



KLINGER MARINE

Our program for the
Marine Industry

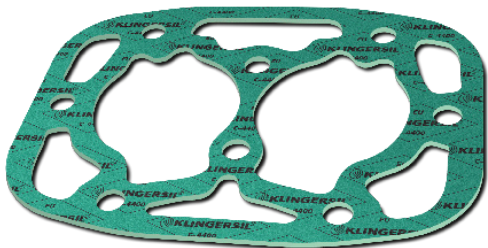


- » Our program
- » Valves
- » Expansion Joints
- » Instrumentation
- » Gaskets
- » Seals





KLINGER MARINE PROGRAM



KLINGER GROUP

trusted.worldwide.

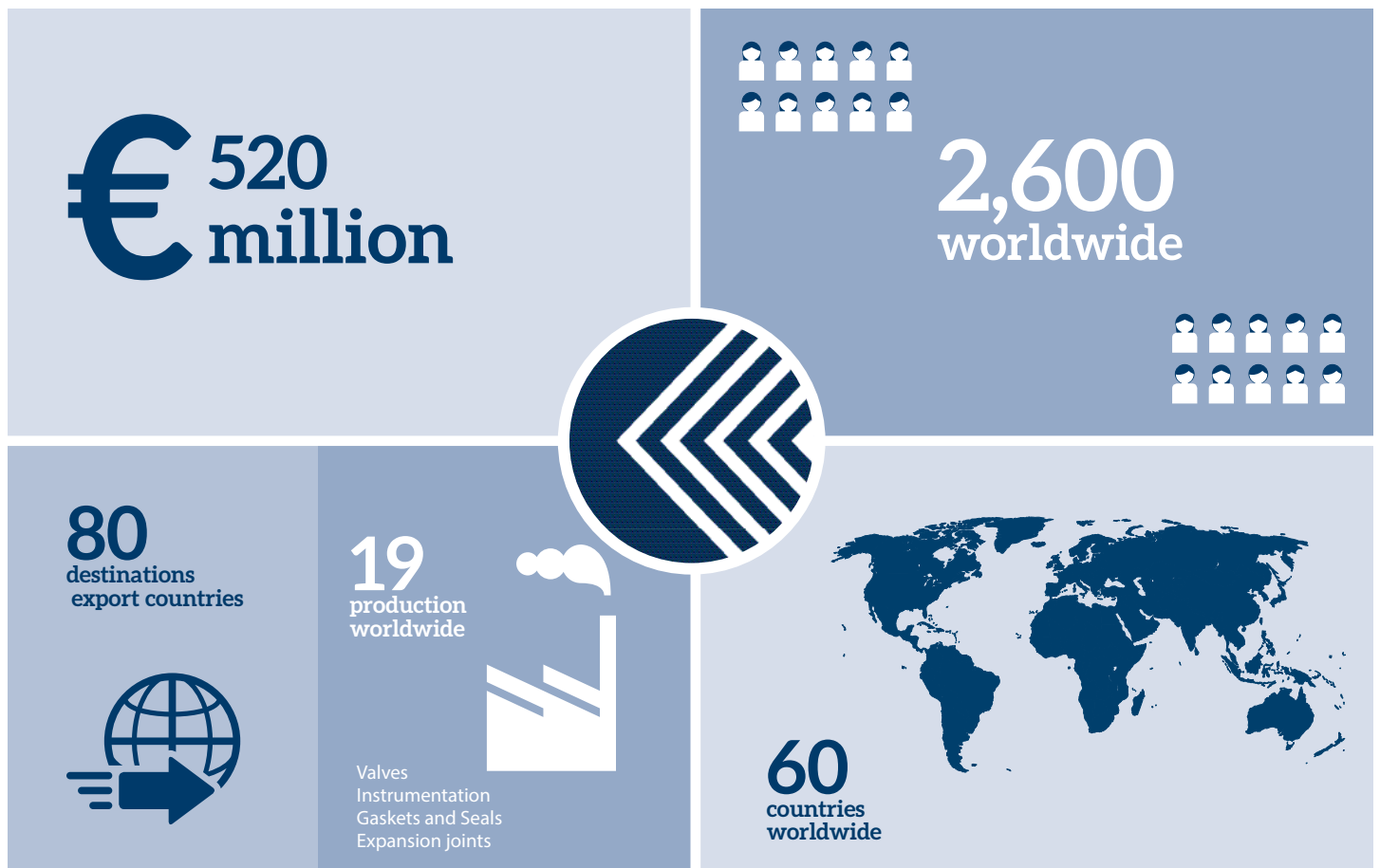
» KLINGER Denmark was founded in 1848 and is today a global manufacturer and supplier of valves, instruments, expansion joints, gaskets, and seals. We continuously develop new solutions in close collaboration with our customers from the marine and construction industry, energy sector, pharmaceutical industry, oil & gas, food and paper industries.

KLINGER is known to produce valves, gaskets, expansion joints, and water level fittings with more than 160 years of experience. In recent years, we have

expanded our business area to also deal with seals and instruments for the process industry.

We advise our customers with the know-how and experience of our technical experts - 24 hours a day - 365 days a year. In addition, we have selected sales teams with competencies and experience in all industries we serve.

Each team is dedicated to specific customers to ensure optimal and efficient communication between us and our customers.



» KLINGER Group is an established top supplier of valves, instruments, gaskets, seals, and expansion joints. The family business was founded in 1886, and today presents itself as a globally active group of companies.

Our distribution network includes production facilities as well as sales and service offices in more than 60 countries.

The KLINGER Group has more than 2,600 employees worldwide. KLINGER has solid expertise and application experience due to our global presence. Our work is guided by high-quality requirements and based on our many years of experience.

We are constantly expanding our technology and leading market, always to increase customer satisfaction.

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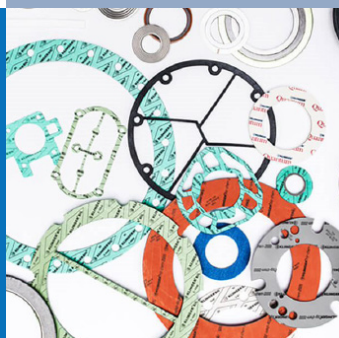
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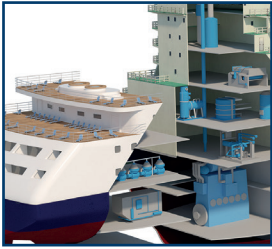
Gaskets



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DNA coding

PRODUCT GROUPS



»» OUR PRODUCT SOLUTIONS

KLINGER is a well-established supplier of valves, gaskets and instrumentation to the marine industry. We supply everything from individual to complete total solutions. Our product and segment specialists are available throughout the project phase.



»» VALVES

KLINGER supplies control units for many types of valves. Our product program contains both positioners and control units with built-in sensor and solenoid valve.



»» EXPANSION JOINTS

At KLINGER Denmark we offer a wide range of expansion joints covering most industrial segments for various applications, both with low(er) and high pressures.



»» INSTRUMENTATION

At KLINGER, we advise and deliver process instrumentation/instrumentational solutions for the marine industry. We deliver products, provide service agreements and calibration services. Our delivery program includes instrumentation for pressure, temperature, level, and flow measurement, as well as solutions for flame and gas detection.



»» GASKETS

KLINGER has been a manufacturer of gaskets since 1874 and today we are the worlds largest manufacturer of fibre gaskets. We offer gaskets in a wide range of materials, all high quality, innovative gaskets, featuring a long service life. Our gaskets can be delivered with all necessary approvals.



»» DNA

As a new option for our customers KLINGER has developed a possibility to DNA code our gasket materials, hence making it easier to check the authenticity of a given KLINGER material.

