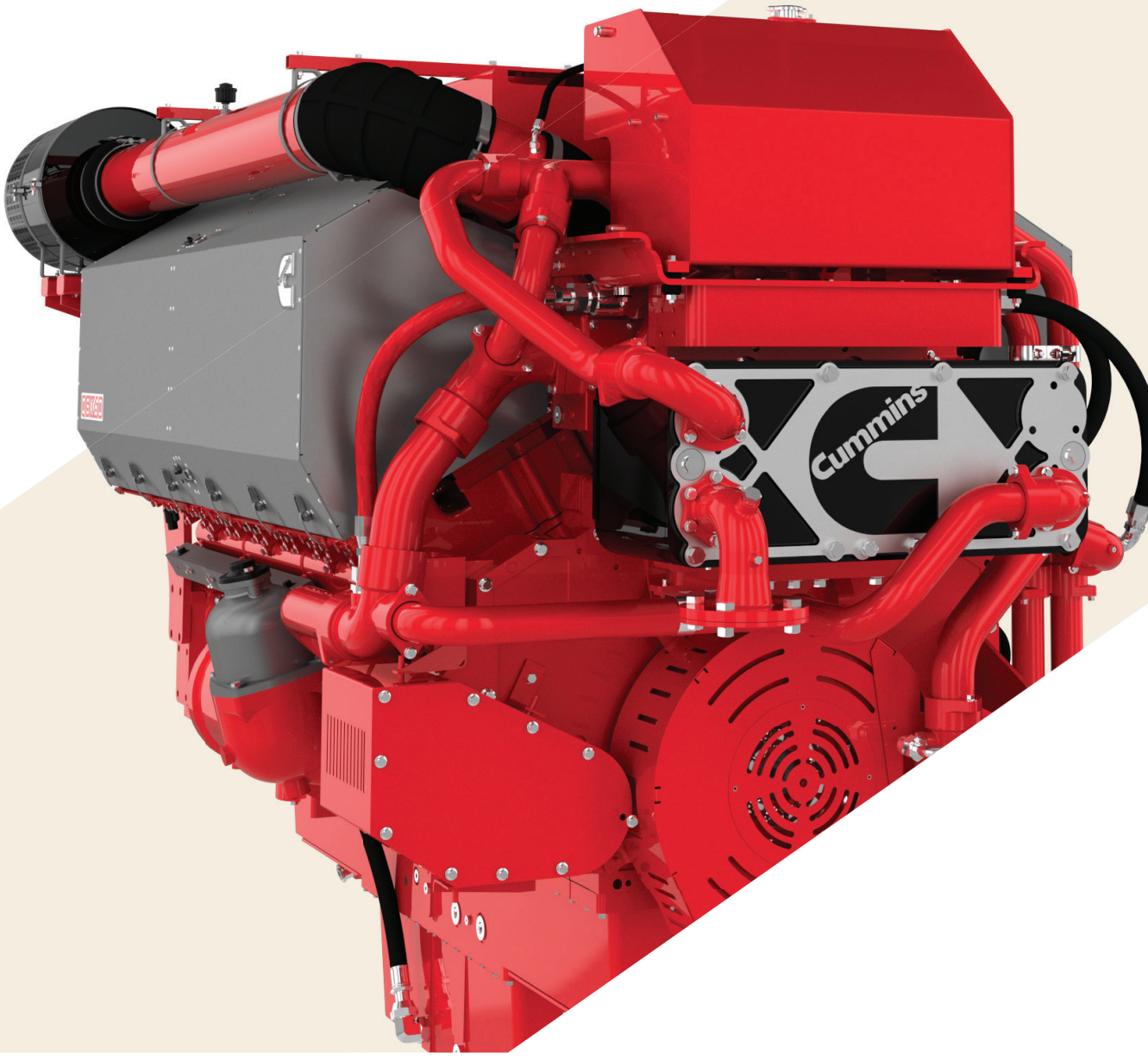
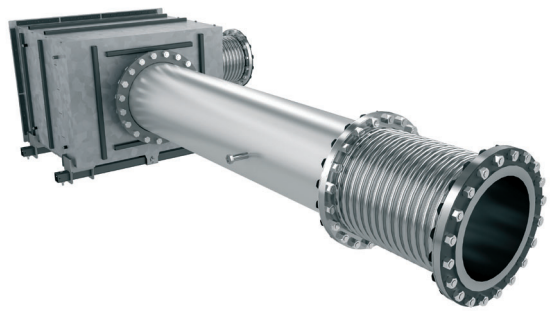
Taking proven technology to a new tier

