PARTNER IN POWERFUL SOLUTIONS.

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02 Lifecycle solutions provider
A tradition of solutions
Backing your power all the way
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Efficient, effective. Eco-friendly.
PowerPacks for roof and underfloor installation
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Rolls-Royce provides world-class power solutions and complete life-cycle support under our product and solution brand mtu. Through digitalization and electrification, we strive to develop drive and power generation solutions that are even cleaner and smarter and thus provide answers to the challenges posed by the rapidly growing societal demands for energy and mobility. We deliver and service comprehensive, powerful and reliable systems, based on both gas and diesel engines, as well as electrified hybrid systems. These clean and technologically advanced solutions serve our customers in the marine and infrastructure sectors worldwide.

A solution provider
mtu systems power the largest yachts, the strongest tugboats and the biggest land vehicles and provide energy for the world’s most important mission-critical applications. Through advanced solutions such as microgrids, we integrate renewable energies and manage the power needs of our customers.

Our customized service offerings help you maximize uptime and performance and are supported by our digital solutions, which enable remote monitoring, predictive maintenance and a range of other benefits that keep your systems running at their best.

For over 110 years, we have provided innovative power solutions for our customers – meeting even the most demanding drive requirements. Our products and services span a wide range of applications and power needs, with both standard and customized options.

An expert in technology
As part of Rolls-Royce, we have long been known for cutting-edge innovation and technological leadership in product development. That same spirit of innovation inspires our sustainability efforts. Our focus is on developing and implementing system solutions that both maximize efficiency and reduce emissions – which in turn work to reduce our impact on the environment.

A passionate and reliable partner
We at Rolls-Royce spend every day working together with our customers, to deliver engines, systems and complete life-cycle solutions that best fit your needs. We understand that each application is different and has its own specific demands. Our engineers embrace the challenge of finding the perfect solution for your unique power requirements. Every step of the way – from project planning, through design, delivery and commissioning; to the lifetime care of your equipment – we are dedicated to helping you get the most from your mtu investment.
A TRADITION OF SOLUTIONS.

Designing and developing customized solutions has a long tradition for us. Karl Maybach introduced the first diesel engine for railcars back in 1924 already, bringing forth such milestone achievements as the “Hamburg Flyer,” the fastest passenger train of its time.

Agility, flexibility and the ability to come up with customized solutions that precisely fit the individual needs of rail clients have always been signature hallmarks of our company. In close cooperation with customers, totally immersed in their daily operations, we push ourselves to design and develop the absolute best technological, economical and ecological answers for addressing their challenges.
Although transport today comprises many different modes, rail continues to be the backbone of mobility. Staying power also defines our solutions and commitment to clients. We are specialized in complete drive solutions that offer optimal performance over the entire course of their lifetime. We ensure that they do by optimally supporting clients with first-rate solutions for optimizing their applications – continually, from day one, at every phase. From consulting and planning to development and commissioning, uptime maximization, digital field support, tailored services and more, we have the perfect solution.

What makes mtu your ideal Lifecycle Solution partner?
Learn more by scanning the code.
Applications overview

SPECIFIC IS OUR SPECIALTY.

Every rail drive application is different, has its own very specific requirements. Specific is our specialty. Our engineers welcome the challenge of finding the perfect drive solution for your needs.

Multiple-unit and high-speed trains
Extremely powerful and proven in continuous service – our drive solutions feature an excellent power-to-weight ratio and outstanding operational availability, enabling them to deliver the reliability, punctuality and safety that passengers expect of multiple-unit and high-speed trains.

Mainline and multi-purpose locomotives
Whether for heavy goods transport, high-speed transit or long-haul passenger routes, our drive systems deliver reliable performance – along with extended service intervals, maintenance-friendly design and reduced fuel consumption that keep life-cycle costs low.

Special purpose rail vehicles
From diesel-electric to diesel-mechanical, diesel-hydraulic, even diesel-hydrostatic – we have the perfect drive solution for all types of special purpose vehicles operating at extremely low speeds.