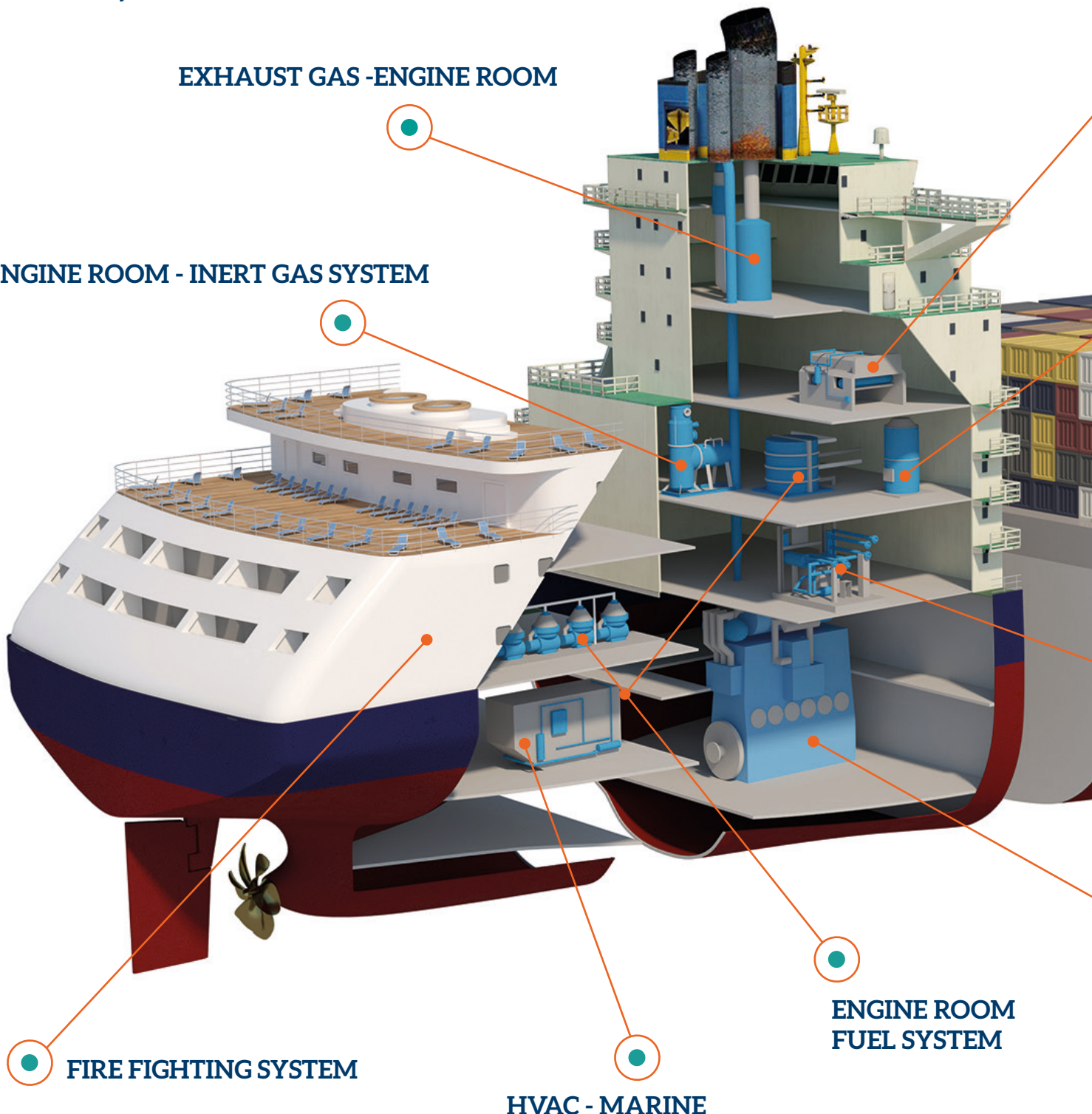
OUR PRODUCT SOLUTIONS

For the marine segments and applications

KLINGER Denmark has more than 150 years of experience providing solutions to the marine industry. Due to our many years of experience, we are supplying product solutions for all applications within the marine industry. The ship below illustrates many of the applications in which we have expert expertise and for which we provide a complete product solution. Our portfolio contains a wide range of valves, gaskets, instrumentation and expansion joints, making us the ideal partner for anyone working within the marine industry.

