



***MGO cooling system.
The easiest low
sulphur solution.***



Auramarine Marine Gas Oil (MGO) cooling system

Marine traffic moves towards lower sulphur emissions. Auramarine has the solution. Auramarine has superior experience in ship fuel systems and can offer fast, reliable and affordable service when switching to low sulphur fuel is needed.

Take the first step towards low sulphur fuels

Auramarine Ltd has been the world's leading manufacturer of fuel oil supply systems for ships for over 30 years. With over 10,000 skid mounted auxiliary units produced, Auramarine has superior experience in ship fuel systems and can offer fast, reliable and affordable service when switching to low sulphur fuel is needed. Auramarine's solution includes the planning, required technical equipment and alteration work. If the customer so wishes, the whole process can be carried out on turn-key basis.

Shipyards utilise technical arrangements to ensure the protection of the environment. Luckily the aim of lower sulphur emissions can be reached through relatively small changes in the engine room. The changeover to using Marine Gas Oil requires expertise in fuel systems, so that well-intentioned changes do not place the durability of the engines or maritime safety in jeopardy.

Ship engines are different and vary in their capacity to use the low sulphur Marine Gas Oil. In principle, MGO is suitable for any engine, provided that the modifications are made correctly.



Close to you all over the world

Auramarine has two extensive spare part facilities: one in Europe and the other in Asia. In addition to that, we have representatives in 30 other countries, so customer support and service is always nearby.

Ensuring lubrication: number one priority

Because of the lower viscosity of Marine Gas Oil, the lubrication requirements of the engine manufacturer may not be met. In most marine diesel engines, the viscosity of the fuel needs to be at least 2.0 cSt. At normal temperature, the viscosity of MGO varies between 1-2 cSt, which means that sufficient engine lubrication can no longer be guaranteed. The viscosity can be improved with additives, but this is relatively costly. However, there is a much more affordable way of ensuring proper lubrication and sufficient viscosity.

Auramarine MGO cooling system

The solution offered by Auramarine is simple and reliable. Auramarine MGO cooling system chills Marine Gas Oil even below 20 degrees Celsius, so that the viscosity and lubricity meet the requirements of the engine manufacturers. For the cooling of the MGO, Auramarine uses a system consisting of a Chilling unit and an MGO Cooler unit.

Stages of the alteration process

The complete process has to include a report on the starting conditions, an inspection of the existing equipment and the alteration work. As a turnkey supplier, Auramarine can assume responsibility for the proper follow-through of all these stages.

The benefits of Auramarine's MGO solution in a nutshell

- Auramarine's MGO solutions can be applied to both old and new ships.
- The units of Auramarine's MGO system can be installed relatively freely, utilising the free space onboard. On the other hand, the units can be formed into an integrated compact configuration.
- Auramarine delivers the MGO solutions also on a turn-key basis.
- Auramarine's MGO configuration consists of the best components that have been proven effective and durable.
- MGO solution is reliable and easy to use.
- Auramarine has a global maintenance network and a spare parts service that serves our customers 24/7.

Standard Combi Chiller units (with integrated water circulation pumps)

Model name	Chilling power	Compressors	Evap./ Cond. Temp.	Refrigerant
Combi Chiller Unit CC60-LT/SW	60 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC75-LT/SW	75 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC90-LT/SW	90 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC110-LT/SW	110 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC135-LT/SW	135 kW	3 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC155-LT/SW	155 kW	3 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC175-LT/SW	175 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC200-LT/SW	200 kW	2 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC250-LT/SW	250 kW	3 pcs, piston type	0°C/45°C	R404a/R507a
Combi Chiller Unit CC300-LT/SW	300 kW	3 pcs, piston type	0°C/45°C	R404a/R507a



Certified quality

The high quality of Auramarine operations is guaranteed by ISO 9001, ISO 14001 and ISO 3834-2 certificates.



