



| Commercial Marine

WE MOVE YOU.
WITH RELIABLE POWER.



A Rolls-Royce
solution

PIONEERING THE POWER THAT MATTERS

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.

MTU is one of the world's leaders in large marine diesel and gas engines and complete propulsion systems for commercial marine vessels. 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.

HERE'S AN OVERVIEW OF OUR TYPICAL COMMERCIAL MARINE APPLICATIONS



Tugboats

Harbor and escort tugs must maneuver with high power, precision and speed in all situations.

Our engines help you meet these requirements with broad performance maps, proven common-rail technology and sequential turbocharging.

The result: impressive bollard pull figures with fast response time.



Special vessels

From fire and rescue boats to research and survey vessels: No matter what specialized task your vessel performs, we can provide exactly the right propulsion solution – involving both high quality products and preventive maintenance programs for the highest level of reliability.



Pilot boats

No matter how rough the sea state, ships have to be guided to harbor, so your vessel's availability must be beyond doubt.

You need propulsion systems that are safe, powerful and fully reliable. We make sure your engines can brave even the harshest conditions.



Offshore service and supply vessels

No matter how rough conditions are at sea: You have to get out there, and your vessels' availability must be guaranteed.

So what you need are propulsion systems that are 100 % reliable, punctual and safe. We make sure they are: with engines braving even the harshest conditions, with preventive maintenance concepts designed for continuous heavy duty service and, with comprehensive support 24/7.



Offshore wind park crew boats, service and supply vessels

With its long-standing, strong commitment to the marine sector, we have always felt a particular responsibility for the environment – and have lived up to that responsibility in all aspects.

That's what makes us the ideal partner for companies active in similar, forward-looking sectors – such as power generation from renewables.



Passenger vessels and ferries

Reliable operation of your fleet is a crucial factor in the success of your business.

We lay the foundation by supplying high-quality products and delivering preventive maintenance programs designed to ensure continuous heavy-duty service. You can rely on our 24/7 service – and on securing maximum uptime for your vessel.

DIESEL ENGINE – 4000 M05

Our Series 4000 M05 for commercial marine applications is the latest marine engine of the powerful Series 4000 family. When designing the Series 4000 M05, we kept three considerations always in our mind: Life-cycle costs, performance and ease of maintenance.

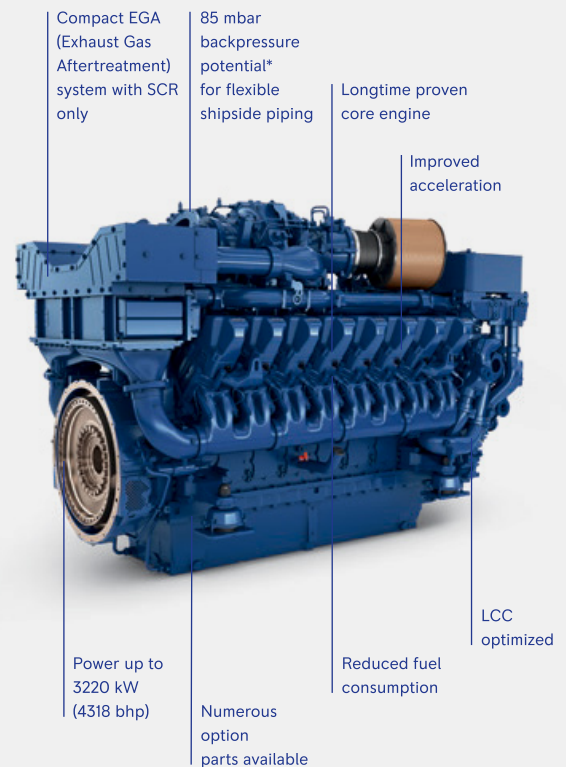
We used our legendary IRONMEN engines as a basis but fine-tuned it with high attention to detail to maximize durability, performance and efficiency. Only SCR is needed to fulfil IMO III and EPA Tier 4 emissions regulations.