EXHAUST GAS -ENGINE ROOM

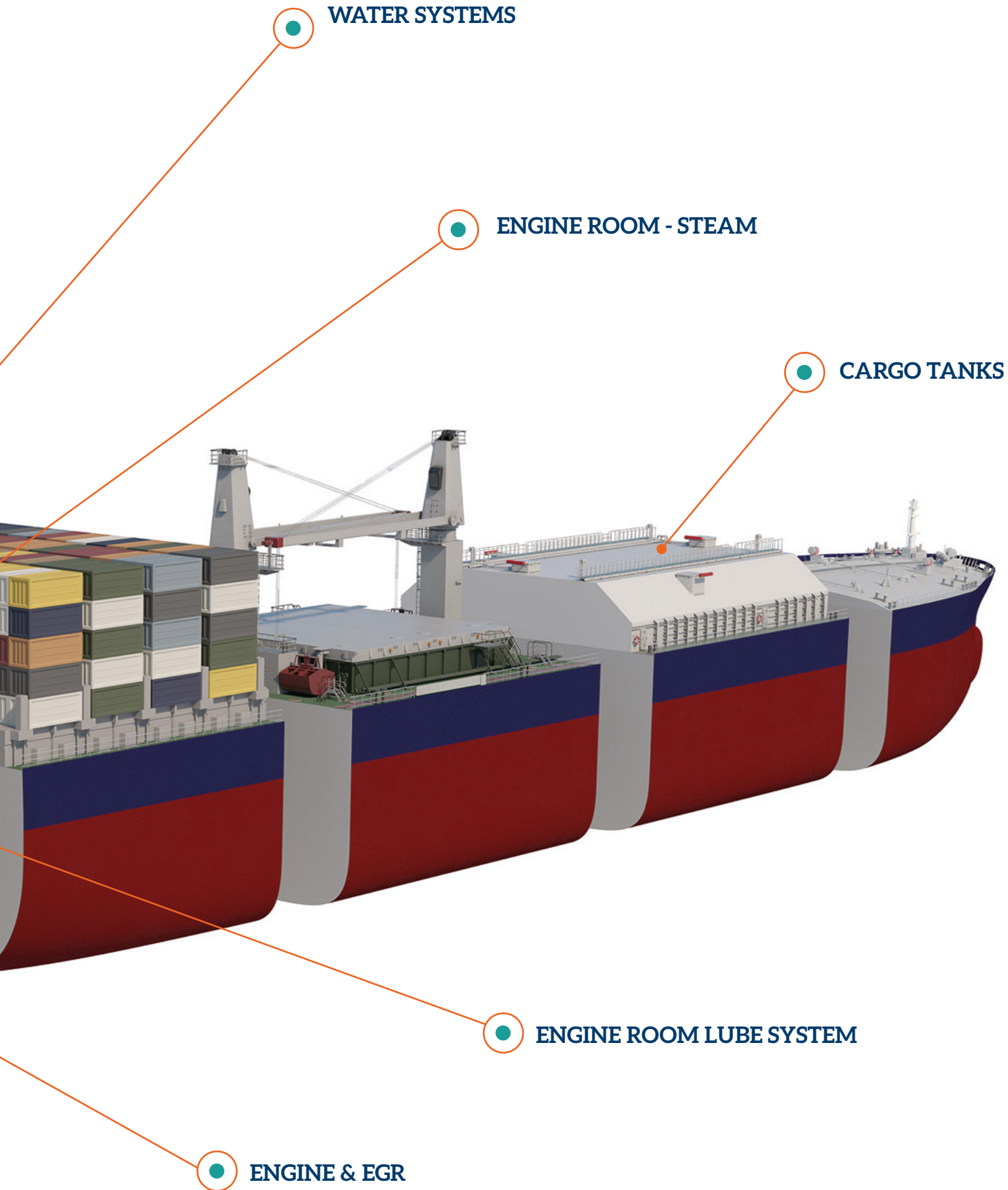
ENGINE ROOM - INERT GAS SYSTEM



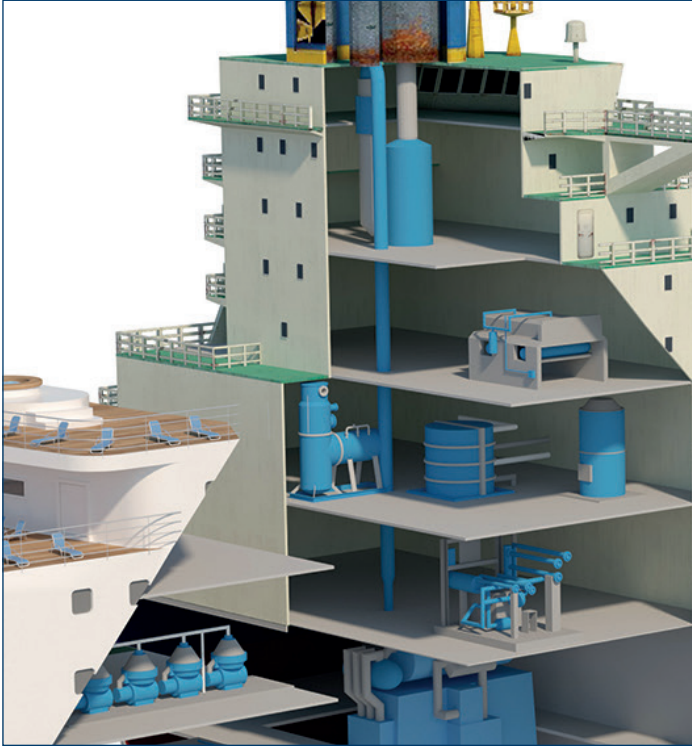
**ENGINE ROOM
FUEL SYSTEM**

HVAC - MARINE

FIRE FIGHTING SYSTEM



PRODUCT SOLUTIONS AND APPLICATIONS



This overview gives you an idea of all the different marine applications for which KLINGER Denmark provides you the best solutions. Our products are specially designed to work in the toughest conditions, and with us, you get a solution that ensures safe and reliable operation.

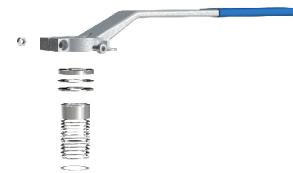
Through close collaboration with our sales engineers, we ensure you the right solution for your project. In addition to providing you with a reliable solution, we also offer the most cost-effective solution.

ENGINE & EGR

	Engine & boiler	Scrubber for Exhaust	Exhaust Gas & Recirculation (EGR)
Ball valves	•	•	•
Std. On / OFF valves	•	•	
Indicator Cocks	•		
Control valves	•	•	•
High temp Butterfly valves	•	•	•
Expansion Joints	•	•	•
Gaskets for manhole, flanges etc.	•		
Gaskets SPWG / Graphite	•	•	•
Gaskets - exhaust pipes	•	•	•
Temperature measurements	•	•	•
Pressure measurements	•	•	•
Bypass Level Gauges			•

FIRE FIGHTING SYSTEM

	Water mist system	Fire and Deckwash system outside E.R.	Fire / HP	Add. fire pump system
Butterfly valves	•		•	•
Ball valves	•			•
Check valves	•			•
Mudox	•			•
Strainer	•			•
Bronze valves		•	•	•
Air vent			•	•
Gasket / Sealings	•	•	•	•
Fire Hose valves	•			



ENGINE ROOM INERT GAS SYSTEM

Inert Gas Generator
(IGG)

Butterfly valves	•
Ball valves	•
Check valves	•
Level Gauges	•

CARGO TANKS

LPG
LNG
Chemicals
Oil

KLINGER Westad Butterfly valves	•	•		
KLINGER Westad Ball valves			•	•
Gaskets	•	•	•	•
Butterfly valves			•	•

HVAC Marine

Air condition plant
Heating and cooling
Ventilation system
Drinking water system
Toilet and waste

Check Valves		•	•	
Global Ball Std. On/Off valves	•	•	•	•
High performance Ball On/Off valves	•	•	•	
Control valve - Liquids and Gases	•	•	•	
High performance piston On/Off valve		•		
Expansion Joints	•	•	•	
SteamTrap		•		
Gaskets - Steam / Condensate			•	
Gaskets - Water			•	•
Gaskets - refrigerant media	•			
Sight Glasses	•			
Sealings	•			
Temperature measurements	•	•	•	
Pressure measurements	•		•	
Level measurements	•		•	•
Flow measurements	•	•	•	
Strainers		•		

ENGINE ROOM STEAM

Boiler - water/steam
Steam Distribution
Condensate System

Blow out valves	•		
Global/ball valves On/Off	•	•	•
High performance Piston On/Off valves	•	•	•
Control valves	•	•	
Check valves			•
Trap valves station		•	•
Vacuum valves		•	
Steam Traps		•	•
Safety valves	•	•	
Expansion Joints	•	•	•
Gaskets for manhole, flange etc	•	•	•
Gaskets SPWG / Graphite	•	•	•
Temperature measurements	•	•	•
Pressure measurements	•	•	•
Level measurements	•		•
Flow measurements	•	•	•
PRV valves, self acting		•	
Temp. regulating selfacting		•	

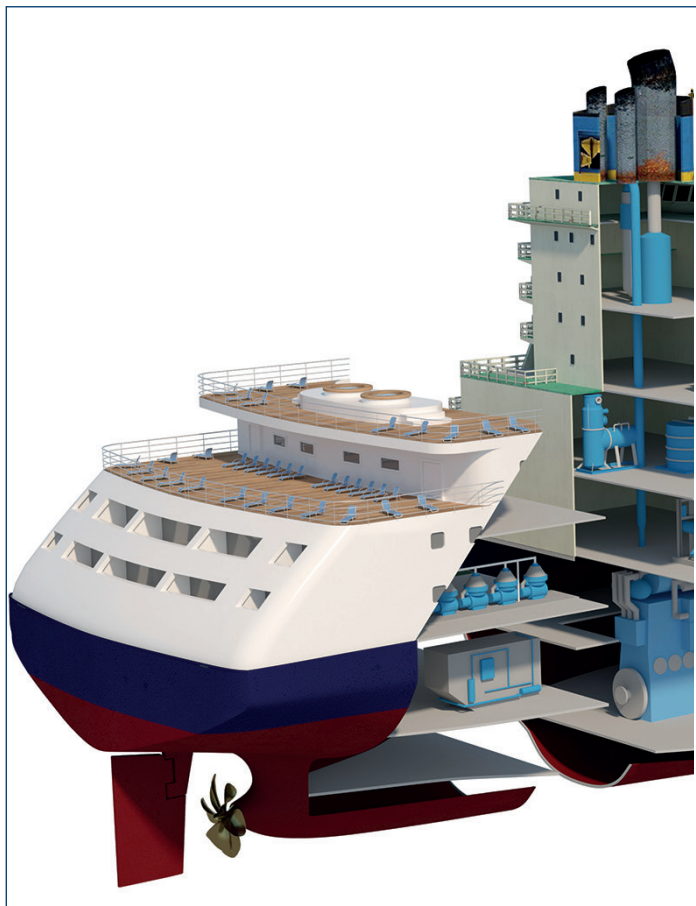
PRODUCT SOLUTIONS AND APPLICATIONS

ENGINE ROOM WATER SYSTEMS

	Sea water distribution	Fresh water cooling system	Ballast water system
Butterfly valves	•	•	•
Gate valves	•	•	•
Globe valves	•	•	
Control valves		•	
Check Valves	•	•	
Safety valves		•	
SDNR	•		•
Valves			
Air vent		•	
Expansion Joints			
Strainers		•	
Temperature measurements	•	•	•
Pressure measurements	•	•	•
Level measurements			

ENGINE ROOM FUEL SYSTEM

	Lubi Oil System -	Fuel Oil Conditioning system	Gas valve unit (LNG/ LPG)	Future Fuels
Ball valve On / Off - 2&3 way	•	•	•	•
Butterfly valve On/Off	•			•
Control valves	•	•	•	•
Self closing drain valve	•	•		•
Check valves	•			•
Quick closing valve		•		•
Safety valves	•	•		•
Sounding Cock valve	•	•		•
Strainers	•	•		•
Gaskets Fiber / Graphite	•	•	•	•
Gaskets SPWG	•	•		•
Instrumentation Pressure	•	•	•	•
Instrumentation Temperature	•	•	•	•



ENGINE ROOM LUBE SYSTEM

	Lubi Oil System
Ball valves On/Off - 2&3 way	•
Butterfly valves On/Off	•
Control valves	•
Self closing drain valves	•
Check valves	•
Safety valves	•
Sounding Cock valves	•
Strainers	•
Gaskets Fiber / Graphite	•
Gaskets SPWG	•
Instrumentation Pressure	•
Instrumentation Temperature	•

VALVES

Our product program

To ensure optimal function and service life, it is of great importance to choose the right valve type in the right materials. KLINGER Denmark's product range includes both KLINGER products, but we also have an extensive collaboration with valve manufacturers worldwide, which ensures you the optimal solution. In this section, we have selected specific valves, but our entire program can be viewed on our website.



