

The Power to Cruise

Cruise Ship Power Solutions



MAK™

CATERPILLAR®

The Power to Meet High Customer Expectations

Cruise ships and passenger vessels are the unchallenged sovereigns of the seas. These are the elegant, majestic, and mighty giants that cross the oceans. To ensure that passengers enjoy a luxurious lifestyle on board, these ships require propulsion that is powerful yet otherwise unnoticed. The top priority is an engine with low noise, vibration, and emission levels. Caterpillar® and MaK™ engines are the source for this quiet power.

Reliable heavy oil operation, low fuel and lubricating oil consumption, simple maintenance, and long overhaul intervals ensure economical operation. Long stroke, high-pressure injection and optimized combustion ensure that the IMO limits are securely met.

Keeping in mind the high reliability expectations of our customers, Caterpillar has adopted a two-step approach to providing the most effective solutions with lowest complexity.

The first step was to develop the new “Flexible Camshaft Technology” which ensures even less environmental impact from MaK cruise ship engines.

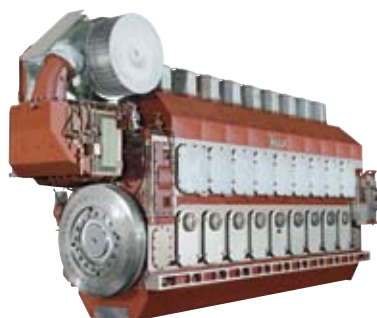
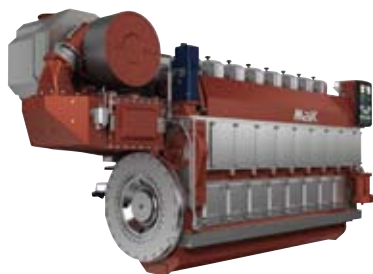
The next step involved migrating proven elements of ACERT™ Technology into the medium-speed marine product. The results are:

- Reduced emissions far beyond the current IMO regulations, offering an attractive technology for emissions sensitive areas
- Improved engine performance with the additional built-in flexibility and capability of the fuel and air systems
- Added flexibility to adjust performance and emission levels to the specific mode of operation
- Improved reliability in heavy fuel operation
- The ability to retrofit product upgrades so cruise operators can keep their investment up-to-date for future demands and requirements

You can rely on Caterpillar to deliver integrated solutions for whatever you need, wherever you are. To find out about Caterpillar and MaK engines, or to look for your nearest dealer and to access the Caterpillar network, go to www.cat.com/marine or www.mak-global.com. (MaK is a brand of the Cat® marine portfolio).



Power Solutions



3500 Auxiliary Engine

Number of cylinders	12 / 16	
Bore Ø	170	mm
Stroke	215	mm
Output	1,550 - 2,250	kW
Rated Speed	1800	rpm

M 20 C

Number of cylinders	6 / 8 / 9	
Bore Ø	200	mm
Stroke	300	mm
Output	1,020 - 1,710	kW
Rated speed	900 - 1,000	rpm

M 25

Number of cylinders	6 / 8 / 9	
Bore Ø	255	mm
Stroke	400	mm
Output	1,800 - 2,970	kW
Rated speed	720 - 750	rpm

M 32 C

Number of cylinders	6 / 8 / 9 / 12 / 16	
Bore Ø	320	mm
Stroke	480 / 420	mm
Output	2,880 - 8,000	kW
Rated speed	600 - 750	rpm

M 43 C

Number of cylinders	6 / 7 / 8 / 9 / 12 / 16	
Bore Ø	430	mm
Stroke	610	mm
Output	5,400 - 16,000	kW
Rated speed	500 - 514	rpm

Dedicated Customer Support for the Cruise Industry

Caterpillar Marine Power Systems has one simple goal: to exceed our cruise customers' expectations by providing outstanding worldwide sales and service support in a professional and consistent manner, addressing the needs of the global cruise market.

