Systems Solutions

Combined Propulsion Systems

In some cases, combined systems with several diesel engines or hybrid propulsion systems are the preferred propulsion systems for commercial vessels. With our long-time expertise, we engineer the propulsion systems for your specific application. All the components – engines, gas turbines, gearboxes, automation and accessories – come from one source and are combined into an integrated complete system.

Four diesel engines power two controllable pitch propellers (CPP) via four main gearboxes (two for each side). Adapted to each operation mode, the vessel can always be operated in the most economic way – either with two or four engines.

The propulsion system is controlled by the automation and control system.
In addition to the main engines, onboard power is also supplied by the gensets.

Noise Reduction Technologies

Reducing noises. Raising comfort.

Squaring the circle
The reduction of sounds and vibrations that are inevitably caused by engines, pumps, and propellers in operation is something that is requested for different reasons. On the one hand, certain special ships require the sound which is propagated into the water to be reduced to a bare minimum. On the other hand, everyone wants to have the least amount of stress possible while working on board, including stress caused by noise.

With well-engineered concepts for noise reduction on board, MTU has a number of possibilities at its disposal to fulfill both the desire for more power and the need for optimum comfort. Running at over 2000 rpm, MTU engines are perfectly suited for implementing noise-reducing measures. For this purpose, we offer both standard systems as well as complex customized solutions.

Standard mounting concepts
Significant noise reduction can be achieved with our standard mounting systems. Generally speaking, all MTU marine engines are elastically mounted. Here are some typical configurations:
– Flange mounted gearbox, resilient mounts
– Freestanding gearbox; rigid or resilient
– Suitable coupling systems

Customized mounting concepts
For higher acoustic demands, MTU offers complex systems that are customized for the respective vessel in order to fit the needs of the owner. Our proven systems make use of state-of-the-art technologies, utilize special concepts, and incorporate acoustic improvements:

– With the **double elastic mounting system**, the soundproof engine sits elastically on a frame that is also elastic-mounted. This leads to significantly less structure-borne noise being passed into the ship's structure as is the case with single elastic mounts.

– **The innovative active mounting system** combines and complements proven high-quality conventional mounting technologies with special active elements derived from the automobile and aerospace industries. The active element contains the actuators and sensors required for noise reduction. The adjustment and control electronics which are optimized accordingly works on a stand-alone basis that is set up separately.

– Integrating the entire engine into a **sound-reducing capsule** also reduces airborne noise.

Photo courtesy of Wasser- und Schifffahrtsamt Stralsund