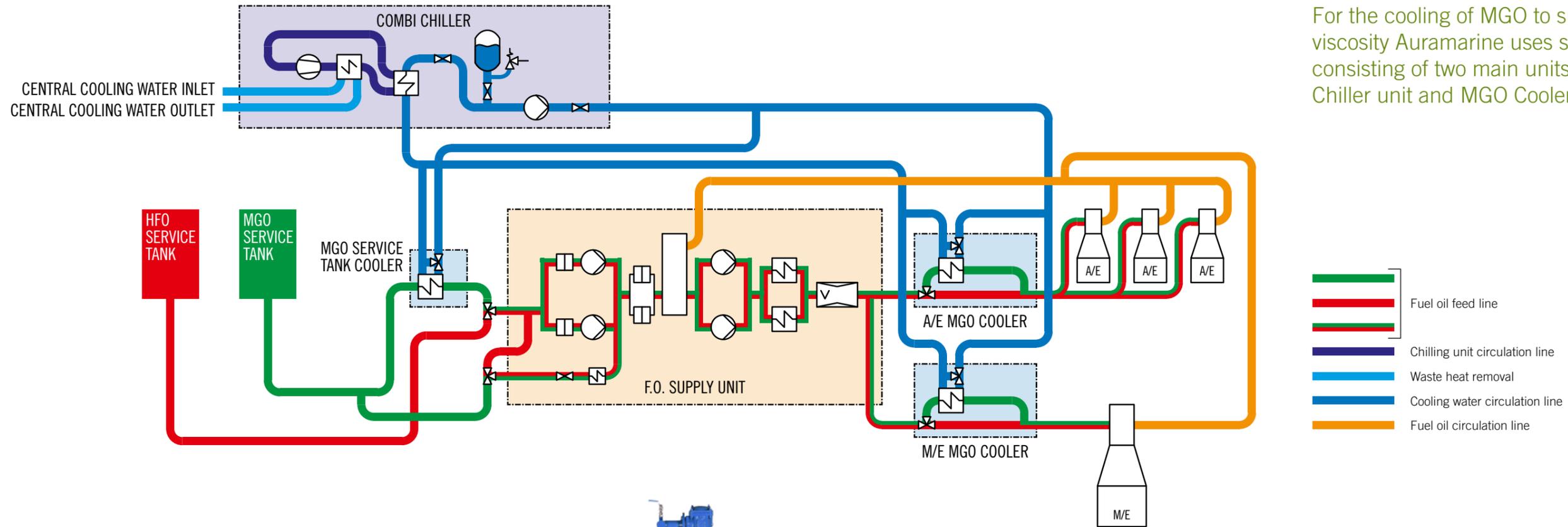
24/7

In case of emergency, call our Emergency service number. It is open 24 h a day. Dial +358 20 486 6003.

We have strong expertise in fuel system configurations. This is why we know the best and safest way to integrate the MGO solutions to existing configurations.



Auramarine MGO Units and operating principle



For the cooling of MGO to sufficient viscosity Auramarine uses system consisting of two main units: the Combi Chiller unit and MGO Cooler unit.



MGO Combi Chiller

A complete unit for the cooling of fresh water in the MGO cooling water circuit. The unit consists of a compressor, a condenser, an evaporator, filters, a control panel and all necessary valves and fittings for operation.

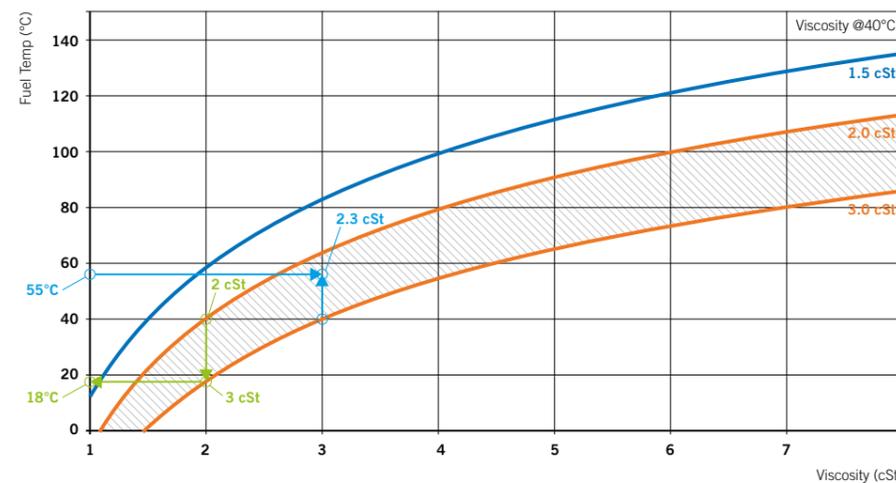


MGO Cooler Units

The purpose of the unit is to keep the viscosity of the MGO suitable for the engine. The unit contains a cooler, a viscosity sensor (range 0-10 cSt)*, a three way control valve on the water side for cooling control, a temperature transmitter on the MGO outlet line for mA signal to ECR and all necessary valves and fittings for operation.

* option

Fuel Temperature vs Viscosity



Depending on installation the viscosity of MGO should be min. 2-3 cSt when entering the engines.

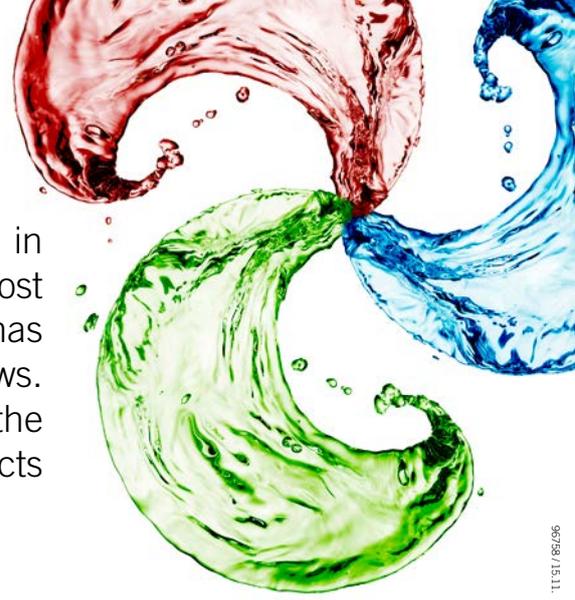
Example 1

When MGO 2 cSt @40°C is used and 3 cSt viscosity is required the temperature is to be approximately 18°C.

Example 2

MGO with viscosity of 3 cSt @40°C is entering the engines at 55°C. According to curves the viscosity is then between 2 and 3 cSt; approximately 2.3 cSt.

Auramarine has more than 30 years of experience in fuel supply units. As the world's most popular and most used HFO solution manufacturer, the company has accumulated wide-ranging experience in liquid flows. This experience and know-how is now being used in the development of new environmentally-friendly products such as the MGO cooling system.



TT151/86/96

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