optimize the performance and value of your equipment. Available for modern and classic MTU, Detroit Diesel and Mercedes off-highway engines, we offer everything you need for a turnkey installation, including professional consulting, special tools, rental tools and spare parts kits. For added peace of mind, our parts are backed with a full factory warranty.

We share your obsession with uptime. So we make sure a wide range of genuine parts are available throughout your MTU engines' and systems' entire lifecycle-which can last for decades. Whatever part you need, wherever you are, we'll get it to you fast through our cutting-edge MTU Parts Logistics Centers and our global network of more than 1,200 service centers worldwide.

Ordering genuine parts is easy. All parts are available from one source, which helps reduce complexity and costs in your supply chain. Experienced MTU product experts provide invaluable technical support and troubleshooting to make sure you get exactly what you need. Our team will search our advanced and extensive online parts catalog-linked to factories and warehouses with highspeed connections—to identify the parts you need and promptly fulfill your request.

### Keep everything running smoothly.

Filters, oils, coolants play a vital role in protecting your investment in MTU engines and systems.

Available from a single source, genuine MTU consumables are an essential part of your preventive maintenance program. Superior design and top-quality materials result in maximum power, torque and low operating costs. As a result, genuine MTU consumables increase uptime, reduce maintenance costs and enhance your peace of mind.

### Turn back the clock.

Remanufactured parts, engines and systems deliver the same high standards of performance, service life and quality as new products, along with identical warranty coverage—at a fraction of the cost. And with design and model-related updates made during the remanufacturing process, they also feature similar technological advancements.

Developed by R&D engineers, the remanufacturing process is designed to save you time and money, while benefiting the environment through the reuse of existing materials. To help you work more efficiently, a wide range of remanufactured parts, engines and systems are available worldwide from our MTU service network.







### V

### Local support. Worldwide.

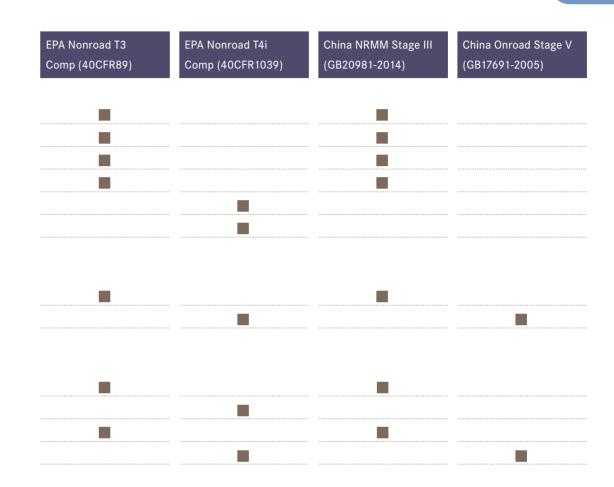
Whenever and wherever you need expert support, MTU specialists are available. Our global service network of more than 1,200 locations—backed by our cutting-edge Parts Logistics Centers—provides you this assurance. To find your local MTU distributor, visit **www.mtu-online.com**.



### VII

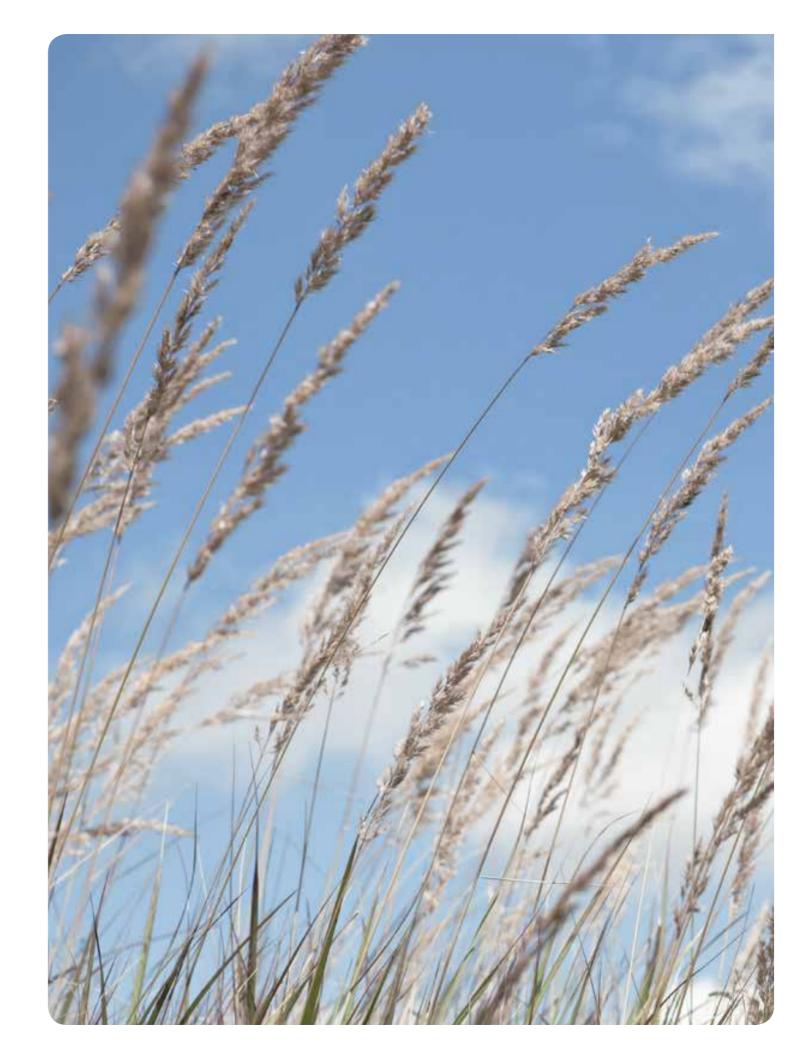
### Series and Emissions Qualification.

Engine model	EU Nonroad St II Comp (97/68/EC)	EU Nonroad St IIIA Comp (97/68/EC)	EU Nonroad St IIIB Comp (97/68/EC)	EPA Nonroad T2 Comp (40CFR89)
Series 900				
4R 904 C01				
6R 906 C01				
4R 924 C01				
6R 926 C01				
4R 924 C02				
6R 926 C02				
Series 460				
6R 460 C01				
6R 460 C02				
Series 500				
6V 501 C01				
6V 501 C02				
8V 502 C01				
8V 502 C02				



### Series and Emissions Qualification.

Engine model	EU Nonroad IV (97/68EC)	UN ECE R96 Emission Flex Package (EFP)	EPA Nonroad T4 (40CFR1039)
Series 1000/			
OM 934/936			
4R 1000 A00			
6R 1000 A00			
Series 1100/OM 470			
6R 1100 A00			
Series 1300/OM 471			
6R 1300 A00			
Series 1500/OM 473			
6R 1500 A00			



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MTU Friedrichshafen GmbH   MTU Asia Pte Ltd   MTU America Inc. Part of the Rolls-Royce Group	
MTU Friedrichshafen GmbH   MTU Asia Pte Ltd   MTU America Inc. Part of the Rolls-Royce Group	
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