



BUTTERFLY VALVES FOR EXTREME CONDITIONS

...with confidence





COMPANY PROFILE



KLINGER Westad AS is a leading supplier of high performance valves for ships and offshore installations and the oil, gas, chemical and mining industries. The core of KLINGER Westad's business philosophy is to design, manufacture and sell high quality products at competitive prices to demanding clients.

The management is committed to keep the company at the front by carefully monitoring the changes in market requirements; emphasising innovation and performance as requisites to success.

Every staff member accounts for high standards in business ethics and proper workmanship in management, production and services, and seeks to meet with the expectations of the client at all times.

KLINGER Westad products represent accountability and confidence through their qualities and characteristics, and are catered for by an international support network.

The KLINGER Group of Independent Companies was founded in 1886 by Richard Klinger. Driven by challenges associated with glass tube indicators on steam engines he filed an early patent for a reflection level gauge, soon followed by innovations of compressed fibre gaskets and piston valves. Already at that time, the KLINGER brand was built on solutions for the most demanding industries.

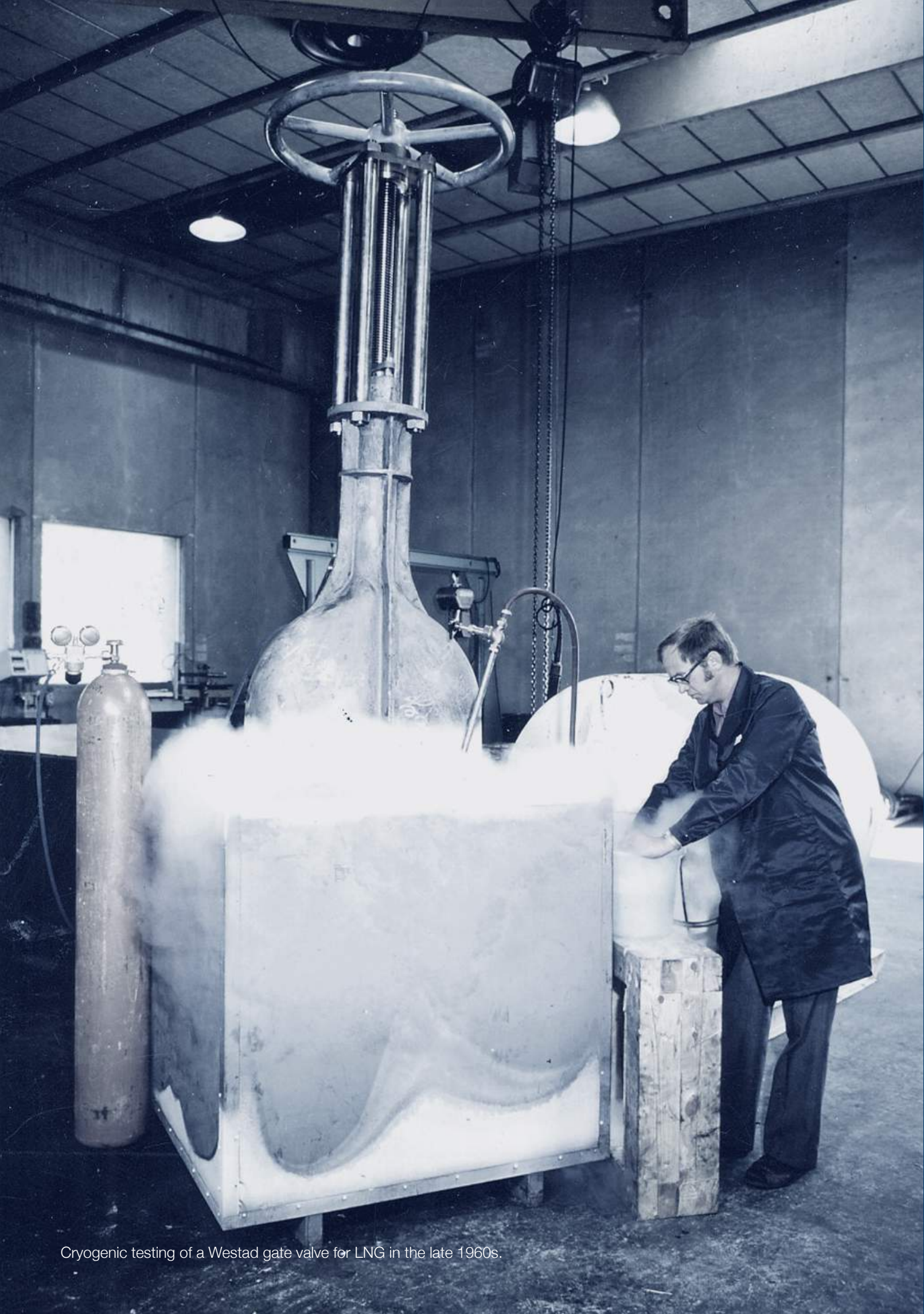
Today, the KLINGER group is recognized as reliable partner for global Sealing and Fluid Control solutions, employing over 2300 professionals and operating over 60 manufacturing, distribution and service hubs on all continents. Total sales exceed €420M.