We also help customers to design and integrate the engine/SCR combination into their vessel design.

up to
3220 kW
(4318 BHP)

Copy points for visual:

Compact EGA (Exhaust Gas After-treatment) system with SCR only / 85 mbar backpressure potential for flexible shipside piping / Long-time proven core engine / Improved acceleration / LCC optimized / Reduced fuel consumption / Numerous option parts available / Power up to 3220 kW (4318 bhp)



PURE GAS ENGINE – 4000 M05-N

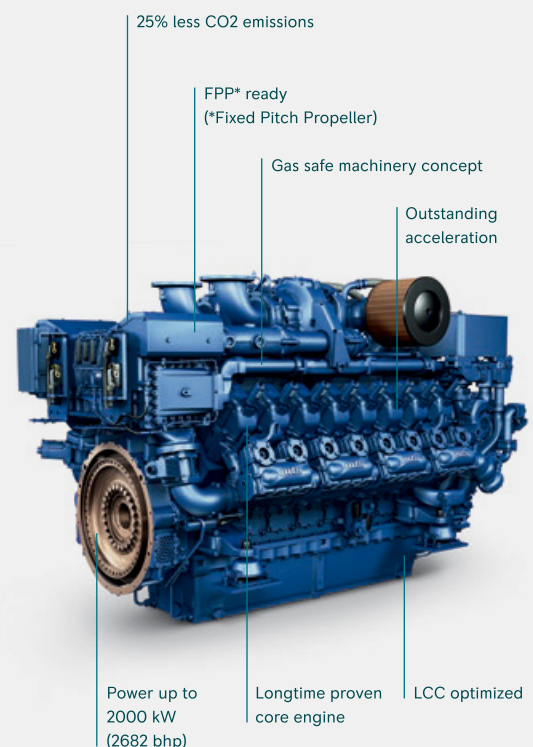
Our Series 4000 M05-N for commercial marine applications is the latest marine engine of the powerful Series 4000 family. When designing the Series 4000 M05-N we kept three topics always in our mind: Life-cycle-costs, performance and environmental friendliness.

We used our legendary IRONMEN engines as a basis for the development of our pure gas engine. The engine will be equipped with a multipoint gas injection system, a dynamic motor management system and an advanced turbocharger design. The multipoint gas injection system is designed to enhance the engine's dynamic acceleration behavior to match the performance of modern diesel engines.

25%
LESS CO2
emissions

Copy points for visual:

25% less CO2 emissions / FPP ready (Fixed Pitch Propeller) / Gas safe machinery concept / Outstanding acceleration / Long-time proven core engine / Power up to 2000 kW (2682 bhp)



Case Study Highlight 01

SERIES 4000 ENGINES HELP THE GLADYS B MOVE THINGS ALONG AT THE WORLD'S BUSIEST PORT SYSTEM

Who

Gladys B tugboat

What

MTU Series 4000 M64 engines

Where

New Orleans, Louisiana, USA

E.N. Bisso, a major tugboat operator based in New Orleans, expanded its operations with the launch of the Gladys B. E.N. Bisso provides ship assist and harbor docking services over five port jurisdictions on the Lower Mississippi River. Built by Signet Shipbuilding & Repair, the 80-foot Gladys B joined E.N. Bisso's tug fleet of 15 vessels in December 2016.

Powered by two MTU 16V 4000 M64 engines, the Gladys B is ready, willing and able. The Series 4000 engines are rated at 2,681 bhp each at 1,800 rpm and are Tier 3 emissions certified.

Advanced technology and specialized engine design provides the maximum reliability that will keep Gladys B operating with greater uptime and reduced lifecycle costs. With twin 16-cylinder Series 4000 engines coupled with Rolls-Royce US 205 P20 FP azimuth stern drives, the Gladys B delivers unprecedented performance and agility.

[▶ LEARN MORE](#)

“THE IMMEDIATE TORQUE AND THE POWER PROVIDED BY THE SEQUENTIAL TURBOCHARGING SYSTEM OF THE MTU 16V 4000 M64 ENGINES WILL PROVIDE ABILITIES TO THE TUG CAPTAIN THAT HE HAS NOT SEEN BEFORE.”