BUTTERFLY VALVES CENTRIC



BUTTERFLY VALVES

One of our best selling products, which has been used for several decades in a wide range of applications, for example, coolants (water /glycol), cold and hot water, seawater, brine, and gases.

- » DN40-1800, PN10/16
- » DN40-1800, PN10/16
- » Wafer-, lugged- or flange
- » Seats in EPDM, EPT, NBR, Viton, FKM, PTFE, Silicone
- » Disc's in stainless steel 316, Alu Bronze, duplex and nylon coated
- » Great flexibility – Exchangeable seat
- » Temperature from -20° to + 204°C depending on pressure and materials selected
- » ISO 5211 actuator flange and ISO 5752 installation length
- » ISO 5208 (EN12266-1) Leakage Rate A – 100% tightness

For vacuum applications we supply butterfly valves with bonded seats vulcanized to valve body.



BUTTERFLY VALVES ECCENTRIC



BUTTERFLY VALVES HIGH PERFORMANCE

Double Eccentric butterfly valves are used for more demanding applications ex. superheated water, hot water, steam and low temperature liquids and gasses.

- » DN40-600, PN10/16/25/ANSI 150lbs. (VF940/943 for PN25/40/ANSI 300lbs versions)
- » Wafer or Lugged
- » Body in steel, stainless steel and special grades
- » Seats in PTFE, PTFE/graphite, Fire Safe type and metal
- » ATEX and SIL2/3
- » Temperature from -100° to 600°C depending on pressure class and materials selected
- » Actuator flange acc. to ISO 5211 and face to face acc. to ISO 5752
- » Leakage Rate A - 100% tightness (ISO 5208 /EN12266-1)



INDICATOR COCK



KLINGER DENMARK INDICATOR COCK - 530999-2

Indicator valves for measuring and monitoring the cylinder pressure of diesel engines while running.

- » Steel 1.0460
- » Plug in stainless steel 2.4630 (Nimonic)
- » Seat in stainless steel 1.4571
- » PN300 Tmax. 450°C



PRESSURE GAUGE VALVES



PRESSURE GAUGE VALVES - 2 WAY / 3 WAY

Used for liquids, gases, and steam.

- » MABA-BC in steel, and AT53 in brass
- » PN100, PN160
- » -10°C to 400°C, depends on working pressure



DIAPHRAGM VALVES



GUNMETAL DIAPHRAGM VALVES

Suitable for water, brine, oxygen, and other gases.

- » 100% tight shut off
 - » Clear open/shut indication
 - » PN16 (PN10 > DN50)
 - » -30°C to +130°C
 - » Rubber and PTFE diaphragms suiting media and temperature
- Other materials and connections are available as Fire Hydrant.



NEEDLE VALVES



NEEDLE VALVES

Suitable for water, oil, liquids, air, gases.

- » Good regulation of high pressures
- » Metal Seat
- » PN400/6000psi
- » +180°C w/ PTFE seal, versions up to 500°C



GATE VALVES, THREADED AND FLANGED



GATE VALVES

Suitable for water, saturated steam, oil, air, and gas.

- » Threaded and flanged connections
- » Materials in cast iron, steel, and bronze
- » Seats in bronze or stainless steel
- » Rising and non-rising stem
- » Actuated version available



GATE VALVES, FLANGED



GATE VALVES, NON-RISING STEM

Potable water and other fluids.

- » Flange connection
- » Coated cast iron body and bonnet
- » Rubber line wedge
- » 100% tightness
- » Actuated version available



KNIFE GATE VALVES



KNIFE GATE VALVES

Abrasive media such as powder and slurry.

- » Wafer or lugged connection
- » Body/gate in ductile iron, stainless steel, and duplex
- » -10°C to +120°C depending on sealing and packing
- » Pneumatic, electric, or hydraulic actuator possible



PISTON VALVES



KLINGER PISTON VALVES - KVN

This piston valve was developed by KLINGER and we are still the leading manufacturer of piston valves. 500% greater sealing area than globe valves and longer lifetime.

Suitable for steam, condensate, water, oil, air, and gas.

- » Flanged, threaded and SW versions
- » PN16, PN40 and PN63 (Threaded/SW)
- » Available in cast iron, steel, and stainless steel
- » EN12266-1 Rate A - 100% tightness



STORM VALVES



BRONZE VALVES

Prevents seawater from entering the system during heavy sea.

- » Design to DIN 87101 Form A and EN558 Series 48
- » RG5 or RG10 with NBR vulcanized disc
- » Flange PN10
- » Pressure rating 4 bar



GLOBE VALVE



GLOBE VALVES

We have a wide range of globe valves in different materials.

Used for shut-off and throttling in water, oil and gas applications.

- » Cast and ductile iron, steel, stainless steel and bronze
- » DN15-300 in flange versions
- » Leakage class EN12266-1 Rate A - 100% tightness
- » Versions with a bellow, throttling disc available
- » Solutions for -50° to 400°C depending on material and pressure class.



FIRE VALVES



FIREFIGHTING AND DECK WASH VALVES - BRONZE

Globe valves designed to be used for firefighting and deck wash.

- » DN40, 50 and 65 inlet flanges to EN, JIS, ANSI
- » Outlet BSP male
- » PN16
- » With and without couplings

»» BALL VALVES & PLUG VALVES

KLINGER Denmark has a wide range of ball valves, which includes KLINGER produced ball valves, and from respected manufacturers worldwide. This ensures you the optimal solution when collaborating with KLINGER Denmark. In this section, we have selected specific valves, but you can view our complete product program on our website. We offer solutions up to DN1000.

»» 2 WAY BALL VALVES

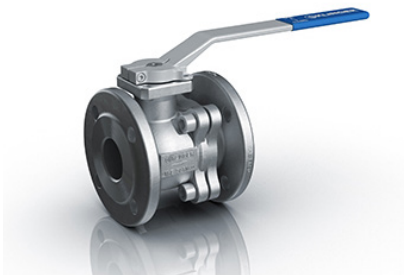


SPLIT BODY DESIGN

Suitable for water, gas, oil, steam, and other fluids. KLINGER KHE is a ball valve with split body design, which has spring loaded seat and a higher temperature range than most standard types on the market.

- » KHE available in steel and stainless-steel version
- » Flanged PN16/40 and 150/300lbs
- » Temperature: -60°C to +300°C
- » Fire-Safe API 607 / ISO10497
- » V-port ball for control use
- » ISO 5211 actuator flange
- » ISO 5208 (EN12266-1) Leakage Rate A – 100% tightness

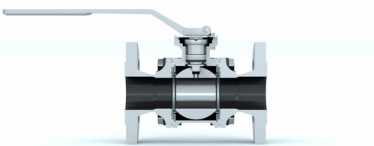
Other split body ball valves can be supplied in Bronze and Super Duplex.



3-PIECE BODY DESIGN - KLINGER KHA

Suitable for water, gas, oil, steam, and other fluids. KLINGER KHA is a High Performance full bore ball valve with unique spring-loaded seat elements securing longtime tightness of the valve.

- » Flanged, Threaded or Butt Weld connection
- » Steel and Stainless Steel 316
- » ISO 5211 actuator flange
- » Firesafe API 607 / ISO10497
- » Leakage Rate A – 100% tightness
- » Standard temperature: -20°C to +300°C, special -60°C to +400°C
- » V-port ball for regulating
- » Block and Bleed version





2 WAY BALL VALVES - THREADED



3-PIECE BODY DESIGN - PROBALL AC-305

Suitable for water, cooling water, gas, oil, steam, and other fluids.
Covers most applications.

- » Steel and Stainless Steel 316/316L
- » Female Threaded or Butt Weld DN8 to DN100
- » PTFE iht. FDA and EC1935
- » ISO 5211 actuator flange
- » Leakage Rate A – 100% tightness
- » Standard temperature: -30°C to +180°C
- » V-port ball for regulating and with control

Other 3-piece body ball valves can be supplied in Bronze and Super Duplex.



THREADED VERSION 2-PIECE DESIGN

Suitable for water, air and oil.

- » 1/4" - 4" Female threads. PN25
- » Brass MS58 w/PTFE seats
- » Full Bore
- » Temperature: -20°C to +120°C
- » Version w/ butterfly handle or male/female threads

We can also supply a type for seawater in bronze.



STAINLESS STEEL W/LEVER

Suitable for water, air, oil, and other fluids.