Railcars
Designed specifically for quick and easy underfloor and roof installation, our complete, compact drive systems incorporate all components in one highly reliable operational unit. They combine decades of experience with one-of-a-kind technologies as the perfect railcar drive solution.

Shunting and Industrial locomotives
The drive system requirements of shunting and industrial locomotives are very special. Our engines are well designed for the task, thanks in part to their excellent part-load performance and acceleration characteristics.
Collaborating closely with customers, we work to develop solutions that deliver superb performance over the complete lifecycle of the drive systems. Our solutions are extremely efficient, effective and eco-friendly. They are also highly compact and easy to integrate.
Hybrid PowerPack with Series 1800
Optimal integration of all drive components in a slim and trim design to enable easy underfloor installation.
315 - 470 kW (422 - 523 bhp)

System solutions with Series 1300, 1500, 1600, 2000 and 4000
The perfect example for clean and durable operation, tried and tested in well over 3000 applications worldwide.
1000 – 3300 kW (1341 – 4425 bhp)

Benefits:
— Continuous design improvements with the same footprint (modular strategy)
— Zero emissions operation on chosen stretches (with Hybrid PowerPack)
— Extensive roof and underfloor installation experience
— Repower capability to extend the life of your investment

Engines for industrial applications with EU Stage V/Tier 4 certification
* For rail specific usage please contact your local partner.

System solutions and engines for engine room installation.
Our diesel push-pull, all-purpose and mainline drive solutions are specifically designed for heavy freight and high-speed passenger trains.
Our locomotive diesel drives, on the other hand, have been optimized for shunting and industrial units involving frequent load changes in all partial load areas and high time slices with low loads. All of our locomotive drive solutions are engineered for maximum uptime, high reliability, easy maintenance, long times between overhaul (TBO) and low life-cycle costs. They combine low emissions and fuel efficiency with a lightweight design for good overall value.

Benefits:
— Reliable performance under all conditions
— Clean, low emissions power
— Drive solution of choice for locomotives and push-pull trains
— Repower capability to extend the life of your investment

Series 1300*
Highly efficient design, ideal for shunting and multi-engine locomotives, railcars.
320-390 kW (429-523 bhp)

Series 1500*
Tireless performance and optimized fuel efficiency all in one.
380-480 kW (510-644 bhp)

Series 1600
Extremely compact rail engine for smooth operation and extremely low emission values.
565-736 kW (758-987 bhp)

Series 2000**
Durable components, dependable performance, day in and day out.
783–1163 kW (1050–1560 bhp)

Series 4000
Proven operations reliability in all conditions paired with cutting-edge emissions technology.
1000-3300 kW (1341-4425 bhp)

PowerPack with Series 1600
Highly compact, integrated and powerful.
565-736 kW (758-987 bhp)

PowerPack with Series 1800
Over 20 years of reliable and efficient performance.
315-390 kW (422-523 bhp)

PowerPack with Series 1800
Optimal integration of all drive components to enable easy underfloor installation.
95 - 240 kW - 125 deep

PowerPack with Series 1600
Highly efficient design for smooth operation.
95 - 240 kW - 125 deep

PowerPack with Series 1500
Highly efficient design for smooth operation.
95 - 240 kW - 125 deep

Our PowerPacks are highly reliable drive systems that are custom designed for each customer’s specific requirements.
Our Series 1600 and 1800 PowerPacks feature a flat and compact design for easy installation and maintenance.
All drive components are contained in a single operational unit and can be individually configured.
We also offer simple equipment-based design options and complete systems.
– Performance capability is assured via our extensive experience

Increasing demand for local public transportation has created a need for modern railcars that support eco-friendly transportation with latest drive technologies. As complete drive solutions, our innovative and highly compact PowerPacks® are well-up to the task and are quickly and easily integrated into wide-ranging vehicles.

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Drive solutions for railcars, push-pull trains and locomotives

SYSTEM SOLUTIONS AND ENGINES FOR ENGINE ROOM INSTALLATION.

