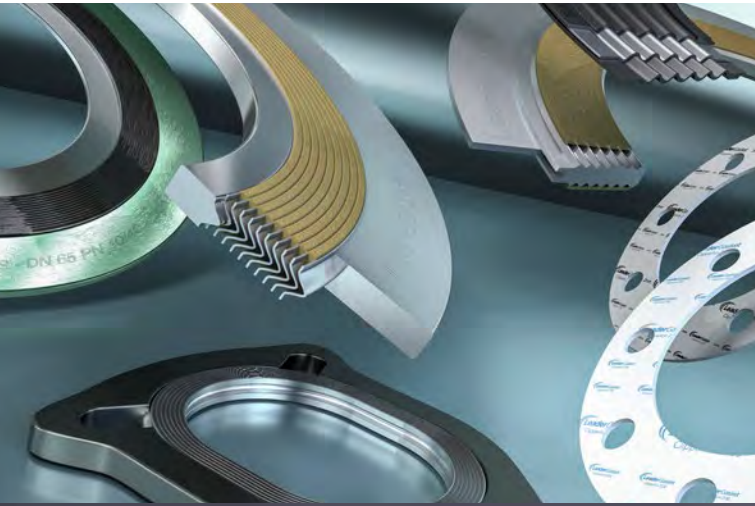


World Class Gasket Manufacturer

TECHNICAL BROCHURE
EUROPE | MIDDLE EAST | ASIA

the legacy in sealing technology



Content

Leader Gasket	3
Capabilities	5
Traceability	7
Total Flange Care	8
Sustainable Gasket Solutions	9
Industries	10
Certificates & Tests	11
OEM Custom Made Gaskets	12
Semi-Metallic gaskets	14
Leader Spiral Wound gaskets	15
LeaderKAM kammprofile gaskets	17
Leader Elastagraph	19
Leader Elastagraph-SG	21
Leader Corrugated gaskets	23
PTFE SHEETS, gaskets and tapes	25
Leader Clipperlon 2100	26
Leader Clipperlon 2110	27
Leader Clipperlon 2115	28
Leader Clipperlon 2120	29
Leader Clipperlon 2130	30
Leader Clipperlon 2135	31
Leader Clipperlon 600	32
Leader Clipperlon 660	33
LeaderTHERM NXT	34
LeaderTHERM NXT 1000	36
LeaderTHERM NXT 1010	37
Metallic gaskets	38
Leader RTJ gaskets	39
Dimensions	41
Chemical resistance guide	60
Profile overview	66
Contact	68



LEADER GASKET:

World Class Gasket Manufacturer

Leader Gasket is a manufacturer of metallic, semi-metallic and soft gasket products. Originally founded in 1989 in Baton Rouge - Louisiana, focussed on Spiral Wound technology and Specialty Equipment gaskets such as Corrugated Metal gaskets, Leader Gasket has evolved into a global manufacturer of gaskets and gasket products for various industries using the latest technologies.

Leading the industry

Today, we are the leading global provider for numerous industries, ranging from petrochemical multinationals and the automotive industry to small and medium enterprises all over the world. From our offices in Deer Park - Texas, Baton Rouge - Louisiana and Bytča - Slovakia we offer gasket solutions for every business, from mass production of standards to very specific custom-made.

Innovations

Our innovations include the patented Elastagraph technology, reducing emissions in the environment, API RTJ Rings, Leader Spiral Wound gaskets meeting the highest specs set out by the Petrochemical Industry, Kammprofiles for both pipe flanges and equipment installations and a full range of soft sheet materials. Additionally, we manufacture an array of semi metallic specialty gaskets for our OEM customers. The most recent addition was our internally manufactured Biax Process (filled and Biaxially oriented PTFE) marketed under our Clipperlon brand.

Sustainable Gasket Solutions

There are many parameters which impact the performance of a gasket. Identifying these factors and ensuring they are all optimized to provide you with a safe and sustainable flange connection is at the core of our business. This includes advanced gasket selection tools, training on-site and flange management programs for maintenance, such as Total Flange Care and Flange Integrity Management.

Technical Testing

Leader has its own in-house testing capabilities that meets the current industry standards. This allows Leader to test gaskets according to the current state of technology in accordance with industry standards (for example, standard leakage tests or pressure strength, relaxation and crushing tests) and also to distribute the required characteristic values in accordance with EN 13555. In addition to the above-mentioned tests, the sealing behaviour, as required in the VDI 2440/2200, can be determined according to previous Temperature storage.