Cummins IMO Tier III solution



Where expertise meets experience

No one has greater depth of knowledge about meeting emissions challenges than Cummins. We've been doing it for decades in almost every industry and with every type of equipment on earth. Cummins sets the bar through its combination of emissions technology experience and an immense commitment to diesel emissions R&D. We look at each situation from a full 360 degrees, examining all options and considering how they best meet the needs of each unique application. In the case of IMO Tier III regulations, we have optimized our solution for reliability and dependability while providing flexibility that minimizes DEF usage.



ONE SOLUTION FITS ALL

Regulatory emissions standards vary from region to region, a challenge for engine manufacturers, ship builders and their customers. As a result, manufacturers are forced to decide between reinventing the wheel (making wholesale engineering and manufacturing changes) in order to meet IMO III standards or making modifications to proven technology in order to meet new regulations.

Cummins is taking their proven dual-tier approach used for IMO II engine technology, adding a proven SCR catalyst and giving customers the flexibility to run at IMO III regulated levels when necessary and IMO II levels when permitted. Operators will even have the ability to switch between IMO II and III mid-journey. The ability to "pause" SCR functions minimizes DEF use and the associated costs while maintaining the high level of fuel efficiency that Cummins QSK19, QSK38, QSK50 and QSK60 engines are known to deliver.

Utilizing existing engine and aftertreatment technology provides the utmost reliability while minimizing downtime at a much lower initial cost than competitive solutions. But the benefits of relying on Cummins go much deeper than that.

Key benefits

OPTIMIZE YOUR SPACE

Cummins IMO III engines are set to run on 32.5% or 40% concentration of urea at the flip of a switch. The ability to switch between concentrations ensures that operators can adapt to varying operational needs and regulatory requirements, enhancing overall operational efficiency and compliance. Additionally, this flexibility allows for smaller DEF tanks and more efficient vessel design.

INCREASED DEPENDABILITY

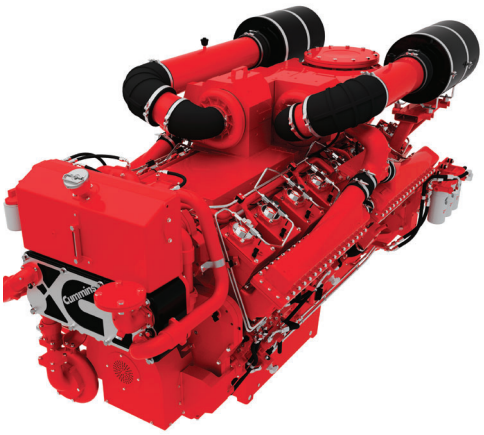
The aftertreatment system used with Cummins high-horsepower marine engines allows operation with high-sulfur fuel (1,000 ppm or less). This tolerance ensures reliable operation in diverse fuel conditions, reducing the risk of downtime and unexpected maintenance. This durability translates to fewer interruptions and a longer-lasting engine, giving you confidence in any operating environment.

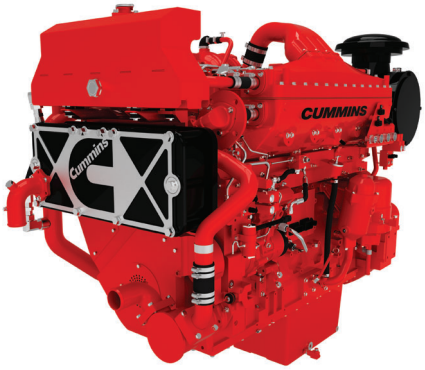
IMPROVED TOTAL COST OF OWNERSHIP

Our engines are designed for efficiency, consuming less DEF while maintaining top performance. Lower DEF usage means reduced operating costs over time, improving your total cost of ownership (TCO) and keeping your business more profitable.