- » 1/4" - 4" Female threads. PN63
- » Stainless steel 316 w/PTFE seats.
- » Full Bore
- » Lockable lever
- » Temperature: -30°C to +180°C



HIGH-PRESSURE BALL VALVES

Suitable for water, air, oil, and other fluids in high pressure systems.

- » 1/4" - 1 1/2" Female threaded
- » PN500 (1/4"-1/2") / PN400 (3/4"), PN350 (1" - 1 1/2")
- » Steel, option in stainless steel
- » POM seats (Polyamide)
- » Temperature: -30°C to +70°C water, and +90°C for air



COMPACT BALL VALVES - WAFER TYPE



COMPACT BALL VALVES

Suitable for water, air, oil, fuel and other fluids. This compact ball valve is often used in fuel systems. Both as 2-way and as 3-way diverter valve.

- » DN15-150
- » PN16-40 / ANSI 150/300 / JIS
- » Steel and stainless steel versions
- » Marine approvals
- » Fire Safe versions
- » Complete actuated versions



3 - WAY BALL VALVES



FLANGED

Suitable for water, oil, air, and other fluids.

- » DN15 to DN100
- » PN16/40 and ANSI 150
- » Steel or Stainless steel 316 w/ PTFE seats
- » PN16/40 and ANSI 150
- » T- or L-bored
- » Temperature: -10°C to +200°C
- » EN12266-1 Leakage Rate A – 100% tightness
- » Versions with lever or complete with actuator



THREADED

Suitable for water, oil, air, and other fluids.

- » ¼" – 2", female thread
- » Stainless steel CF8M (316)
- » -30°C to +300°C
- » Lever with spring locking device
- » ISO 5211 actuator flange
- » EN12266-1 Leakage Rate A – 100% tightness



PLUG VALVES, FLANGED



PLUG VALVES

Suitable for water, oil, gas, and other fluids. Our plug valves are High Performance valves and often used for abrasive and aggressive fluids. Materials and sleeves are selected according to application, both corrosive and abrasive. Pressure from vacuum and up to 100 bar.

- » DN15-400
- » PN10-PN100 (DN15-100) and PN40 above DN100
- » ANSI class 150, 300, and 600 also available
- » Cast iron, steel, stainless steel and special grades as Nickel, Titanium, Monel, SS904.
- » Version with internal coating FEP or PFA
- » Sleeves in PFTE, RPTFE

» ACTUATION & ACCESSORIES

At KLINGER, we install both electric and pneumatic actuators for on / off or control purposes. Assemblies are assembled, adjusted and function tested before delivery. We stock a selection of standard actuators, as shown on the following pages, but we also assemble and supply other brands such as AUMA, Schiebel, Rotork, and others. Our service department provide on-site support as per agreement.



TYPE QTS

Quarter turn electrical valve actuator for ball, plug, and other quarter-turn valves. To be used for on/off and modulating control. Robust powder coated aluminum body. Clear visual position indicator and manual emergency handwheel. Torque up to 4500Nm.

- » ISO 5211 valve connection
- » 24V, 115V, 230V and 400V 50/60Hz, and 24 VDC
- » Versions for Modulating control 4-20mA/ 0-10V and Feedback, Fail close version, Modbus version, and ATEX area



ELECTRICAL ACTUATOR ULLI

Quarter turn electrical valve actuator for a ball-, plug-, and other quarter-turn valves. Compact design and torque up to 6000Nm.

- » ISO 5211 valve connection
- » 24V, 115V, 230V and 400V 50/60Hz, and 24 VDC
- » Optional handwheel, extra open/close switches, torque switches
- » Versions for modulating control 4-20mA/ 0-10V and Feedback



PNEUMATIC ACTUATORS

Very robust and high-quality actuator with many options in terms of materials and surface treatments. Polished inside surface and advanced bearings secure over 1.000.000 operating cycles. Supplied as either double or spring return for 90°, 120°, and 180° actuation. Body in anodized aluminum, C5 coating, or Stainless steel AISI316. Torque up to 13367 Nm.

- » ISO 5211 valve connection
- » Adjustable opening/closing angle
- » NAMUR VDI/VDE-3845 standard for solenoid valve, switches boxes and sensors



V-SOLENIOD

Solenoid valve in polyamide for corrosive environments. To be used on actuators with NAMUR VDI/VDE-3845 connection.

- » 3/2 and 5/2 way
- » IP65
- » Cv: 1,1 (1100l/min)
- » Ambient -40°C to +60°C

» CONTROL VALVES

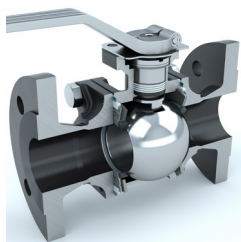
KLINGER manufactures a wide range of control valves, which include both standard control valves up to PN40 and special variants for microflow, low temperature, higher pressure, special alloys ect. In addition to manufactured control valves we supply segment ball, low noise butterfly valves and shunt control valves.



KLINGER BUROCCO CONTROL VALVES

Burocco globe control valves are supplied in 2- and 3-way versions, and used in both standard and High Performance control applications.

- » DN15-150, 1/4"-2"
- » PN 10/16/40 and ANSI 150/300/600
- » -196°C to 350°C
- » Metallic or soft seated
- » EQP or linear characteristic
- » Electrical or pneumatic actuated
- » Analogue and digital control



KLINGER V-PORT BALL CONTROL VALVES

In addition to the above control valves, we can modify an on/off ball valve to be a control valve by mounting a V-port ball. This solution can often be an easy and simple way to control the flow. Flow typically being water, fluids, air, and gas.

- » DN15-150
- » PN rating and temperature depending on ball valve type
- » V-port solutions for KLINGER KHA, KHE, AC-305 and AC-205
- » V-port available in 10°, 30°, 60°, and 90°



OVERFLOW VALVES

Self-acting spill valve (back pressure relief valve) for liquids and air.

- » Gunmetal and stainless steel version
- » Easy to adjust
- » 1/2" – 2" / DN15-80
- » Different spring ranges



PRESSURE REDUCING VALVES

Our product range covers PRV valves for drinking water, non-aggressive liquids, seawater, Steam and Gasses.

- » 1/4" – 2" / DN15-150
- » Brass, bronze, Steel and Stainless version
- » Easy to adjust
- » Options with manometer

» STRAINERS & CHECK VALVES

KLINGER Denmark offers a wide range of filters & check valves. We have non-return valves with both single and double flaps, tilting disc non-return valves, seat non-return valves, and non-slam non-return valves. The non-return valves are also supplied in special materials for aggressive media, as well as with non-return weights and dampers, and as shut-off.



TYPE 287 A

Globe check valves in cast Iron, steel, stainless steel, and bronze for water, seawater, fluids, gas, air, and steam depending on type and material.

- » DN15-300
- » PN 6, 10, 16, 25, 40, 63, 100, 160 bar
- » With or without spring
- » Temperature -60°C to 550°C

CHECK VALVES - WAFER

Wafer check valves have a short face-to-face length and are easy to install. We supply materials such as cast iron, steel, stainless steel, bronze, and super duplex. It is used for water, seawater, fluids, gas, air, and steam depending on type and material.



- » Swing check with a single disc, with or without spring up to DN600
- » Single disc with spring up to DN150
- » Dual plate type up to DN600
- » Tilting disc type with or without spring DN600
- » Temperatures from -40°C to 400°C
- » PN 6, 10, 16, 25, 40, 63
- » Metal or soft seated EPDM, NBR, Viton or PTFE

CHECK VALVES - THREADED

Female threaded check valve in brass, stainless steel, bronze metal or soft seated.



- » Swing and globe check types
- » 1/4" – 3"
- » PN10, 16, 25, 40, 63

STRAINERS Y-FORM

Y-form strainers can be supplied in materials such as cast iron, steel, stainless steel, bronze, and super duplex. They are used for water, seawater, oil, other fluids, gas, air, and steam depending on type and material.



- » DN15-400, PN16-40 / 1/2" - 2"
- » Filter Mesh from 0,1 to 10 mm depending on type
- » Drain plug-in cap
- » PN 6, 10, 16, 25, 40

» SAFETY VALVES

We supply both high-lift and normal-lift safety valves, as well as pressure/vacuum valves. The safety valves protect the system against overpressure and/or excessive vacuum, which can occur during heating, thermal expansions, pumping in and out, condensation, etc.