Jeff Sherman - Commercial Marine Sales Manager, MTU America



Case Study Highlight 02

DOEKSSEN PROTECTS THE ENVIRONMENT AND WINS THE DAY WITH SERIES 4000 ENGINES

Who

Doeksen

What

MTU Series 4000 16-cylinder single-fuel gas engines

Where

Harlingen, Netherlands

Doeksen operates ferry services, plying routes frequently across the Wadden Sea, a World Heritage site with the world's largest unbroken system of intertidal sand and mud flats—minimizing environmental footprint was a major concern for the Dutch shipping company.

With MTU's new 16-cylinder Series 4000 gas engines, each with an output of 1,492 kilowatts, Doeksen is equipped to ferry up to 600 passengers and 64 cars across the Wadden Sea at speeds of up to 14 knots, while cutting pollutant emissions by a significant margin.

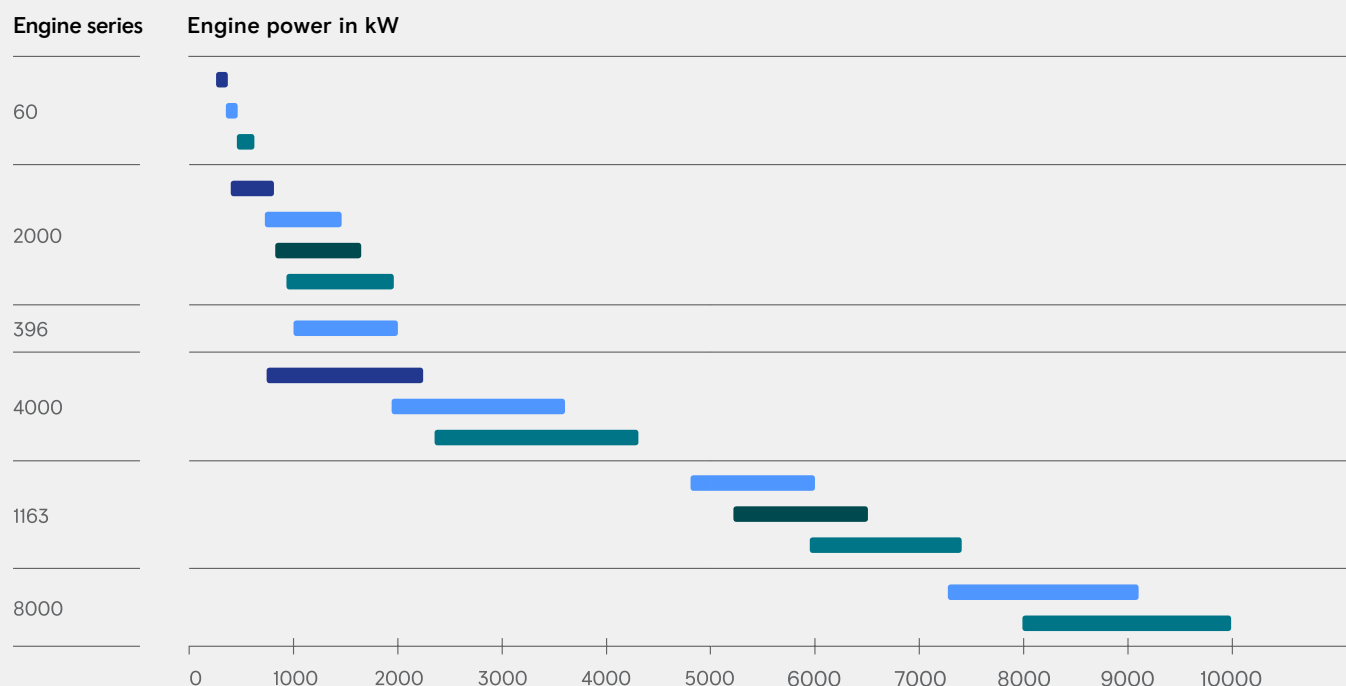
[▶ WATCH VIDEO](#)

“WE KNOW MTU AS A TOP-NOTCH MANUFACTURER OF HIGH-PERFORMANCE DIESEL ENGINES THAT ARE EXTREMELY RELIABLE—WE ARE ENTIRELY CONVINCED OF THE MERITS OF THE NEW GAS ENGINE.”