www.klinger-international.com

Jørn-Inge Throndsen
Managing Director

KLINGER Westad has been a part of the Klinger Group since 2013

Address:	KLINGER Westad AS Heggenveien 530 3360 Geithus NORWAY	Email:	westad@klinger-westad.com
		Project sales:	sales@klinger-westad.com
		Spare parts:	spareparts@klinger-westad.com
Phone:	+47 32 78 95 00	Service:	service@klinger-westad.com
Fax:	+47 32 78 95 10		



Cryogenic testing of a Westad gate valve for LNG in the late 1960s.

KLINGER WESTAD HISTORY

The company history starts in 1895 with the establishment of a valve manufacturing company by Daniel Westad. The aim; to serve the local pulp and paper industry.

Various transitions in the industry allowed KLINGER Westad to start serving the Marine industry around 1950.

KLINGER Westad started making valves for LNG in the 1960s and made the first LNG butterfly valve in 1975.

With the arrival of oil and gas production in Norway in the 1970s, KLINGER Westad adapted its product line to serve this demanding market segment.

The local Oil & Gas industry required more sophisticated materials, and KLINGER Westad delivered on its reputation. Titanium, 6MO, Super-duplex and Duplex became the common materials for critical services.

KLINGER Westad followed the maritime industry east, and have exported high quality valves to Korea, China and Japan since 1978.

Westad joined the KLINGER group in 2013 and became KLINGER Westad in 2020.

After more than 120 years, KLINGER Westad is still at the same location in Geithus, Norway.

KLINGER WESTAD TODAY



KLINGER Westad is a leading supplier and a pioneer in the development of high performance butterfly valves for ships and offshore installations, the Oil & Gas, chemical and mining industries. The close connection to the North Sea enables KLINGER Westad to expand its knowledge of critical applications, high-technology materials and valve design.

Focus on quality

KLINGER Westad controls all activities from machining through assembly and testing, always under the strictest quality control. Procedures and acceptance criteria are implemented at our sub-contractors and in our own production.

ISO 9001 certified since the standard's introduction.
Latest version available at klinger-westad.com

Environmental responsibility

We do our best to take care of the environment. KLINGER Westad strives to minimize the use of non-renewable resources and unnecessary packaging. Environmental knowledge is important among our employees and KLINGER Westad has an open policy towards customers, suppliers, owners and the general public regarding the environmental impact.

ISO 14001 certified since March 2010.
Latest version available at klinger-westad.com

