

Hydraulic emergency shut-off system

for pressurised liquefied gas storage tanks



The hydraulic emergency shut-off system for pressurized liquefied gas storage tanks is designed to provide rapid shut down in case of emergency arising from fire or line damage. The system is suitable for LPG, chemicals, and ammonia. Our offering is complete with project management, field service and lifecycle support.

In close co-operation with leading gas companies, new technologies have been developed and extensively tested for endurance, accuracy, and reliability in the harsh environments associated with liquid gas storage. Our emergency shut-off valve systems are installed worldwide to help protect personnel, the environment, equipment, and the product itself.

If your product is LPG or ammonia, Wärtsilä Tank Control Systems can provide an application specific solution for your business needs. Our network of sales offices, application specialists, service facilities, and our training centre in France provide local support to customers in key locations worldwide.

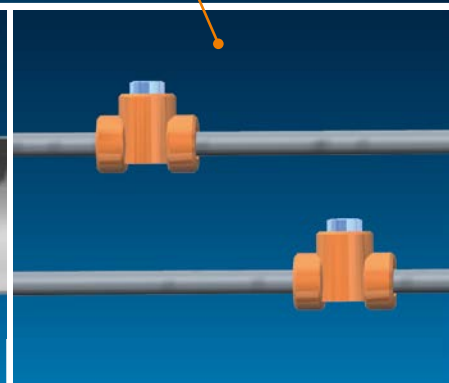
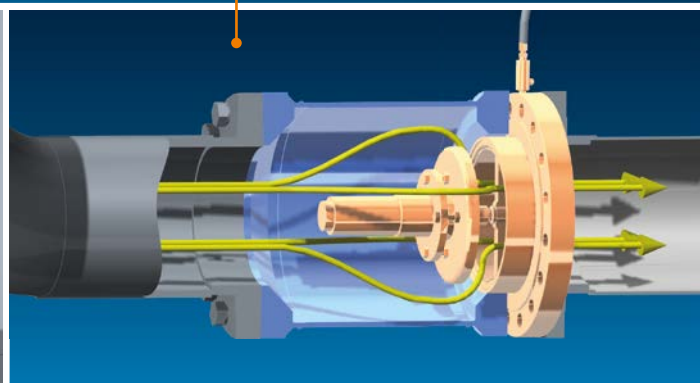
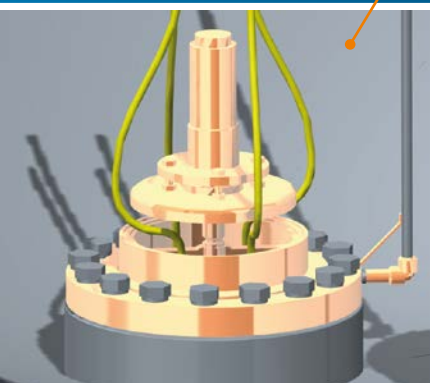
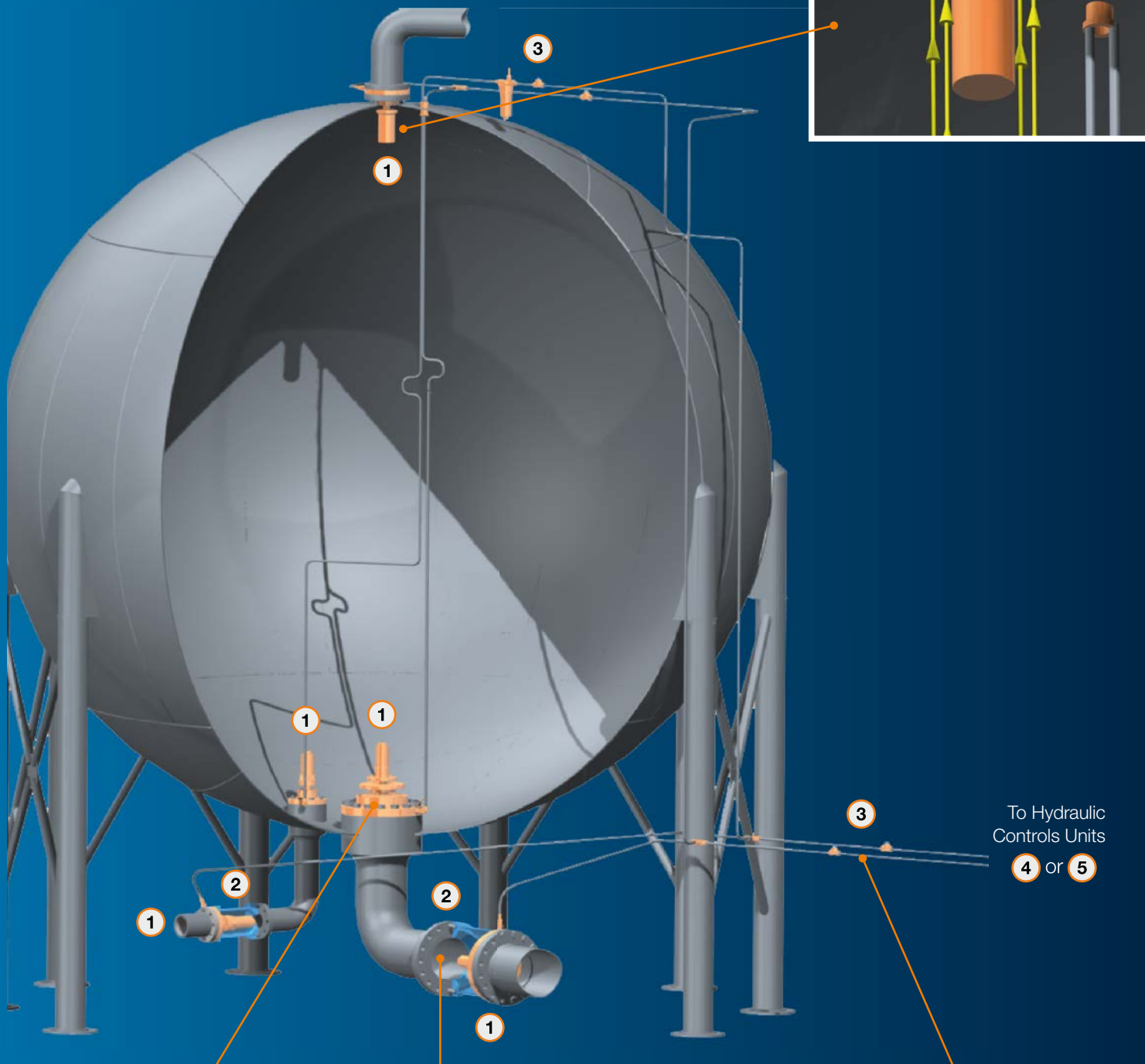
Industry leader in liquefied gas storage emergency shut-off systems