Paul Melles – Managing Director, Doeksen



MAIN PROPULSION

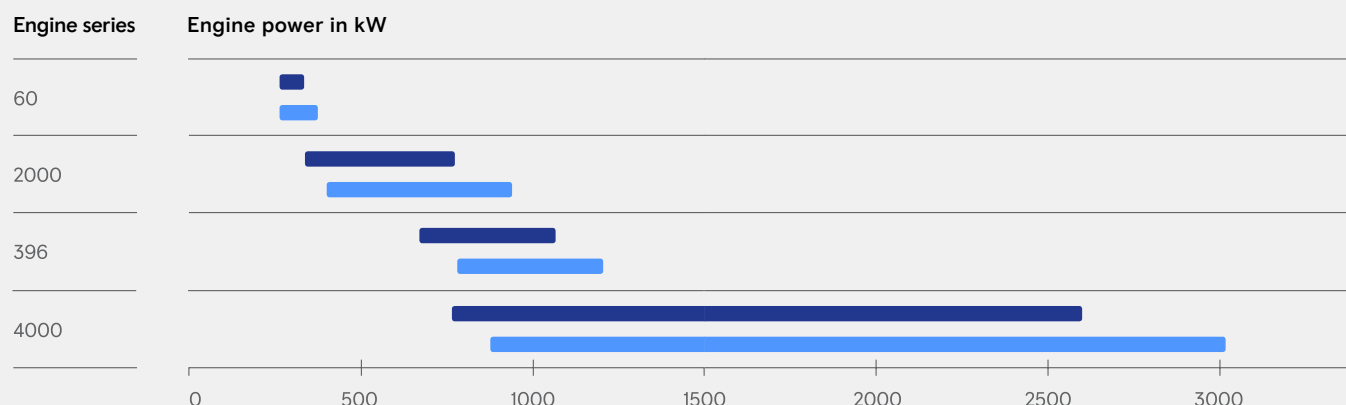


ENGINE POWER IN KW

Engines	1A	1B	1D	1DS
	Engines for vessels w/ unrestricted continuous operation - Average load: 70 - 90 % of rated power - Rating definition: ICFN, fuel stop - Typical annual usage: unrestricted*	Engines for fast vessels with high load factors - Average load: 60 - 80 % of rated power - Rating definition: ICFN, fuel stop - Typical annual usage: 5000 hours*	Engines for fast vessels w/ intermittent load factors - Average load: ≤ 60 % of rated power - Rating definition: ICFN, fuel stop - Typical annual usage: 3000 hours*	Engines for fast vessels with low load factors - Average load: ≤ 60% of rated power - Rating definition: ICFN, fuel stop - Typical annual usage: 1500 hours*
60	261-373	354-447	-	466-615
2000	400-800	720-1440	810-1630	932-1939
396	-	1000-2000	-	-
4000	746-2240	1920-3600	-	2340-4300
1163	-	4800-6000	5200-6500	5920-7400
8000	-	7280-9100	-	8000-10000

**Application groups only indicate which MTU engine suits your demands best. For your type of vessel, you can also choose engines from other application groups than stated in the selection guideline.*

MARINE ON-BOARD POWER GENERATION, DIESEL-ELECTRIC DRIVES AND GENERATOR SETS



ENGINE POWER IN KW

Engines	3A/3B	3A/3B
	Engines for onboard power generation and diesel-electric drive – Continuous operation 50 Hz – Rating definition: ICXN, 10% overload capability	Engines for onboard power generation and diesel-electric drive – Continuous operation 60 Hz – Rating definition: ICXN, 10% overload capability
Frequency	50 Hz	60 Hz
60	271-322	271-370
2000	322-770	400-930
396	680-1030	790-1200
4000	760-2600	895-3015