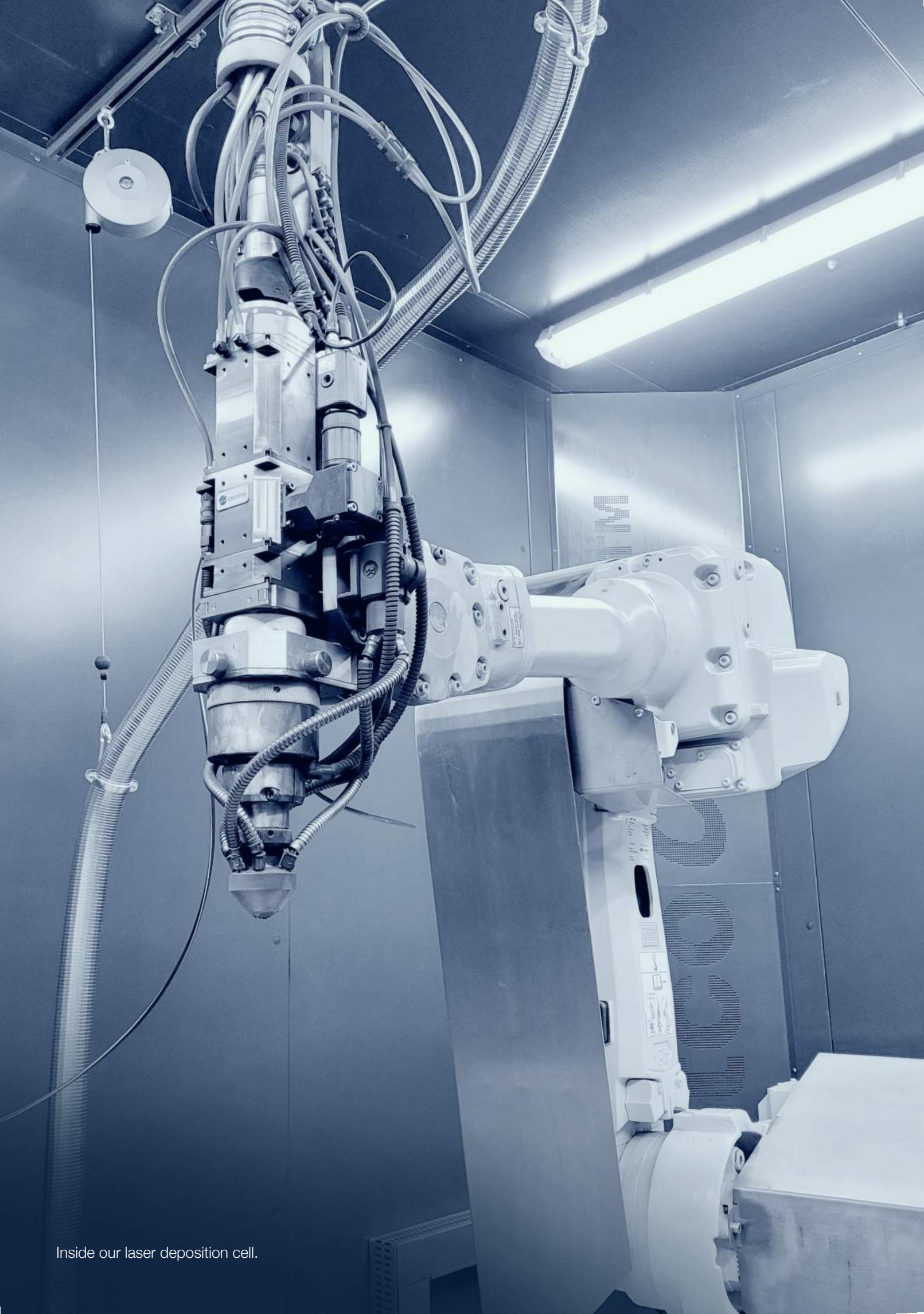
- » Valves can be delivered according to NORSOK L-001
- » Approved by Achilles - ID 15965

- » Pressure Equipment Directive - PED-H-137
- » Westad is self certified with DNV GL, LR and BV
- » Approved by major oil companies

Certifications and approvals

In addition to a proven track record of delivering high quality products for more than hundred years, KLINGER Westad is classified and certified by most major classification societies.





Inside our laser deposition cell.

KLINGER WESTAD FACTORY

KLINGER Westad with our manufacturing plant and head office is still located in Geithus, and we can proudly say that our valves are made in Norway since 1895.



Laser cladding prior to machining.