Engineering Solutions

Leader Gasket engineers and product specialists have the know-how to provide recommendations and solutions for all your gasket needs. The engineered staff is both in-house and field rep. experienced in close cooperation all partners.

Investing in the Future

Leader Gasket invests in a sustainable future by developing new types of flange connections which further reduce emissions and increase safety. Our engineering team uses its own state of the art AMTEC test equipment, FEA analytical programs and 3d drawing programs to test and develop these new designs.



Capabilities



Engineering Team

The Leader Gasket engineers and product specialists cooperate intensively with maintenance specialists and mechanical engineers in the industry.

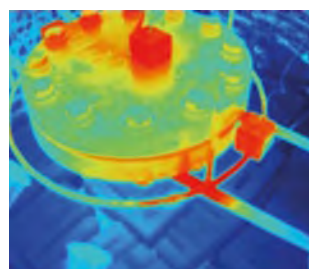
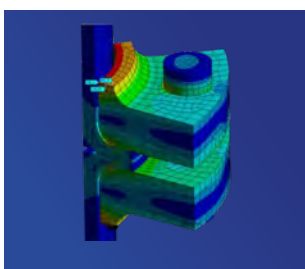
Our market know-how allows us to develop new customized solutions and techniques creating cost savings for our customers. Our Leader Gasket team is ready to provide technical expertise and support to solve existing or potential problems. We participate on project preparation and finalize complete gasket solutions.

Our special team of skilled and experienced experts provide assistance on the selection and use of Leader Gasket products being equipped with a modern laboratory.

Our engineering teams in both US and Europe are available for your request even on daily live chat via www.leadergt.com

OUR ENGINEERS ARE QUALIFIED TO HELP YOU WITH:

- ✎ Emission reduction programs
- ✎ Installation procedures
- ✎ Material & design selection
- ✎ Bolt load calculation & recommendations
EN1591-1/ASME Boiler & Vessel Code Calculations
- ✎ Bolting procedures
- ✎ Flange machining recommendations
- ✎ On-site training (Flange Integrity Management)
- ✎ Product R&D and in-house testing
- ✎ Review of corporate piping standards to implement product consolidation to reduce inventory cost
- ✎ Co-engineering of customized parts and gasket solutions
- ✎ Safety consulting and procedures



Quality

Product quality and reliability are the fundamental elements for our success as a trusted manufacturer in the industry. We go above and beyond industry standards to ensure that our products are manufactured with high quality, high performance materials and consistent, repeatable and documented procedures. All special alloys are 100% PMI tested and documented to ensure products are supplied as specified. Detailed material test reports, PMI travelers, independent testing results and other quality documentation can be provided upon request.



Materials for Manufacturing

Leader Gasket carries a plethora of raw materials from standard 304 and 316L materials to Titanium, Alloy 20, Monel, Hasteloy, and other exotics. Our material specifications, on-site vendor and incoming goods inspections assure our end customers receive only the highest quality materials on each and every order.



Testing and Development Laboratory

- AMTEC testing equipment
- Emission reduction tests and development
- Product/Production innovation
- Testing according to International Standards
- DIN 28090, EN 13555 or ASTM
- Customer specific tests and projects
- Bolting and torque calculations according EN 1591