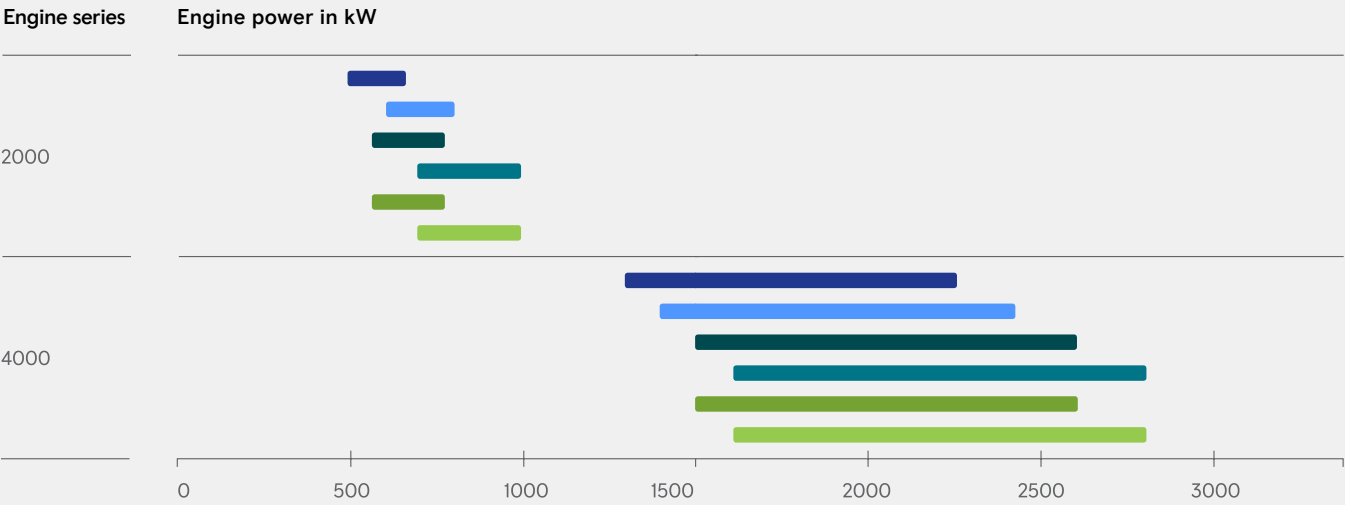
Application groups only indicate which MTU engine suits your demands best. For your type of vessel, you can also choose engines from other application groups than stated in the selection guideline.

GENSET POWER IN KWE*

Gensets	3A/3B	3A/3B
Frequency	50 Hz	60 Hz
MG 2000	310-730	370-880
MG 4000	720-1690	850 - 2150

**Alternator efficiency of 96% considered, excluding parasitic losses.*

ENGINES AND GENSETS FOR POWER GENERATION



ENGINE POWER IN KW

Engines	3A	3A	3B	3B	3C	3C
Frequency	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
2000	498-664	600-800	575-770	695-980	575-770	695-980
4000	1350-2245	1455-2425	1560-2600	1680-2600	1560-2600	1680-2600

Application groups only indicate which MTU engine suits your demands best. For your type of vessel, you can also choose engines from other application groups than stated in the selection guideline.