Engineering and manufacturing
3D CAD/CAM software technology ensures high precision engineering, required by the advanced geometry of KLINGER Westad valves. KLINGER Westad is using a 3D measuring machine to control all tolerances.

The manufacturing facilities include highly modern CNC machining centers and rely on an educated and skilled work force. To utilize the advanced engineering tools, KLINGER Westad has several state of the art 5-axis machining centers supporting computer-aided manufacturing.



Newest laser technology
KLINGER Westad uses next generation laser deposition technology for hardfacing to assure high performance in critical applications.

Testing facilities
The KLINGER Westad factory is equipped with three computerized test units for valves. Horizontal clamping ensures quick and easy (un)loading and allow testing of bigger actuated valves. Testing is done in accordance with the highest quality standards. The company performs hydrostatic tests and high/low pressure tests with gas.

We run our own cryogenic testing facilities with digital instrumentation, remote observation and the highest safety standards for tests with helium and liquid nitrogen.



Cryogenic testing at -196 °C.



Top side pipelines of an LNG tanker with KLINGER Westad valves

WESTAD CRYOSEAL 2X™

Double Eccentric High Performance Butterfly Valve for LNG

KEY FEATURES

- » Developed for use in LNG Systems
- » Double eccentric design to reduce wear on seat
- » Bi-directional at full pressure rating
- » Free access to stuffing box and gland
- » Bonnet extension
- » Fire safe acc. to API 607

The KLINGER Westad butterfly valve for cryogenic service is designed for tight shut-off and throttling service.

The disc movement is double offset. This eliminates concentrated wear points on the sealing ring and extends its lifetime. Standard body patterns are flanged and butt welded types.

Butt welded type has extended body to prevent heat conduction to the sealing area during welding installation. An inspection door on top of the body enables easy inspection, maintenance and replacement of inner parts without the need to remove the valve or to cut the pipe.

To prevent internal stress in the bonnet during the cool-down period, all bonnet joints are bolted. This bonnet is extended to ensure that the gland area remains free from freezing even for temperatures down to -196°C.

The valve can be installed with the shaft in any direction. The topflange drilling is according to ISO 5211 standards to fit a large range of gears and actuators.



Specifications

Temp. range	+200°C to -196°C
Pressure rating	Up to 50 bar
Size range	DN80 - 800 (3" - 32") Other sizes on request
Services	For tight shut-off and throttling services
End to end	Butt welded type according to drawing Double flanged type according to ISO 5752
End connection	ISO PN 10/16/20/25/40/50 ANSI Class 150/300



WESTAD SCORPIO 2X™

Double Eccentric High Performance Butterfly Valve

KEY FEATURES

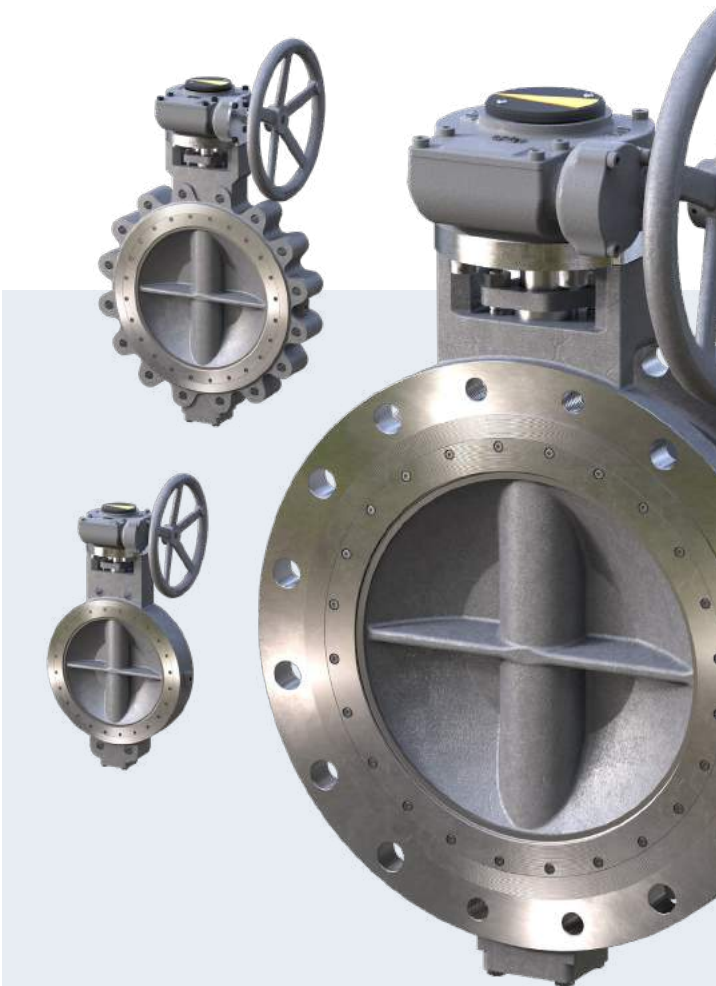
- » Developed for use in LPG/LEG-, chemical-, oil-, sea water systems etc.
- » Double eccentric design to reduce wear on seat
- » Bi-directional at full pressure rating
- » Free access to stuffing box and gland
- » Shaft extensions available
- » Fire safe acc. to API 607