Series 880
Highly compact and modularized rail engine.
95 - 240 kW - 125 deep

Series 880
Highly compact and modularized rail engine.
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Highly compact and modularized rail engine.
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Highly compact and modularized rail engine.
95 - 240 kW - 125 deep
Drive solutions for railcars and locomotives - references

**RAILCARS**

Increasing demand for local public transportation brings with it an ongoing need for modern railcars with the latest drive system technology. We – as the experienced specialist – provide the drive systems to support eco-friendly traffic designs. The innovative mtu PowerPacks meet all the requirements of this high-performance sector, which demands far more than simply a “powerful engine”. Our extremely compact, complete systems are configured to suit individual customer needs and can then be integrated into the vehicle in a quick and easy process, using plug&play.

<table>
<thead>
<tr>
<th>Region</th>
<th>Power Output</th>
<th>Horsepower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Middle East, Asia</td>
<td>1500-2400 kW / 2012-3218 bhp</td>
<td>Siemens Mobility</td>
</tr>
<tr>
<td>Europe</td>
<td>1200-1800 kW / 1609-2413 bhp</td>
<td>Vossloh DE12 and DE18</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2200 kW / 2950 bhp</td>
<td>CZ LOKO</td>
</tr>
<tr>
<td>Argentina</td>
<td>2200 kW / 2950 bhp</td>
<td>CRRC</td>
</tr>
</tbody>
</table>

**LOCOMOTIVES**

They are in continuous use, day after day, and prove their reliability on every continent and over thousands of kilometers. They prove their worth in heavy goods operations just as much as at high speeds on long-haul passenger routes. Long maintenance intervals, maintenance-friendly design and low specific consumption figures all contribute to keeping overall life-cycle costs low and are thus important factors in the economically efficient running of rail vehicles.

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</tr>
</tbody>
</table>

1. **Europe, Middle East, Asia** | 1500-2400 kW / 2012-3218 bhp
   - Siemens Mobility
   - Our lightweight modular drives power more than 400 EuroRunner, Vectron DE and Dual Mode locomotives around the world

2. **Europe** | 1200-1800 kW / 1609-2413 bhp
   - Vossloh DE12 and DE18
   - 204 industrial locomotives with modular drive and mtu Series 4000 diesel engine designs

3. **Czech Republic** | 2200 kW / 2950 bhp
   - CZ LOKO
   - Much more fuel efficient and reliable – 28 locomotives repowered for 2M62UM freight trains

4. **Argentina** | 2200 kW / 2950 bhp
   - CRRC
   - Designed for the long haul – 107 freight locomotives equipped with mtu 16V 4000 R43 diesel engines
The power of one
With over 1,000 successful rail installations, the mtu PowerPack Series 1600 and 1800 is the best example of proven performance reliability - and clean performance at that. As complete, ready-to-use drive system, the engine with integrated exhaust gas aftertreatment fulfills the current EU railcar emission legislation standards. All rolled into one together with a power transmission and cooling system, the low weight unit is a perfect fit for railcars and special-purpose vehicles.

What do you call an innovative drive system that combines all of the elements in one compact and efficient unit? We call it a PowerPack. Specially developed for underfloor or roof installation and available for diesel-electric, diesel-mechanical, diesel-hydraulic as well as hybrid drives, the system features an extremely flat design.

Drive solutions for railcars

POWERPACKS – COMPACT, COMPLETE AND COST-EFFICIENT.

What do you call an innovative drive system that combines all of the elements in one compact and efficient unit? We call it a PowerPack. Specially developed for underfloor or roof installation and available for diesel-electric, diesel-mechanical, diesel-hydraulic as well as hybrid drives, the system features an extremely flat design.
Whether for use in locomotives, railcars or special-purpose vehicles, mtu system solutions with Series 1300 and 1500 smartly integrate all drive components in a compact solution to deliver rugged, reliable performance that’s ready to roll.