SAFETY VALVES , FLANGED AND THREADED

We have safety valves in cast iron, brass, bronze, steel, stainless steel, and high-grade materials to cover all applications such as water, seawater, liquid, steam, and gas.

- » 1/4" – 2" / DN15-400
- » Up to PN400
- » With and without lifting lever
- » For potable water
- » Metal and soft seated
- » Gas-tight bonnet



VACUUM VALVES STEAM

When steam condensates in the system, vacuum will occur, which can cause problems. In this case, a vacuum valve design for steam is preferable.

- » Stainless steel
- » 3/8– 1/2"



PRESSURE / VACUUM RELIEF VALVES

Vacuum valve or combined pressure/vacuum relief valve for tank protection.

- » Flange connection
- » Steel or stainless steel

For valve dimensions, please contact us.



STEAM TRAPS & AIR VENTS

Steam can be used for many purposes such as heating, humidification, driving force for, for example, turbines, etc. At KLINGER Denmark you will find a comprehensive product range for steam systems. We have all types of water dischargers and condensate pumps for discharging steam condensate from process. We advise on the dimension and which type is best for your steam application.

STEAM TRAPS

Available in cast iron, ductile iron, and stainless steel for vertical and horizontal installation.

- » Float and thermostatic (F&T types)
- » Thermostatic bimetal and capsule types
- » Thermodynamic types
- » Trap valve stations (TVS types)
- » Capacities up to 127.000 kg/h



AIR VENTS

We have a wide range of air vents to prevent air in a fluid system. Materials in cast iron, steel, and stainless steel.

- » DN15-50 / ½" – 2"
- » Pressure up to 186 bar
- » Metal and soft seated



LIQUID DRAINER

For discharging liquid from air and gas systems.

- » DN15-50 / ½" – 2"
- » Pressure up to 69 bar
- » Metal and soft seated



SIGHT GLASSES

We have a large selection of sight glasses and we supply through-flow glass, welding-in spectacle glasses, sight glass with lighting, sight glass with flow indicator, and with wiper arm for removing dirt on the sight glass. Sight glass is among other things used for registering flow in a pipe system. They are also used for level measurement in pipes, as well as monitoring of processes.

TYPE 120

- » Cast iron, bronze, brass, ductile iron, steel and stainless steel
- » Flanged, threaded or weld connections
- » Cast iron, ductile iron, steel and stainless steel
- » Borosilicate glass DIN7080 or hard glass DIN8902
- » Temperature up to 280°C
- » Mica protection of glass



EXPANSION JOINTS

At KLINGER Denmark we offer a wide range of expansion joints covering most industrial segments for various applications, both with low(er) and high pressures. KLINGER expansion joints comply to most recent norms and comes with standards- / type approved- and customized products, why the expansion joints come with different materials, shapes etc.!

Please consult our technical department for specific working and design parameters.



RUBBER EXPANSION JOINTS

One of the flexible products in KLINGERS portfolio is rubber expansion joints. With their body manufactured from EPDM, NBR, CR, SBR they provide excellent flexibility in short lengths. KLINGER also provide rubber expansion joints with tie-rods upon request. These rods limit the excessive movements and restrain the pressure thrust

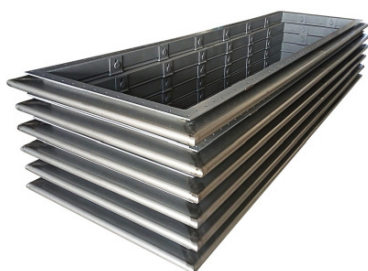
- » Size: DN 25 - 800
- » Bellow (modulation) material: EPDM, NBR, CR, SBR.
- » Design pressure: up to 16 bar - Design temp.: 110°C
- » Flange material: CS, SS, Cast iron



EXPANSION JOINTS - FIXED OR FLOATING FLANGED

Floating flanged type of expansion joints come with rotating (Vanstone) flange connections supplied in accordance with many industrial norms (ASME, EN, DIN, JIS, AS, BS) or special drillings. Fixed flanged are welded type and therefore non-rotating type.

- » Size: DN 25 -1000
- » Design pressure: 0,5 - 16 bar - Design temp.: up to 550°C
- » Bellows material: AISI 304, 316, 321
- » Flange material: CS, SS, Customized



RECTANGULAR EXPANSION JOINTS

Rectangular MEJ is designed and used in gas turbine exhaust systems and condenser connections i.e., in shipbuilding etc. The bellows can be designed and manufactured as U- or V-shapes and to be connected via various corner types (Single/Double/Camera or Round corner) in accordance with required operating & design conditions.

- » Size: Customized
- » Design pressure: up to 1 bar - Design temp.: up to 850°C



HOSES

Our hoses are in different sizes and materials for multipurpose installation & services, braided or non-braided. We have a wide product range from standard type, large diameter, high pressure, ultra-flexible types, solar hoses, boiler hoses, and much more.

- » Size: DN6 - DN150
- » Working pressure: 0-345 bar
- » Hose material: AISI 304, 316L, 321 - Braid material: AISI 304, 316L
- » Designed in acc. to EN-10380

Above parameters are depending on size & type of hoses, braid & connections.

INSTRUMENTATION

At KLINGER Denmark, we can advise you on and deliver solutions in process instrumentation for all types of industry. We deliver, service and calibrate. Our delivery service covers instrumentation for pressure, temperature, level and flow measurements, as well as flame and gas detection solutions.



LEVEL GAUGES

Measuring levels is an essential parameter when it comes to monitoring boilers, but also plays a vital role in the context of storage and ballast tanks. Measurement is used for monitoring, control, and regulation purposes.

REFLEX LEVEL GAUGES

Application: Water, liquids, liquid gases and steam.

- » Good light/dark contrast makes reading easy
- » Available for left-handed and right-handed use
- » Display rotates 360°
- » Pressure rating displays up to 250bar
- » Design temperature up to 400°C



TRANSPARENT LEVEL GAUGES

Application: Water, liquids and steam.

- » Comes with original KLINGER "extra-hardened" borosilicate glass
- » Resistant to high temperatures
- » Display rotates 360°
- » Pressure rating displays up to 180bar
- » Design temperature up to 400°C



MAGNETIC LEVEL INDICATOR

Application: Level display, level measurement and level alarm in bypass tubes for containers, tanks and boilers.

- » Instant, clear reading on rolling display
- » Available with level switches and/or transmitters
- » Working pressure: -1 ... +400bar/Temperature: -196°C ... +400°C
- » Density: from 0.4 ... 2.2 kg/m³
- » Design temperature up to 400°C





FLOW MEASUREMENT

Measuring and monitoring flow is more important than ever before. Increased safety procedures, increased product quality requirements, process optimisation and environmental protection are just some of the causes.



FLOW SWITCHES

Application: Monitoring flow of liquid, e.g. for pump protection.

- » Tube dimensions: DN 08 mm up to DN 200 mm
- » Components in contact with media: PPO, brass or stainless steel
- » Screw-in and T-piece versions

Also available as level switch for hydraulic and gear oil.



OVAL GEAR METER

- » Dimensions: DN 15 mm to DN 50 mm
- » Connection: Flange or thread
- » Components in contact with media: Cast iron, stainless steel and/or PEEK
- » Media viscosity: 0.3...350mPas



PRESSURE SWITCHES

Pressure switches are used for monitoring pressure in systems, containing hydraulic and cooling liquids. Lots of pneumatic systems are also protected using pressure switches. A pressure switch is a measuring device which converts measured system pressure to an electrical switching signal, which can then be processed by a control system, such as a PLC. It doesn't matter whether the switch is mechanical or electronic since the output signal from a pressure switch is always binary.

DIAPHRAGM SWITCHES

Application: Mechanical switch with adjustable alarm point for monitoring pump pressure, cooling/heating systems, machines etc.

- » Housing: Aluminium / IP65
- » Section in contact with media: Stainless steel
- » Areas: 0.006 bar to 10.3 bar (incl. vacuum)
- » Connection: Clockwise thread

Available as differential pressure switch for filter monitoring.



PISTON SWITCHES

Application: Mechanical switch with adjustable alarm point for monitoring pump pressure, casting machines etc.

- » Housing: Aluminium / stainless steel
- » Section in contact with media: Elastomers or steel
- » Areas: 0.6 bar to 800 bar
- » Connection: CETOP 40x40

Available with GL and Exi approval.