When you choose Caterpillar, you receive our commitment to provide comprehensive sales and service support for both Cat and MaK engine brands. Caterpillar Marine Power Systems has regional headquarters covering Europe, Africa, the Middle East, Asia Pacific, and the Americas, to work with our extensive global dealer network. We offer a full range of services from the project phase, through the sales process and product commissioning, to parts supply and parts logistics, maintenance, repair, and engine upgrade. Our experts are available to help you protect your investment, achieve maximum engine life, maintain reliability, and minimize downtime.

Caterpillar® dealers have a variety of solutions to help you minimize your owning and operating costs, including Customer Support Agreements and remanufactured products. All of these offerings are customized specifically for cruise vessel operation to provide the exact support you need to make the most of your investment.



Customer Support Agreements (CSAs)

A Customer Support Agreement (CSA) is one of the most convenient and affordable ways for you to take advantage of Caterpillar dealer resources. Each CSA is custom designed to meet your specific needs.

One of the most important advantages of a CSA is flexibility. There are no pre-determined requirements or specific products or services that you must agree to buy. Instead, every CSA is an individualized plan that fits your needs and your budget. Costs can be based on a flat rate monthly fee, the type of service or repairs performed, or actual engine operating hours.

CSAs cover many aspects of inspection, maintenance, and repair. These highly flexible agreements can range from scheduled inspections and preventive maintenance to overhauls. The services you include in your CSA will depend on your equipment, installation, and the technical capabilities of your crew — factors we will carefully analyze with you before an agreement is proposed. Every CSA has one primary goal: to save your valuable time and money.



Why Choose a CSA?

- Simplifies budgeting
- Improves asset and cash flow management
- Maximizes your return on investment
- Guarantees use of genuine parts
- Avoids need for workshop facilities and reduces employee training needs
- Eliminates need for costly diagnostic tools and parts inventory
- Permits convenient scheduling of service and maximizes availability
- Makes good business sense

Total Maintenance and Repair

A Total Maintenance and Repair (TM&R) agreement covers all maintenance and repair costs during a specified time period. Instead of paying for maintenance or repairs as they are needed, you pay one flat rate to cover a broad range of parts and services. Your Cat dealer will analyze your current costs and compare them with the cost of the specific services provided in the agreement.

Preventive Maintenance

A Preventive Maintenance (PM) agreement covers specified maintenance at a fixed cost. You maintain reliability and efficiency because the maintenance is performed by a highly skilled technician at a guaranteed cost. You avoid downtime because maintenance is performed on a defined schedule, where and when it's most convenient for you.

Engine Repair Options

If you identify a problem with your engine, your Caterpillar dealer can help you determine the best repair option to minimize downtime and return your engine to service as quickly as possible. The scope of repair options available from your Caterpillar dealer includes:

NEW — Cat and MaK engine parts are designed and manufactured to perform as a system, and be rebuilt for a second life, with processes that are continually improved to ensure state-of-the-art parts. Cat and MaK parts are built to exact tolerances and undergo rigid testing to ensure reliable performance, long life, and lower owning and operating cost.

REMANUFACTURED PARTS for Cat and MaK engines — provide same-as-new performance and reliability at fraction-of-new cost with the same warranty as new parts. The results are maximum engine productivity and lower life-cycle cost. Remanufacturing also is environmentally friendly as it limits waste to an absolute minimum.

STANDARD OVERHAUL — dealers offer comprehensive overhauls for MaK and Caterpillar engines. The dealer will offer the most cost effective solution using genuine new or remanufactured parts. Overhauls can also include available engine updates.

ENGINE UPGRADES — Specific solutions for upgrading Caterpillar and MaK engines to match tighter requirements or legislations, i.e. SOLAS or emission regulations, allow customers to continue to run their engines or to run them more efficiently or with lower emission levels, contributing to protecting the environment.

The latest required updates and optional performance enhancement upgrades could result in improved fuel consumption, reduced emissions, matching SOLAS requirements, and reduced owning and operating costs.

Genuine Parts

Caterpillar continually strives to improve component design and manufacturing. We understand that normal engine operation subjects components to extreme stresses and temperatures. Tests have consistently proven that the use of Cat and MaK parts instead of competitive parts greatly improves engine performance and reliability, and reduces overall owning and operating costs.