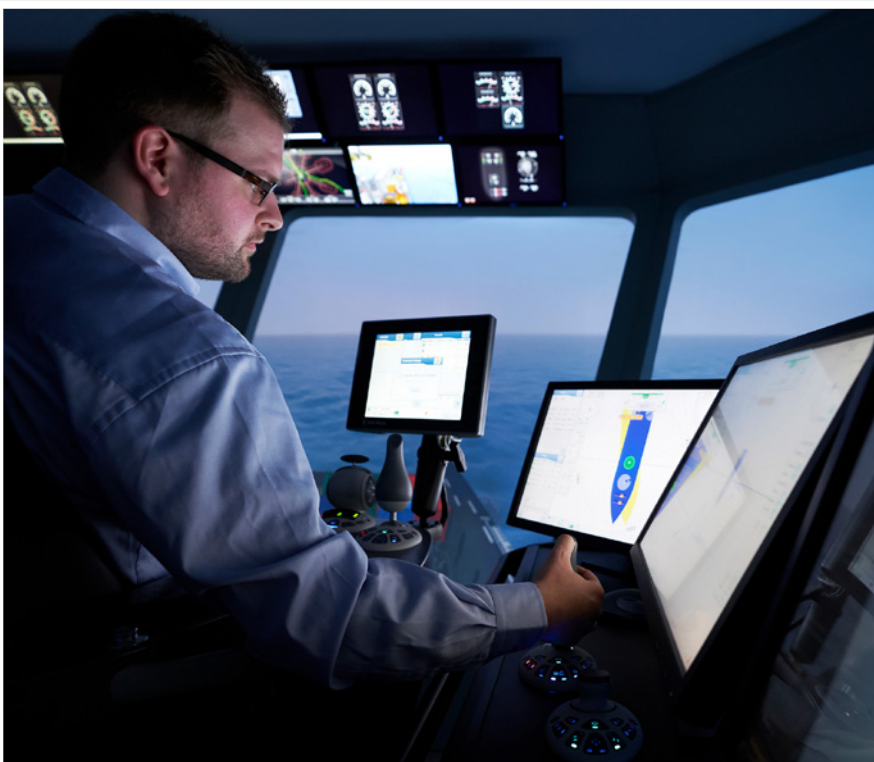
GENSET POWER IN KWE*

Gensets	3A	3A	3B	3B	3C	3C
Frequency	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
PP 4000	1295 - 2155	1395 - 2330	1500 - 2500	1615 - 2690	1500 - 2500	1615 - 2690

*Alternator efficiency of 96% considered, excluding parasitic losses.



3A/3B/3C	Engines for power generation, electric fire-pump drives and emergency power – constant speed
3A	Continuous Power
50 Hz	– Continuous operation power, unrestricted – Rating definition: ICXN, 10% overload capability
60 Hz	– Continuous operation power, unrestricted – Rating definition: ICXN, 10% overload capability
3B	Prime Power
50 Hz	– Continuous operation with variable load – Rating definition: ICXN, 10% overload capability
60 Hz	– Continuous operation with variable load – Rating definition: ICXN, 10% overload capability
3c	Prime Power Limited
50 Hz	– Standby operation with variable load – Rating definition: ICXN, 10% overload capability
60 Hz*	– Standby operation with variable load – Rating definition: ICXN, 10% overload capability



E-drive Solutions:

HIGHER PERFORMANCE. FEWER EMISSIONS.

For minimum emissions, lower operating costs and maximum ease of use, hybrid systems — such as E-Drive systems — are the preferred solution. Conventional E-Drive systems can be upgraded using optional battery modules, enabling silent, emission-free operations in harbor areas.

Valuecare Agreements:

SERVICE SOLUTIONS DESIGNED AROUND YOUR PRIORITIES.

ValueCare Agreements wrap around your investment – providing tailored solutions that make it easy to optimize lifecycle costs, maximize uptime and devote more time and resources to your core business.

[▶ LEARN MORE](#)



Bronze

Ensure parts availability and price stability

- Digital connectivity (Go! Connect) and platform access (Go! Manage)
- Automated delivery of parts (preventive) at a predefined rate based on operating hours
- Preventive maintenance labor options to fit your business needs
- Dedicated support for technical issues
- Quarterly reporting of completed and upcoming maintenance and costs
- Annual on-site engine health check by our technician



Silver

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)

Silver also includes all benefits of Bronze level



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

Gold also includes all benefits of Silver & Bronze levels

Digital Solutions:

UNLOCKING FULL POTENTIAL WITH DATA & ANALYTICS

Digital solutions such as MTU Go! Manage offers fleet managers a user-friendly dashboard for monitoring and handling live data. And it connects you with your operators conveniently via MTU Go! Act to view new, pending and archived alerts, communicate with all involved experts, prioritize maintenance schedules, and use multigraph for remote troubleshooting.

▶ [LEARN MORE](#)



Service Network:

LOCAL SUPPORT. WORLDWIDE

The most important part of your power system isn't a part at all – it's your local service team. With more than 1,200 service locations worldwide – backed by regional Parts Logistics Centers in Europe, Asia and America – you can count on responsive support by expert technicians, wherever work takes you. To find your local service partner, visit www.mtu-solutions.com or contact us on email info@ps.rolls-royce.com or phone +65 6860 9669.