Since the earliest days of liquid gas storage, Wärtsilä Tank Control Systems (formerly known as WHESSOE SA) has been developing cutting edge technologies that increase the safety of LPG storage.

- Complete offering
- Project management
- Field service
- Lifecycle support



Our emergency shut-off system



1 06139-FS / 06240-FS Emergency Shut-off Valve (ESV)

This range of fail safe, remote operated valves provides rapid shut down in case of emergency or fire. It is particularly recommended to safeguard storage tanks and loading facilities handling liquefied gases and chemicals.

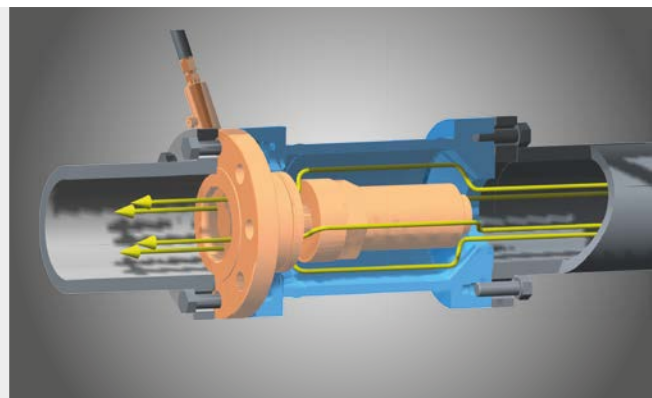
- Designed according to ASME VIII Div 1 & 2
- Service temperature range: -45°C to +85°C
- Maximum working pressure: 30 bar
- Standard flange 300 lbs according to ANSI B16.5
- Compliant to PED directive 2014/68/EU
- Fire Safe Design as per ISO 10497:2010 and API 607



2 06060 In-line housing

Line housings are available for installation of ESV in pipe lines or manifolds. Cap screws are supplied as standard to facilitate removal from line or manifold installations.

- Designed according to ASME VIII Div 1
- Service temperature range: -40°C to +85°C
- Maximum working pressure: 30 bar
- Standard connection flange 300 lbs according to ANSI B16.5



3 Fusible plugs

When mounted with the connection flange outside the tank (external mounting), each valve is supplied with its own fusible plug and oil strainer assembly.

Fusible plugs are fitted at intervals in the hydraulic lines and are designed to melt at 96°C. In the event of fire, all valves actuated by that line will close.



4 05999 Compact Hydraulic Control Unit

Our 05999 control board is designed to operate up to 5 hydraulic lines, all integrated in a very compact design whichever the option is selected, enabling fast delivery and cost effective solution. It is a fully modular and easy to maintain concept.

The frame, oil tank, pipework and fittings/couplings are all made of stainless steel for durability.

- Compliant for use in ATEX zone 2.
- Upgrade in ATEX zone 1 available on request.



5 06999 Customized Hydraulic Control Unit

When large LPG installations require large number of hydraulic operating lines or when specific options are specified in a project, our experienced experts are able to design and manufacture hydraulic control panels on demand.

A wide range of options is available, including: Closed enclosure with doors, pneumatic control system, pressure sensors and switches, redundant electrical pumps, electrical enclosures including lamps and push buttons, fans, and more on request.





How does the emergency shut-off valve work?

All Wärtsilä hydraulic emergency safety shut-off valves have been designed to provide rapid shut down in case of emergency arising from fire or line damage. Thus loss of valuable assets is avoided and the risk of contributing to an existing fire is minimised.

In a normal installation the hydraulic valve is mounted in the discharge opening of the tank and except for its heavy steel flange is entirely within the tank. A fully internal mounting is possible, removing the exposure to a fire and thus further increasing the safety of the system.

When installation of a hydraulic valve in a pipeline is desired, the valve is first enclosed with a line housing and the assembly is then inserted between mating flanges in the line, the valve base flange being sandwiched between the line and the line housing flanges as in a normal tank installation.

A valve is normally held shut by an integral spring and only opens when hydraulic pressure is applied by means of a hydraulic control unit, either 05999 compact board or 06999 customized control panel.

Since the valve is held opened solely by hydraulic pressure during a discharge operation, release of this pressure at any point in the hydraulic system will automatically close the valve and shut off any further flow through the valve.

This can be achieved by means of fusible plugs sighted at strategic points in the hydraulic system. As the hydraulic tubing may take any course from the valve to the operator, there should be a fusible plug at any potentially hazardous point in the tubing.

Hydraulic lines may also include release cocks or other pressure relieving devices either manual or automatic for added safety.

The valves come in standard sizes ranging from 2 to 14 inches. All valves are designed according to ASME VIII Div 1&2 and are compliant to 2014/69/EU High Pressure Equipment directive and to ISO 10497:2010 and API 607 Fire Safe approvals.

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www.wartsila.com/lpg-emergency-shut-off-systems

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