TEMPERATURE MEASUREMENT

Temperature is the most frequently measured parameter in measurement technology, and the result is used everywhere for monitoring, control and regulation purposes.



DIAL THERMOMETERS

Application: For tasks requiring greater accuracy or remote reading.

- » 100mm or 160mm, 1.4301 (AISI 304)
Sensor or 12mm / 75...1.000mm
- » Stainless steel 1.4404 (AISI 316L)
- » -40...+600°C
- » G½" or ½ NPT

Available with capillary tubes up to 25 m - for remote reading.



PRESSURE MEASUREMENT

Measuring pressure and differential pressure provides important parameters used in connection with liquids, gas and steam. Measurement is used for monitoring, control and regulation purposes.



PRESSURE GAUGES

Application: Monitoring pressure for most measurement tasks.

- » Industrial design acc. to EN 837-1
- » Connection clockwise or anti-clockwise
- » Available with or without liquid filling
- » Measurement ranges: from 0 ... 0.6 bar up to 0 ... 600 bar
- » Dimensions Ø63, 100 and 160 mm



DISPLAY

Display units help the operator monitor the process. Many applications use digital displays in addition to central operating systems, so that key parameters in the processes are displayed locally for a better overview. We can offer digital displays for board and field mounting – and also a wide range of units, to be used in Ex areas.



BEKA BA304G

Application: Displaying measured values locally.

- » Clear reading, 4 digits 34 mm high with backlight
- » For wall mounting, IP66
- » 2 programmable alarms
- » Ex version (Ex ia IIC T5 Ga)

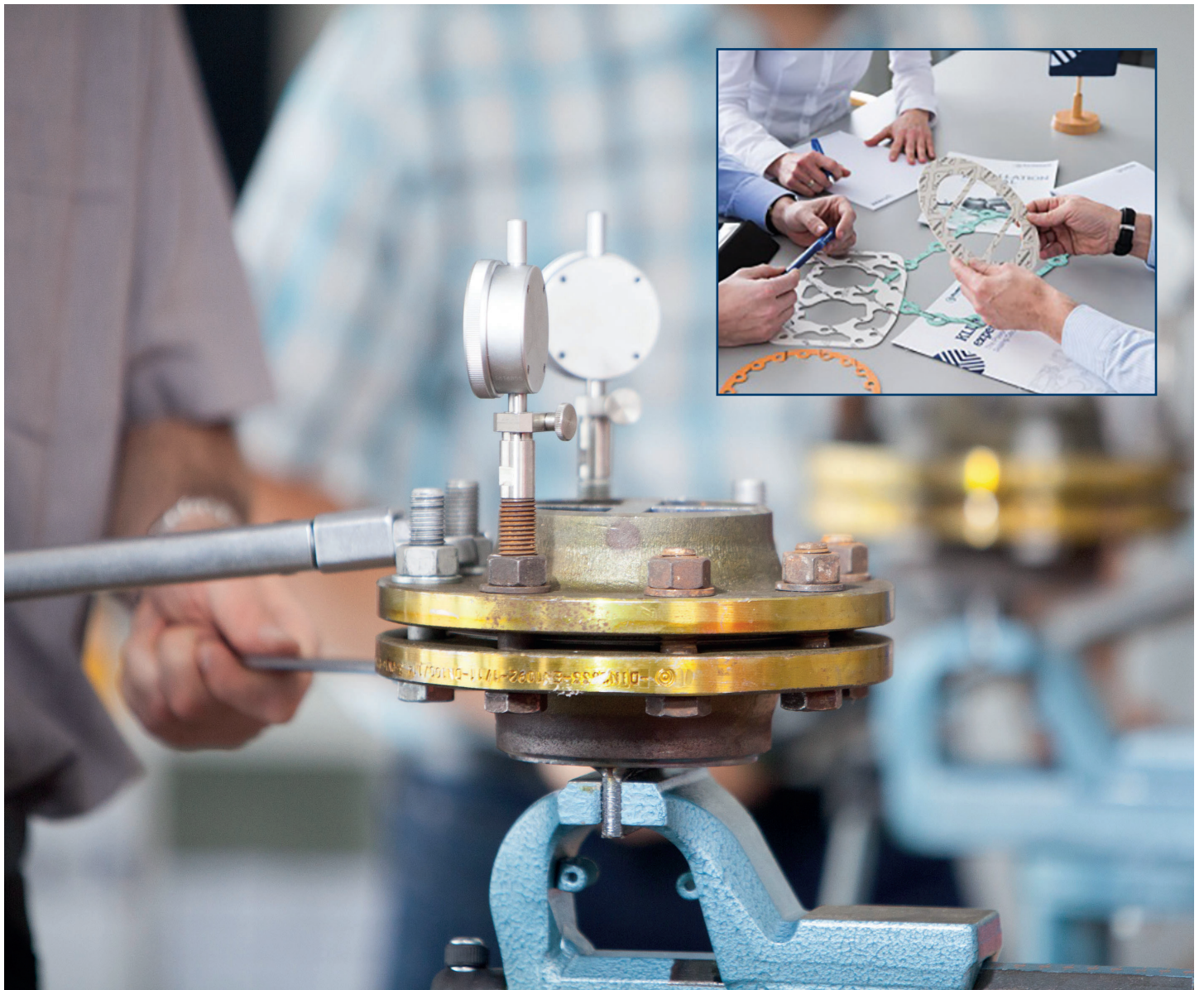


GASKETS

KLINGER has been producing gaskets since 1874, and is today the world's largest manufacturer of fibre gaskets. We also deliver quality packings of the same high quality worldwide. On land, as well as at sea. Our gasket specialists advise not only on the choice of gasket material, but also on tightening torque, bolt quality, and installation.

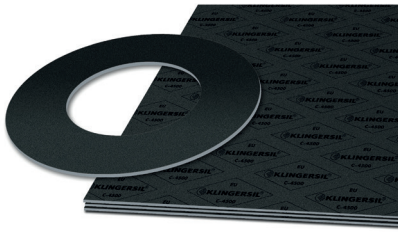
Your benefits of choosing a KLINGER product

- » We have a dedicated gasket team and in-house production.
- » We perform cutting tasks in many materials with our modern machinery.
According to your specifications and with short delivery time.
- » We guarantee the longest possible gasket lifetime and continuous operation.
- » Download of our own KLINGER Expert calculation program.
- » We offer both KLINGER materials, as well as materials from our global partners.





RUBBER-BONDED FIBRE GASKETS



KLINGERSIL®C-4324

Universal fibre gasket made from high-quality synthetic fibres, bonded using NBR. This universal gasket is used in applications with liquid and steam under low pressure and temperature. Resistant to water, hydrocarbons, refrigerants and chemicals.

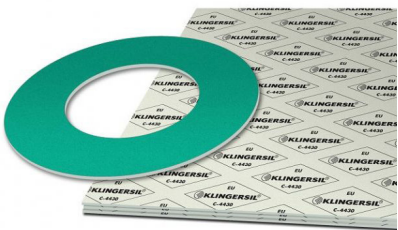
- » DVGW
- » DNV GL



KLINGERSIL®C-4400

All-round fibre gasket made from Aramid fibre, bonded using NBR. This universal gasket material is synonymous with secure and reliable flange assembly. Used for water, petrol, oil, steam, gas, and solvents.

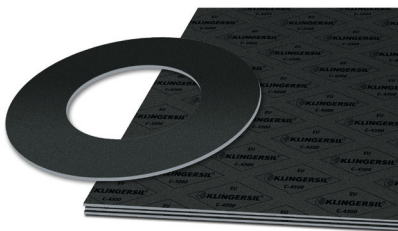
- » DVGW
- » Fire Safe
- » Approved for OXYGEN(BAM). 130 bar at 60°C



KLINGERSIL®C-4430

Super-strong all-round fibre gasket which withstands high surface pressure combined with high temperature. Resistant to hydrocarbons, saline solutions, alcohols, moderate organic and inorganic acids, lubricants and refrigerants. Used for water, petrol, oil, steam, gas, and solvents.

- » DVGW
- » Fire Safe
- » Approved for OXYGEN(BAM). 130 bar at 60°C
- » TA-Luft, etc.



KLINGERSIL®C-4500

One of the market's leading gasket materials made from carbon fibre with super high heat-resistant additives, bound in NBR. Used for overheated steam, hydrocarbons, basal and moderately acidic media, refrigerants and lubricants, and a number of different gases.