The Westad Scorpio 2X™ is designed for full shut-off and throttling services.

After more than 120 years of valve manufacturing, KLINGER Westad has designed a valve for special applications that will perform under extreme conditions.

The main design focus has been to minimize maintenance. No special tools are required - to reduce operational cost.

A wide range of materials are available to suit different service requirements and all bearings, gaskets and packings are made from non-corrosive materials.



Specifications

Temp. range	+200°C to -110°C
Pressure rating	25 / 50 bar
Size range	DN80 - 1000 (3" - 40") Other sizes on request
Services	For tight shut-off and throttling services
End to end	Wafer acc. to API 609, Cat. B, table 3A. Above 24" acc. to ASME B16.47, A Lug acc. to API 609, Cat. B, table 3A. Above 24" acc. to ASME B16.47, A Double flanged type according to ISO 5752
End connection	ISO PN 10/16/20/25/40/50 JIS 10K/16K ANSI Class 150/300



KLINGER WESTAD SERVICE & MAINTENANCE

Aftermarket

KLINGER Westad strive to offer the very best service on our products by offering service on all our delivered valves, starting from the building yard until the unit's end of operational life. With a strong focus towards our end-clients, we operate on a 24/7/365 basis with minimum time for mobilization. KLINGER Westad maintains an extensive database of valves delivered, so even through change of operator or loss of documentation, we take pride in assisting. Old documentation and spares are normally just a phone call away.

Dry dock service and maintenance

Even though KLINGER Westad valves are designed for minimum maintenance, we recommend to include regular inspections and renewal of "wear and tear" parts into the client's Planned Maintenance System (PMS). With our expert service personnel, we assist clients by performing time efficient and correct service. We attend

vessels during dockings all around the world or sailing with them if necessary. Sourcing spare parts through KLINGER Westad guarantees OEM parts, which safeguards against trouble in-between defined PMS intervals.

Customers are encouraged to seek a service agreement with KLINGER Westad. This ensures discounted prices for spares and service attendance, in addition to technical help-desk, follow-up and assistance with maintenance planning (PMS).

Cryogenic valves

KLINGER Westad cryogenic valves require skilled and certified engineers to secure its lasting performance. Only KLINGER Westad Service engineers have the correct authorization, training and parts to correctly perform service and maintenance on KLINGER Westad cryogenic valves.

Contact information

General

Phone: +47 32 78 95 00
Fax: +47 32 78 95 10
Email: westad@klinger-westad.com

Other

Project sales: sales@klinger-westad.com
Spare parts: spareparts@klinger-westad.com
Service: service@klinger-westad.com

Detailed contact information at www.klinger-westad.com

KLINGER WESTAD REFERENCES

Our references include these world class companies among others:



Complete reference list available on request.

GLOBAL NETWORK

KLINGER Westad caters to the global Marine and Oil & Gas markets, and operates worldwide with the dedicated support of a well-established network of representatives.

Contact information

General		Other	
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