



# Fuel supply system upgrades

passenger ships | cruise ships | ferries

**LOW SULPHUR FUEL COMPATIBILITY**

**FUEL CHANGEOVERS**

**OFF-SCRUBBER OPERATION**

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# Can your vessel benefit from a fuel supply system upgrade?

## **A changing operational environment**

Passenger and cruise ships set the highest standards when it comes to safety, reliability and operational efficiency.

The passenger ships usually operate in urban areas with strict environmental regulations and especially for the cruise ships the popular destinations are often in environmentally vulnerable areas. Therefore all opportunities for environmentally-friendly operation must be explored. Due to the nature of destinations, also fuel changeover systems for low-sulphur content fuels are necessary.

The sailing schedules have been calculated carefully to yield the maximum income for the ship investment and all delays are costly. There is no room for delays related to the operation of fuel systems.

## **Guaranteed safety for any choice of fuels**

Your ship's main and auxiliary engines may originally have been designed to run on fuels, the properties of which differ from the fuels that are favoured today due to the new regulations. Maintaining the correct fuel viscosity, temperature and pressure at the engine inlet is crucial regardless of the fuel in use or the complexity of a particular fuel supply system.

Injection pressure losses caused by too low a viscosity may result in difficulties during start-up and low-load operations. Further, the usage of different non-compatible fuels without a proper control may lead to unstable fuel supply. Auramarine's fuel supply system experts are committed to come up with customer-specific solutions to avoid these problems.

To ensure a smooth start-up of the engines after port call where cold ironing has been applied, you can benefit from Auramarine's HT water preheating units that keep the right fuel temperature.

## Methanol supply unit as retrofit



Auramarine's methanol fuel supply unit is designed based on the technical capabilities of our advanced fuel supply management systems. On this solid foundation, we have built expert knowledge about methanol fuel system requirements in dialogue with leading engine makers and ship owners. Auramarine's methanol fuel supply unit is suitable for both two-stroke and four-stroke engines. The design can be optimised for the exact space available and pre-tested units shorten installation and commissioning times.

It is also important to remember that the engine will need a pilot fuel system for methanol operations. Auramarine has extensive experience of pilot fuel systems for LNG, and extends this knowledge to methanol supply.

### What if you need a backup for scrubbers?

In case of a scrubber malfunction, scrubber maintenance, or any other situation where the scrubber operation becomes impossible and you must use scrubber by-pass, you need to keep your ship going by switching to another type of fuel.

That is where a Auramarine MGO/MDO fuel supply system offers redundancy and operational safety by enabling the engine operation by switching to low sulphur fuel supply. Costly delays, often comprising reporting and contacts with authorities in case of unintentional emissions can be avoided.

Auramarine delivers customised systems designed in a way allowing fast adaptation to any existing fuel handling system on board, thus minimising layoff time. A suitable combination of the components can be tailor-made for your vessel considering your operation profile, routes, space limitations and engine room arrangement.

## Typical Auramarine equipment for passenger ships, ferries and cruise liners:

- HFO/MGO/MDO fuel supply units
- Fuel changeover systems
- Pilot fuel systems
- Emergency pump units
- MGO Cooling and chilling units
- HT-water preheating units

## Flow meter upgrades help you get more accurate data



Modern flowmeters provide accurate data of your actual fuel consumption to support your reporting and operations, so you may have considered replacing any outdated flowmeters with modern ones. But how to find the optimised solution with minimised piping and be confident of a well-working integration to the existing system?

Auramarine can provide a flowmeters retrofit including the eventually needed design and modifications to ensure that the new flowmeters fit your system, that the amount of piping is minimised and that the available space is used smartly. Whether your scope is large or small, with a full Auramarine flowmeter retrofit you can be sure that the flowmeters fit your fuel system.

“ A fuel supply system upgrade pays off to avoid any operational risks.

A variety of options exists to meet the demanding emissions regulations and Auramarine is at your service to find the safest and most efficient fuel supply solution for your ship or fleet.”

Contact us  
for more  
information:



**Auramarine is your trusted fuel systems expert for marine and power industry. Our proud heritage stems from the founding of the company in Finland in the early 1970's. Since then we have delivered over 15 000 robust and reliable auxiliary systems to our customers all over the world, continuously aiming for superior service and customer value.**

**WE ARE THE PIONEERS IN FUEL SYSTEMS.**

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