To characterize the mtu system solutions with Series 1600, 2000 and 4000 as overachievers is almost an understatement. Talk about durability, dependability and clean operational efficiency. Since 1996, these diesel engines have been installed in well over 3,000 railway applications worldwide.

mtu system solutions with Series 1300 and 1500 benefits
- Depending on power needs available with single- or dual-engine
- Compact, lightweight engine and EGA system design
- Installation-ready solution for locomotives, railcars and special-purpose vehicles
- Proven in various applications of rugged and reliable performance
- EU Stage V NRE* certified

- Suitable for EPA Tier 4 NRMM** locomotives
- Condensed cooling system with low cooling load
- Can be operated with synthetic fuels***

* Engines for mobile nonroad machinery
** Nonroad Mobile Machinery
*** Applies to EU Stage IIIB (Series 1300 and 1500) as well as EU Stage V (Series 1300 only)

mtu system solutions with Series 1600, 2000 and 4000 benefits
- Simple, single-frame engine and generator installation
- Perfect system component integration based on:
  - Complete torsional vibration analysis for the entire system
  - Calculation of vibration impact on locomotive performance
  - Optimized engine and generator alignment
- Excellent efficiency through common rail fuel injection and advanced engine control
- Superb emissions values: eliminates over 90% of particulates
- Development, commissioning and service warranty all handled by one source

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## ENGINES AND POWERPACKS

### Performance overview

<table>
<thead>
<tr>
<th>kW</th>
<th>500</th>
<th>1000</th>
<th>1500</th>
<th>2000</th>
<th>2500</th>
<th>3000</th>
<th>3500</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerPack with Series 1800</td>
<td>315 - 390 kW / 422 - 523 bhp</td>
<td>Parallel hybrid solution 315 - 470 kW / 422 - 523 bhp</td>
<td></td>
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<tr>
<td>Series 1600</td>
<td>565 - 736 kW / 758 - 987 bhp</td>
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<tr>
<td>Series 1300* / System solutions with Series 1300* (single and dual-mode solution)</td>
<td>320 - 390 kW / 429 - 523 bhp</td>
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<tr>
<td>Series 1500* / System solutions with Series 1500* (single and dual-mode solution)</td>
<td>380 - 480 kW / 510 - 644 bhp</td>
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<tr>
<td>Series 1600 / PowerPack with Series 1600</td>
<td>565 - 736 kW / 758 - 987 bhp</td>
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<tr>
<td>Series 2000** / System solutions with Series 2000**</td>
<td>783 - 1163 kW / 1050 - 1560 bhp</td>
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<tr>
<td>Series 4000 / System solutions with Series 4000</td>
<td>1000 - 3300 kW / 1341 - 4425 bhp</td>
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</table>

* Engines for industrial applications with EU Stage V/Tier 4 certification
** For rail specific usage please contact your local partner.
*** Available as single- and dual-engine PowerPack
Automation solutions

OPTIMAL DRIVE SYSTEM CONTROL.

Serving as the operational brain, the PowerControl Automation system monitors and controls the drive system, its components. The main function is to control the power distribution within the drive system and provide the demanded power to the rail vehicle.

PowerControl Automation continually monitors the entire drive system, ensuring maximum drive power availability while optimizing performance efficiency, fuel consumption and emissions reduction – for all types of railcars and in all types of climatic environments.

Automation system

1. PowerControl Automation
2. SafeMon (Safety Monitor)
3. CaPoS (capacitor power system)

OPTIMAL DRIVE SYSTEM CONTROL.

Described as a modular platform that easily integrates with wide-ranging rail drive control systems, PowerControl Automation functions can be further enhanced with the optional systems SafeMon, CaPoS and CaPoS smart edition.

SafeMon
The SIL-certified safety monitoring unit SafeMon reliably screens all safety-relevant engine, electric drive and gearbox control functions, immediately activating a shutdown, if necessary.

Implemented safety functions

- SIL 1
  - Avoidance of unwanted traction
  - Protection against overspeeds
- SIL 2
  - Safe shutdown of the PowerPack, if required
  - Emergency stop
- SIL 3
  - Safe disconnection of the traction

CaPoS
Innovatively optimizing cold start-up behaviour, the capacitor power system CaPoS marks a great improvement over conventional starter batteries.