- » DVGW
- » Fire Safe
- » TA-Luft, etc.



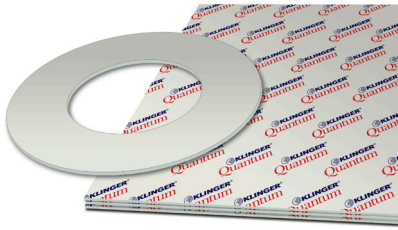
KLINGER® TOP-SIL ML 1

Synthetic fibres bound in a unique multi-layer structure of NBR and HNBR results in improved flexibility at higher temperatures, as well as resistance to creep and cold flow. This unique multi-layer structure extends service life.

- » DVGW
- » Fire Safe
- » Approved for OXYGEN(BAM). 130 bar at 60°C
- » TA-Luft, etc.



RUBBER-BONDED FIBRE GASKETS



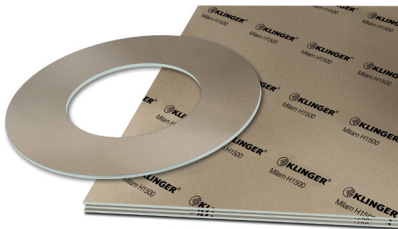
KLINGER®Quantum

KLINGER®Quantum, is a unique gasket material made from the highest quality fibres and fillers, bounded in HNBR. Combined with the specially developed production technology used for KLINGER®Quantum, this material is up to 8 times more flexible compared to other fibrous materials, making Quantum particularly well-suited to high-temperature applications.

- » DVGW
- » Fire Safe
- » TA-Luft, etc.



KLINGER® MILAM PPS



KLINGER®Milam PSS

A mica stone-based gasket material with perforated stainless steel inlays, particularly suitable for applications with high temperatures, combined with dry heat.

- » Excellent chemical resistance
- » Temperatures up to 900°C
- » Max. pressure 5 bar



KLINGER® PSM GRAPHITE GASKET



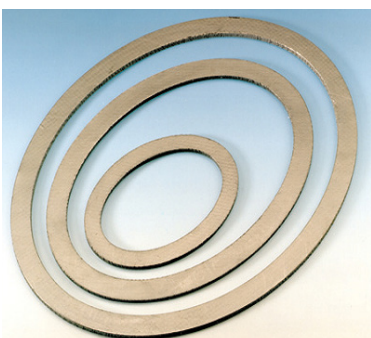
KLINGER® PSM

KLINGER graphite laminate is made from expanded graphite with an inlay made of perforated stainless steel. KLINGER®PSM can be used at temperatures up to 450°C, e.g., with steam.

- » Good chemical resistance
- » No resin or hazardous substances
- » Stable physical properties across the entire temperature range
- » Easily adapts to all flange surfaces



KLINGER GRAPHITE / BOILER COVER GASKET



BOILER COVER GASKET

Made exclusively from expanded pure graphite, with an inlay made of stainless steel, making it 100% steam-resistant up to 450°C. Also resistant to many other media. Does not contain elastomers - no hardening, and no fillers or hydrolysis-sensitive fibres. Used for steam, water and oil applications.

- » Gasket is easy to replace
- » Easy cleaning of gasket surfaces



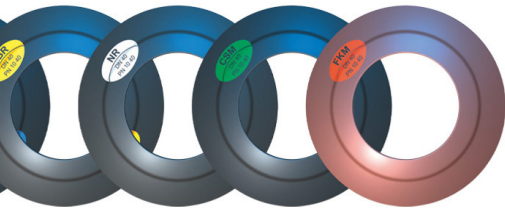
OTHER PRODUCT



KLINGER SEALEX® PTFE TAPE

Expanded PTFE with self-adhesive. Used for almost all media and where low bolt force.

- » High compressibility and thus excellent adaptability
- » Self-adhesive for easy and quick installation
- » Chemical resistance as PTFE



KLINGER® KGS GII

The new generation of rubber-steel gaskets, opening astonishing application fields that no rubber-steel gasket has achieved so far. Safe sealing of water, gas, air, acids, alkalis, and hydrocarbons with low sealing forces and temperatures up to 200°C, depending on the elastomer type.

- » Passed "Blow-out test" at pressure up to 100 bar
- » No in- or ex-trusion
- » Registered for patent approval by KLINGER



SPIRAL WOUND GASKET

Spiral wound gaskets manufactured by KLINGER, tailor made to meet the demands of your application. SPWG can be delivered with or without outer and/or inner rings, as well as different metallic sealing materials utilizing different filler options. Used for water, steam, oil, and a range of chemicals. Maximum pressure 250 bar and up to 600°C, depending on the type and materials.

- » Easy handling and installation between flanges
- » Excellent tightness property, even under varying temperature and pressure



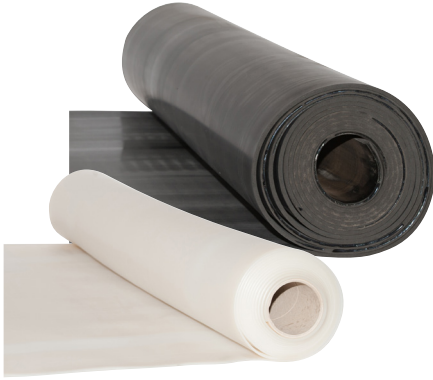
KLINGER TOP-LINE

KLINGER Top-line Compression Packings are produced using the highest quality raw materials. They are available in a wide range of combinations and certifications (incl. TA Luft) to suit a broad application variety.

- » They are available in a wide range of combinations
- » Certifications (incl. TA Luft) to suit a broad application variety.



OTHER GASKET MATERIALS



RUBBER

Used for water, seawater, alcohol, acetylene, glycerin, silicone oil, silicone grease, glycol, carbon dioxide, photo chemicals.

- » Can be used as gaskets, moldings, hatch gaskets, seals
- » The cellular rubber plate, is highly fire-retardant
- » -30°C to +110°C



OIL GASKET PAPER

Oakenstrong® is a universal gasket material consisting of cellulose fibres bonded by glycerin glue. Used in connection with oil, petrol, petroleum, as well as several acids, acetone, chlorine solutions, etc.

- » Oil, petrol, diesel, solvents and chemicals
- » Max 8 Bar
- » Max 120°C

ASBESTOS FREE SHIPS

The IMO SOLAS Regulations (Chapter II-1, Part A-1, Structure of ships, Regulation 3-5) bans the use of asbestos on vessels from 1 January 2011.

Asbestos is still being used legally in some shipbuilding countries, hence the threshold of what constitutes 'asbestos-free' is different in various countries, e.g.

The only way to ensure 0% asbestos is to source gasket materials in a direct line of supply from the original manufacturer.

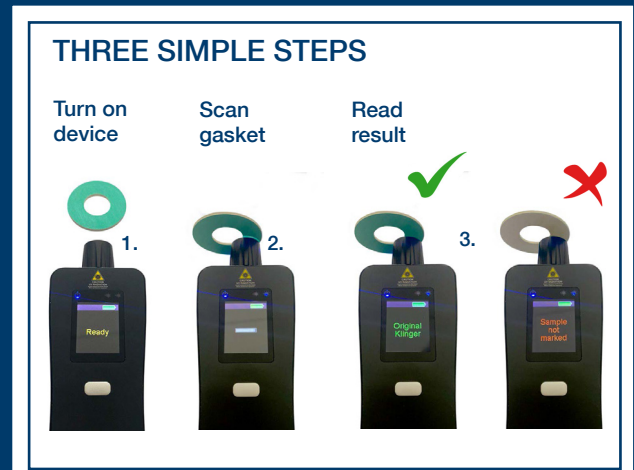
KLINGER is a manufacturer of 100% asbestos free gasket materials and we have now developed a method to DNA code our materials, to secure the authenticity of a given material. It is an option we offer our customers, for them to assure the sourcing of a genuine KLINGER material, and thereby 0% asbestos.

The method involves the use of a special handheld scanner, which reads the DNA coding in the gasket material (the size of a thumbnail is sufficient) and confirms the authenticity.

Features of the scanner:

- » results obtained in seconds
- » simple, handheld device (approx. 20 x 8 x 5 cm)
- » battery operated, no electrical connection needed on-site

To know more about the new DNA coding option and the implications it has for you, do contact us for further information.





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