We Are Where You Are

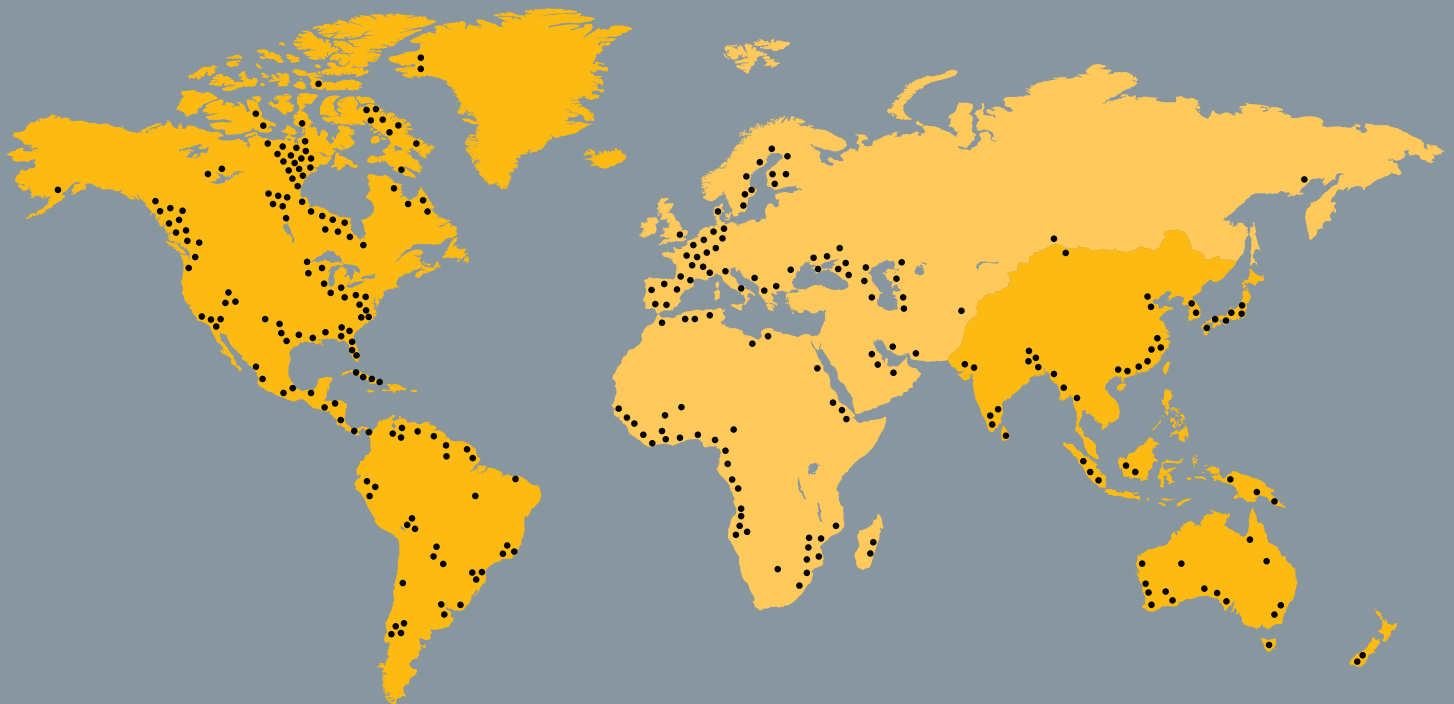
Our global dealer network makes you feel at home. You can count on personal support and experts who will serve you with dedication, experience, and know-how for your Cat and MaK engines.

The Caterpillar dealer network is the strongest around the world. With 182 locally owned businesses, 1700+ dealer branch stores and more than 100,000 employees, our worldwide dealer organization has the local expertise, specialists, and extensive spare parts inventory you'll need — no matter where you or your vessel sail around the world.

With the best service network in the industry, you are always connected with an expert. Our worldwide service network means you'll get the product support solution you need when you need it.

Wherever you are when you need support, simply call your local Cat or MaK dealer. To find your nearest dealer, visit:

**www.cat.com/marine or
www.mak-global.com**



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