CaPoS smart edition
Featuring an integrated starter with 24V onboard, the CaPoS smart edition is ideal for the heavy duty start-up tasks of Series 1600, 1800 and 4000 engines.

Implemented safety functions

- SIL 1
  - Avoidance of unwanted traction
  - Prevention against overspeeds
- SIL 2
  - Safe shutdown of the PowerPack, if required
  - Emergency stop
  - Safe uncoupling
- SIL 3
  - Safe disconnection of the traction

Available for rail engines and PowerPacks: Series 1600, 1800 & 4000
ENGINEERING TODAY
WHAT YOU’LL NEED TOMORROW.
Emission reduction solutions

CLEAN EFFICIENCY.

Our advanced emission reduction solutions combine key technologies to meet current and future emissions standards as well as reduce fuel consumption. They are designed to ensure smooth system component interaction and clean operational efficiency.

KEY GREEN TECHNOLOGIES.

1 Selective catalytic reduction (SCR)
Our SCR solution removes up to 90 percent of nitrogen oxide from exhaust gas. A closed-loop control system prevents ammonia slip during operation. Its fuel and space-efficient design is also very maintenance friendly.

2 Diesel particulate filter (DPF)
Our diesel particulate filters reduce soot emissions to levels that, in some cases, are well below statutory limits.

3 Diesel oxidation catalyst (DOC)
Easy to install and highly effective in the breakdown of exhaust pollutants - our diesel oxidation catalysts exceed regulatory standards.

4 Two-stage turbocharging
With our two-stage turbocharging, engines achieve high output across a wide speed range and superb fuel efficiency. Their space-saving engine integration offers additional benefits.

5 Exhaust gas recirculation (EGR)
Modern EGR solutions can reduce nitrogen oxide generation within the cylinder by more than 40%. We have designed a highly compact one that integrates all EGR components. It enables the cost-effective upgrade of rail vehicles for compliance with new emissions standards.

6 Common rail injection
Our common rail injection solutions have been enhancing rail engine combustion processes for over 20 years already, making them especially clean and economical.

Example based on the PowerPack Series 1600:
EU Stage III B with SCR,
EU Stage V with SCR plus DPF and DOC.

Example based on the Series 4000:
EU Stage III B and V with DPF and DOC.
IRA w/ aftertreatment.

Direction of exhaust gases
## Emission reduction solutions

### SERIES EMISSIONS CERTIFICATIONS.

<table>
<thead>
<tr>
<th>Engine model</th>
<th>Emissions standards</th>
<th>UIC IIIA</th>
<th>EU Stage IIIA compliant</th>
<th>EU Stage IIIIB compliant</th>
<th>EU Stage V</th>
<th>EPA Tier 3 compliant</th>
<th>EU Nonroad St V (2016/1628)</th>
<th>+ EPA Nonroad T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Packs for roof and underfloor installations</td>
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</tbody>
</table>

* EU IIIA type approved. Under special preconditions certification available on request.
** For rail specific usage please contact your local partner.
*** Engines for industrial applications with EU Stage V/Tier 4 certification.
We offer you the best possible equipment service by incorporating digitalization in a holistic service approach. This helps improve our service and helps you operate your equipment more effectively.

Our digital platform mtu Go! offers you the opportunity to analyze system data quickly, determine important action steps, and plan them optimally, either independently or together with our service department. Ensure that your business runs smoothly with mtu Go! digital service solutions.
Digital rail solutions

HOW DIGITAL SOLUTIONS OPTIMIZE YOUR RAIL BUSINESS.

Rail applications have great demands on engines and drive systems. Ensuring that propulsions are constantly available for optimum use, means making the right maintenance decisions. Our digital solutions enable you to keep track of operating hours, system alarms and maintenance schedules so you can plan service intervals more effectively.

Delivering actionable insights through digital solutions

**Connect all your equipment**
- Data collection from your fleet, asset, system and engine
  - Connectivity is the basis for all the advantages of digitally supported service. Using our edge software connected to the control unit, you and your service network can monitor relevant deviations from the optimum condition remotely. We offer several ways of collecting data, including the creation of interfaces to already existing data sets. In doing so, we always adhere to the highest data privacy and security standards of our industry.