Turnaround Support

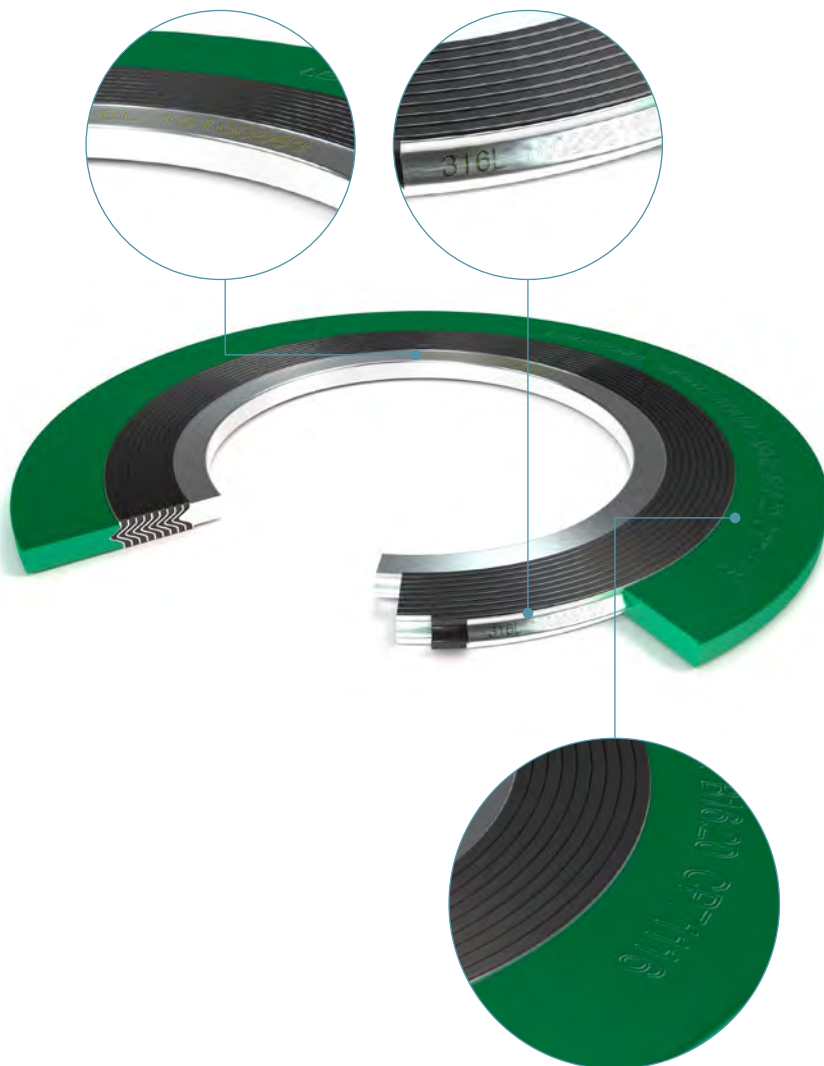
Leader Gasket offers complete support for turnarounds, plant shutdowns, and production stops for industrial companies. This involves the replacement of gaskets for chemical plants, oil refineries, power generation companies and other industrial sectors. Whether it is for emergency repairs or planned shutdowns, Leader has the management and staff in-house to carry out these stops including all logistic services needed such as on site container services. Together with its allied distributor partners Leader can offer a full service concept of supply; service and on site support.



Traceability

Traceability is the ability to verify the history, location, or application of an item by means of documented recorded identification. Material traceability is important to the aerospace, nuclear, and process industry because they frequently make use of high strength materials that look identical to commercial low strength versions.

Leader Gasket guarantees full traceability using a heat code, job number and batch code on all manufactured products. This allows easy identification of raw materials and production settings. In case of special customer request we can provide customized product traceability, documentation and certification.



ALL METAL MATERIAL PARTS AND FILLER MATERIALS OF THE STANDARD SRI SPIRAL WOUND CONSTRUCTION ARE TRACEABLE

The Spiral Wound Gasket is considered to be one of the safest and most reliable of its kind but is still often seen as a commodity. Nevertheless it is a complex product containing a configuration of Windings, Fillers, Inner and Outer rings that are wound, welded and fitted together. This is how we keep control and you can sleep tight:

- ✎ Highly detailed manufacturing specification requirements are in place to insure standardization, performance, and quality of each spiral wound gasket.
- ✎ High performance (low emissions) graphite filler is controlled with a detailed product specification and through the use of specialized TGA testing requirements for each lot of graphite material used. In process inspections by qualified inspectors in accordance with ASME B16.20 standards are performed and documented on every shipment.
- ✎ Leader Gasket in-house quick supply special gaskets are manufactured to the same stringent specification requirements.
- ✎ Traceability is achieved through detailed MTR (material test reports and certificates) documentation for inner/outer rings, metal windings, and graphite filler.
- ✎ All metal material parts and filler materials of the standard SRI Spiral Wound construction are traceable for each gasket by use of a unique traceable number (batchcode) marked on the inner/outer guide rings along with the etching of the metal winding material.
- ✎ Standard 304 & 316ss SR/SRI guide rings are painted on the face with the matching ASME color code (Green for 316 & Yellow for 304ss) for a quick visual reference when stocking.

Total Flange Care

There are many parameters which impact the performance of a gasket. Identifying these factors and ensuring they are all optimized to provide you with a safe and sustainable flange connection is at the core of our business. At Leader Gasket we call this approach Total Flange Care.

