

# Alfa Laval Gas Combustion Unit

## Safe, reliable regulation of LNG cargo tank pressure

With its simple and reliable design, the Alfa Laval Gas Combustion Unit (GCU) has become a central component of boil-off gas management on LNG carriers (LNGCs) and floating storage regasification units (FSRUs). The GCU 2.0 builds on a proven track record, offering original simplicity made even smarter.

### Application

Specifically designed for LNGC and FSRU needs, the GCU 2.0 is used to regulate cargo tank pressure. It removes the surplus boil-off gas (BOG) that cannot be utilized in the engines or boilers, safely combusting the natural gas vapour. Stable in operation and easily maintained at low cost, the unit can even be designed to work in Arctic conditions – handling temperatures down to  $-52^{\circ}\text{C}$ .

### Benefits

- Proven, reliable solution built on a long track record
- Simple design – a perfect balance between compact and safe
- Extended lifetime thanks to new combustion chamber design and elevated burner
- Worldwide service and support
- Connectivity solution enabling access to live data for remote monitoring and support

### Design

Built on the principle that a simple design is the most reliable and safe, the GCU 2.0 is robust in construction. Its fully metallic combustion chamber eliminates the risk of cracking, and the minimal number of moving parts reduces the risk of wear and downtime.

The combustion chamber provides an optimal flow distribution of combustion and dilution air, which combines with the burner design to produce a stable flame. Lit by electrical igniters, the burner is optimized to decrease the surrounding temperature and ensure high gas velocity. The burner is also elevated, which ensures that sufficient air is introduced at its bottom, and air circulation caps in the burner plate's outer ring further improve air distribution and mixture.

In total, these design features ensure steady combustion at a reasonable temperature. The result is extended burner lifetime and reduced distortion of the burner plate.



### Control

The GCU 2.0 makes use of the same reliable Alfa Laval Touch Control system as other Alfa Laval equipment on board. The recognizable touch panel and user-friendly interface offer the crew convenience and easy operation. In addition, the control system is prepared for connectivity, provided through Alfa Laval Digital Services for Gas Combustion Units.

### Maintenance

The GCU 2.0 has a limited number of components, which reduces the need for maintenance. Spare parts are designed in a way that makes them easy to replace.

### Equipment

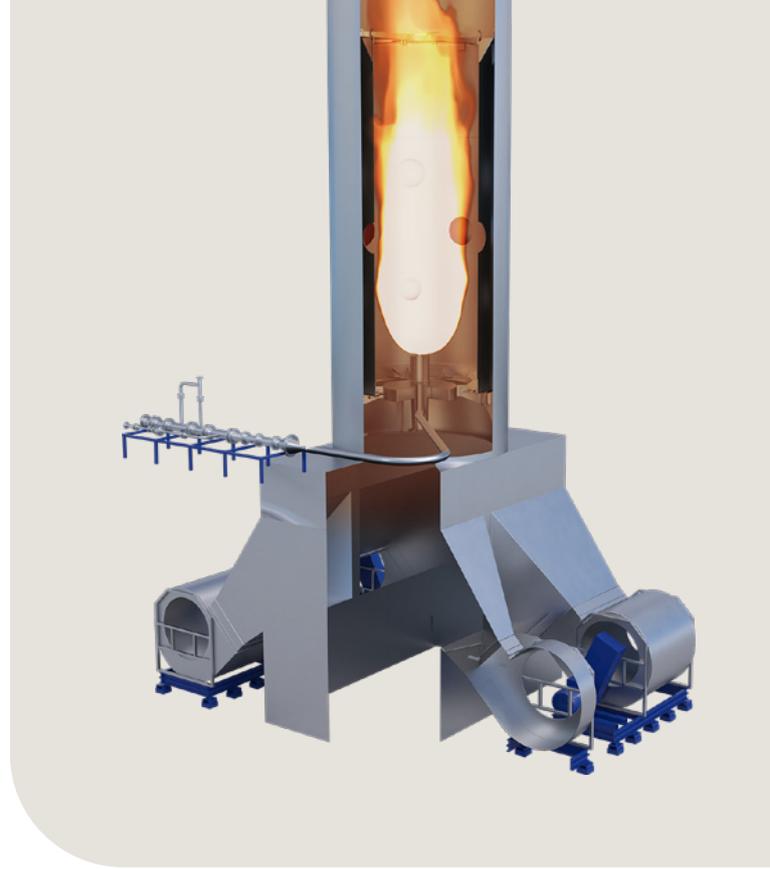
- Combined combustion-dilution air fans
- Air chamber
- Gas valve train
- Induct burner with spark igniters
- Self-checking flame detection system
- Combustion chamber
- Exhaust gas stack
- Connectivity-ready control system

### Certifications

The GCU 2.0 is compliant with the requirements of all major classification societies.

### GCU 2.0 range and technical data

Unit design	Unit capacity	Airflow
Single combustion chamber	1000–3000 kg/h	305,000 m <sup>3</sup> /h
Single combustion chamber	3000–4500 kg/h	458,000 m <sup>3</sup> /h
Dual combustion chamber	4500–6000 kg/h	610,000 m <sup>3</sup> /h
Dual combustion chamber	6000–9000 kg/h	916,000 m <sup>3</sup> /h



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