FUEL FLEXIBILITY

Cummins IMO III engines are designed to operate efficiently with a variety of fuels, including Marine Diesel (D1, D2, DMA), Biodiesel (B7), and Hydrotreated Vegetable Oil (HVO, R100). This versatility ensures that operators can choose the most suitable fuel for their needs, enhancing operational flexibility and sustainability.





MULTIPLE CONFIGURATIONS FOR EASIER INSTALLATION

The aftertreatment system used with these engines has multiple SCR housing configuration options, so it can be positioned to fit the space and provide technicians with ready access to the service panel.

PERFORMANCE ON DISPLAY

As the manufacturer of record, Cummins has the responsibility to deliver a certified system that meets IMO III regulatory requirements. Your Cummins engine and aftertreatment system are integrated, controlled and monitored through an electronic interface which displays system out NOx and NOx conversion efficiency on a monitor for your captain to review and for surveyors to examine on your vessel, making this as quick and painless as possible.

PROPULSION AND AUXILIARY POWER

Life is simpler when you can get all your power needs from a single source. Cummins offers a full range of solutions for both propulsion and auxiliary application needs on your vessels.

First fit or retrofit

Lowering NOx emissions is more than just an environmental issue. It bolsters the image of marine customers as "green" firms, concerned with protecting air quality for future generations. Because of how Cummins solution has been designed, vessels using Cummins IMO II QSK19, QSK38, QSK50 and QSK60 engines can be easily retrofitted to achieve 2g/kW NOx output levels.

SERVICING AT SEA

Our engines are designed to keep your operations running smoothly with minimal downtime and lower maintenance costs. Unlike traditional engines that require a costly mid-life overhaul, our solution only calls for injector replacement at around 12,000 hours—saving you time and money. With a full overhaul typically needed at 24,000+ hours, avoiding a mid-life rebuild means fewer parts to replace and less disruption to your business. This streamlined approach maximizes efficiency, reduces expenses, and keeps your fleet performing at its best.

Additionally, the Cummins SCR aftertreatment system features a modular design with multiple "bricks" that can be swapped out individually. A single onboard maintenance technician can easily gain access by removing a few bolts from the panel, rather than replacing the entire box. This time-efficient and cost-efficient approach requires no special oils, and maintenance intervals are set so that necessary work can be completed in a single service event using standard service tools and procedures. This system simply makes more sense, further enhancing the efficiency and cost-effectiveness of your operations.

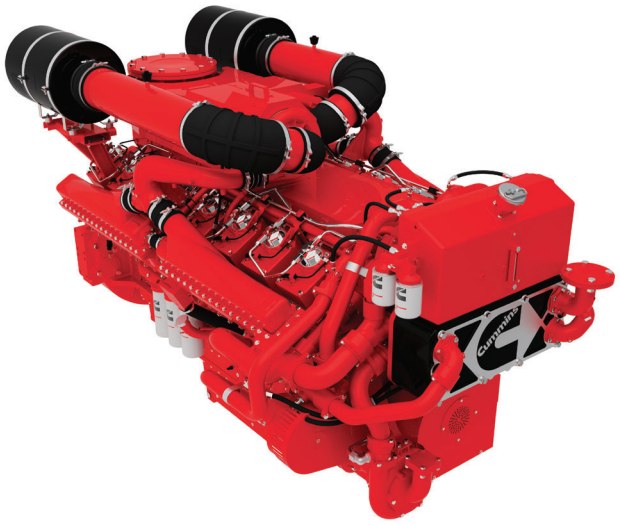
SUPPORT IN EVERY PORT

One of the great advantages of choosing Cummins marine engines is our global service and support network, which is unmatched in the industry. Factory-trained technicians and Genuine Cummins new and ReCon® parts are readily available in every major port everywhere around the globe.

CONFIDENCE IN WRITING

Engines and aftertreatment systems carry a full warranty backed by the strength of the Cummins service and support network. It covers your vessel for up to the life-to-overhaul of your engine depending on duty cycle.

To learn more visit cummins.tech/imo.



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