**Monitor your fleet**
- Visualization of data for a quick and accurate overview of your fleet
  - With the mtu Go! platform, predefined users, such as on-site technicians or managers, can view the system data and perform initial analyses by using diagnostic tools. By accessing the same information, your service network can provide fast support in handling alarms and planning necessary maintenance together with you. Open APIs allow you to interface directly to your existing dashboards or systems.

**Keep track of your data**
- All important data and alarms available at a glance for efficient fleet monitoring
  - Different device and software options ensure optimal connectivity
  - Data privacy and security to the highest industry standards

**Access your data**
- Remote monitoring, available for individual assets, as well as complete fleets worldwide
- Intuitive and clear design for easy operation
- Visual comparison of data using the diagnostic tools for initial analyses

**Manage your fleet**
- Digital solutions for your detailed data analysis on necessary actions
  - Supported by mtu Go! your Service Network is able to analyse all relevant data from your equipment and compare it with data sets from other systems. From this we together can proactively derive recommendations for action.
  - In future, the analysis can be enriched with additional external data sets, such as environmental influences or time schedules. Cross-linking data will create new opportunities for optimizing business processes.

**Learn from your data (under development)**
- Algorithms for proactive early detection of deviations
- Troubleshooting based on large amounts of data with artificial intelligence
- Comparison with data outside own fleet leads to faster knowledge transfer and optimal service tool for initial analyses

mtu Go! links your data with our engineering knowledge and experience from thousands of other assets in one global view to provide insights that enrich your business. For details, please scan the QR Code or visit www.mtu-go.com
KEEPING YOUR BUSINESS RUNNING SMOOTHLY.
Repowering solutions

Reconditioning and repowering solutions for locomotives and railcars offer a tried and tested economic alternative to placing a new order with four positive effects:

— Using a modern diesel engine reduces operating and maintenance costs while maximizing the economic benefits.
— Legally stipulated exhaust gas emission standards are met and noise levels significantly reduced.
— Vehicle availability and reliability are brought up to the level of a new vehicle.
— The cost of investment is considerably lower than a new vehicle.

Following conversion, the reduced operating costs enable many potential savings:

— Reduction in fuel costs.
— Extended maintenance intervals and minimized costs thanks to new maintenance concept.
— Legal requirements are met by proven combustion technology; lower fuel and oil consumption lead to reduced pollutant emissions, thus benefitting the environment.
— Lower investment costs through reduced reserve locomotive stock.
— Limited downtime thanks to high availability and reliability.

As a rail industry partner with extensive experience, we not only repower engines, but also provide a comprehensive package of other support services:

— From the design phase to drive system implementation - active support and professional engineering at all stages of the repowering project.
— Supply of the latest, extensively tested engines and PowerPacks featuring compact designs and excellent power-to-weight ratios enabling easy installation, even of higher outputs without permissible axle loads being exceeded.

Exchange Process

1 Customer purchases remanufactured product from local service partner and pays the core deposit.
2 Customer’s original core is returned to collection center by local service partner for core acceptance check.
3 Customer receives core credit based on the core’s technical condition.
4 Accepted cores are sent to regional reman centers, where the remanufacturing process takes place.
5 Remanufactured products are delivered to our service partners and made available for purchase.
Complete lifecycle solutions

ENSURE A LONG, RELIABLE LIFE.

As your equipment ages, its needs — and yours — change. Our full portfolio of service solutions wrap around your investment, providing 360 degrees of customized support, for optimal value at every stage of life.

Preventive maintenance

DON’T LET THE UNKNOWN LEAVE YOU UNPREPARED.

With large investments, lifecycle costs can be significant. It’s often the unforeseen costs lurking below the surface — things like fuel consumption, unplanned downtime and repairs — that have the greatest potential to impact your business. That’s why it pays to invest in our superior power systems and plan ahead with preventive maintenance. There’s no better way to optimize fuel economy, maximize uptime and avoid the unexpected.

