

Technical Bulletin for Aalborg boilers



Using compliant fuels with Alfa Laval Aalborg boilers and third-party burners

Prior to 2010, Alfa Laval (at the time Aalborg Industries) supplied boilers with a simple fuel line system, the Original Fuel Line System, that was not designed for MGO operation. Additionally, all fuel changeover procedures were conducted manually. Fuel oil systems were designed to use HFO as the primary fuel, with MDO used solely during start-up and not for continuous operation. In cases where project requirements mandated the use of third-party burners, the same philosophy was employed.



Since 2010, enhanced fuel line systems have been the standard design in all Alfa Laval Aalborg boiler projects. The change was a response to IMO’s announcement of regulations restricting fuel sulphur content to 0.1% in Emission Control Areas (ECAs), which prompted the use of MGO within those ECAs. Although projects with third-party burners were encompassed by the new philosophy, there are cases where project-specific requirements have necessitated deliveries with the older design.

Meeting today’s sulphur cap requirements

To comply with today’s IMO global sulphur cap, boilers need to operate on compliant fuel if they are not connected to an exhaust gas cleaning system. Alfa Laval recommendations for the fuel line system depend on the vessel’s fuel strategy, as shown in the following table.

Most vessels supplied with an Original Fuel Line System prior to 2010 have since upgraded to a Single-Line or Double-Line Fuel System in order to meet the safety level required for MGO operation. However, vessels without any ECA trade were not impacted by the 2010 announcement – and thus did not have to upgrade their original systems. Furthermore, while the development of compliant systems is prioritized, upgrade solutions have not been possible to implement on all third-party burner systems used with Alfa Laval Aalborg boilers, due to reasons beyond Alfa Laval’s control.

The remainder of this paper applies to vessels that intend to use compliant fuel with Alfa Laval Aalborg boilers equipped with third-party burners and Original Fuel Line Systems. If you are uncertain which fuel line system your boiler has, please contact your local Alfa Laval office.

Operation on MGO

The Original Fuel Line System is not MGO-compliant. Alfa Laval’s recommendation for using MGO is to upgrade to an MGO-compliant solution, i.e. a Single-Line or Double-Line Fuel System. However, for some third-party burner systems supplied in the past there is no upgrade solution available.

For systems with no existing upgrade solution, we recommend carrying out a plant risk assessment using one of our HAZID scheme documents. We have prepared these documents for use as guidance before introducing MGO into an Original Fuel Line System intended to operate on HFO. The documents are burner-specific and available on demand.

Based on the risk assessment, updated operating procedures must be implemented for safe operation on MGO. Please note, however, that this places higher responsibility on the crew to monitor boiler operation when using lighter fuels.

Operation on VLSFO (0.5% sulphur)

We have seen that compliant fuel introduced into the market as very-low-sulphur fuel oil (VLSFO, 0.5%) has a much lower specified viscosity compared to traditional high-sulphur fuel oil (HSFO, 3.5% sulphur). VLSFO differs from HSFO when it comes to density, pour point and cat fine levels, and its properties vary significantly depending on the fuel supplier, the grade supplied and the port of acquisition. Certain considerations are therefore necessary before using VLSFO with boilers.

For more information on the challenges and general Alfa Laval recommendations, please refer to our technical paper regarding the use of VLSFO on Original Fuel Line Systems.

		Fuel line system		
		Original Fuel Line System	Single-Line Fuel System	Double-Line Fuel System
Fuel strategy	Two fuels (1 ECA+ 1 global)	MGO and VLSFO	Not recommended	Operational constraints to be considered prior to implementation
	One fuel (ECA or global)	MGO only	Not recommended	Recommended
		VLSFO or ULSFO only	Operational constraints to be considered prior to implementation	Recommended

Please refer our solution overview paper "Preparing your boilers for compliant fuel" for more information.

● Recommended
● Operational constraints to be considered prior to implementation
● Not recommended

How to contact Alfa Laval **100002809-1-EN 2009**

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

Alfa Laval reserves the right to change specifications without prior notification.