Optimize fuel economy.
Fuel consumption accounts for up to 90 percent of total lifecycle costs depending on the application — by far one of the most significant costs associated with your equipment. Well-maintained engines deliver industry-leading fuel efficiency, helping you keep fuel costs down over the long term.

Maximize uptime.
Preventive maintenance services can be planned around your schedule, so your equipment is available when you need it most.

Avoid the unexpected.
Planned maintenance helps solve problems before they start, helping you avoid unexpected downtime and resolve problems early before they escalate.

Work with one source.
We keep maintenance simple, safe and efficient. Our factory-approved methods and expert technicians ensure everything is done correctly according to our proprietary preventive maintenance schedules, optimizing the availability of your equipment, reducing lifecycle costs and helping you avoid unforeseen problems.

The importance of preventive maintenance

When preventive maintenance is a high priority

1. Scheduled stops
2. Improved performance
3. Better control over operation

When preventive maintenance is a low priority

1. Nonscheduled stops
2. Inability to plan
3. Lower performance

We focus on preventive maintenance to reduce the downtime and added costs of corrective maintenance.

Delaying maintenance increases unexpected failures and decreases performance and fuel economy.

1 Avoid the unexpected with added protection beyond the standard warranty.
2 Make better decisions faster with digitally-enhanced tools.
3 Maximize availability and optimize lifecycle costs with a ValueCare Agreement.
4 Improve system performance and extend equipment life with on-demand support.
5 Keep a good thing going with factory reman/overhaul solutions.

Less corrective maintenance

Less preventive maintenance

More preventive maintenance

More corrective maintenance

Efficiency
Availability
Time

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ValueCare agreements

FOCUS ON YOUR OPERATIONS.
LEAVE THE REST TO US.

You’ve got a tough job. With us as your partner, you’ll get the power, performance and peace of mind to get it done right. The digitally connected power systems of our ValueCare agreements make it easy to keep your business running smoothly and reduce total cost of ownership by maximizing uptime, optimizing lifecycle costs and helping you avoid equipment-related business disruptions through preventive maintenance.

Service solutions designed around your priorities
ValueCare agreements make it easy to optimize lifecycle costs, maximize uptime and devote more time and resources to your core business, with tailored solutions to move your business forward.

**Gold**
- Maximize operational uptime
  - Operational uptime commitment to meet or exceed your availability targets
  - Regular supervision by local service partner (e.g. monitoring of parts stock, improvements)
  - 24/7 emergency assistance with on-site support
  - Monthly reports, including availability and average repair times
  - Asset health monitoring
  - Annual performance meetings and trend analysis with us to address technical updates, engine fleet data, operational optimization and more

**Silver**
- Maximize operational uptime
  - Proactive maintenance planning, troubleshooting and remote engine health monitoring
  - Fixed pricing per operating hour for maintenance and repairs
  - Key corrective maintenance components always in stock at our main warehouses
  - 24/7 standby service with remote technical support
  - Quarterly reports, including reliability analysis (mean time between failure)

Silver also includes all benefits of Bronze level

**Bronze**
- Eliminate unexpected maintenance costs
  - Proactive maintenance planning, troubleshooting and remote engine health monitoring
  - Fixed pricing per operating hour for maintenance and repairs
  - Key corrective maintenance components always in stock at our main warehouses
  - 24/7 standby service with remote technical support
  - Quarterly reports, including reliability analysis (mean time between failure)

Bronze also includes all benefits of Silver & Bronze levels

Service network

LOCAL SUPPORT.
WORLDWIDE.

Whenever and wherever you need expert support, our 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 distributor, visit www.mtu-solutions.com.

Local support. Worldwide.
We ensure that you receive individualized support from our global network of more than 1,200 service centers– anywhere, anytime.

Local support. Worldwide.

Always on call, 24/7
Whether it’s connecting you with a local service partner or assigning an urgent problem to a dedicated team of our experts, we’re ready to assist you – wherever you are, whatever you need.

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Asia/Pacific +65 6860 9669
North and Latin America +1 248 560 8888
info@mtu-solutions.com

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