Innovation

The development of gaskets is a process that is always in motion. At Leader Gasket we operate in the forefront of this field. Our engineering team utilizes the latest techniques to develop innovative gaskets, specifically designed to perform optimally in increasingly complicated processes in various industries.

Gasket Failure?

A leaking flange connection is often called a “gasket failure”. Yet, in many cases simply replacing the gasket doesn’t solve the problem. This is because there are many factors which have a direct and indirect impact on the performance of a flange connection. The gasket itself is a very important part of the equation, but it can only perform as intended when it is properly installed and maintained.

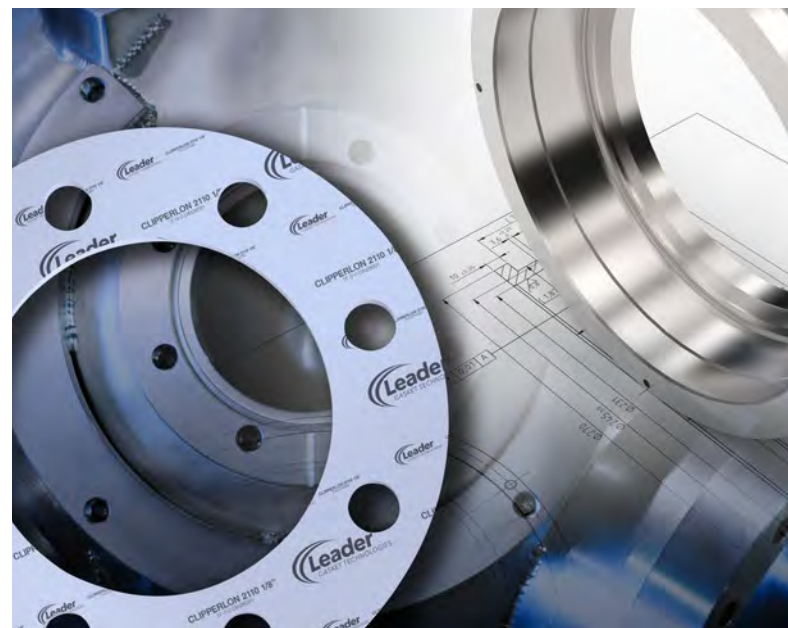
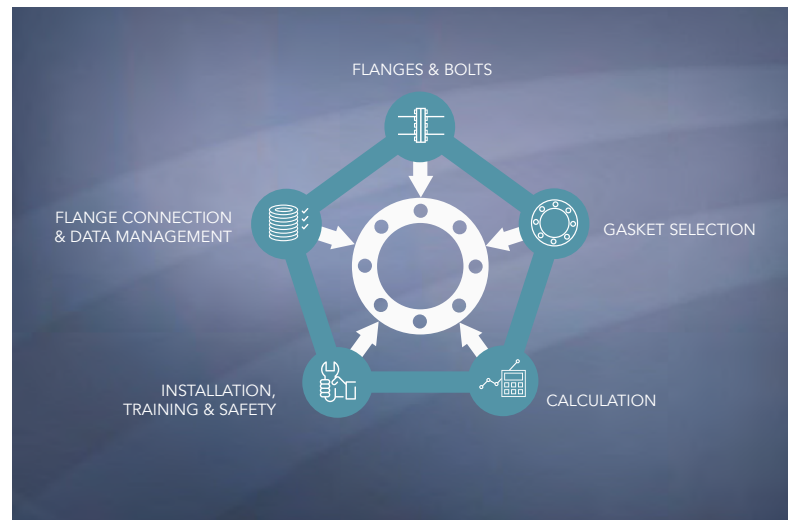
Flange Integrity Management

This why we call a leaking flange connection an “integrity problem”. Our approach to solving this problem is Flange Integrity Management. This is where we systematically identify all the contributing factors that cause the leak and establish the right approach to come up with a lasting solution.

Four Parameters

Safety and sustainability are the highest concern with industrial gaskets. Creating and maintaining a leak free flange connections is of the utmost importance. At Leader Gasket Technology we always look at the combination of the following four parameters:

- Gasket
- Flanges and bolts
- Assembly
- Operating conditions



MEETING THE HIGHEST STANDARD!

- Training mechanics / engineers EN1591-4
- Advising gasket selection
- Inspection and recommendation flange parameters
- Gasket testing
- Calculation bolt force, tightness and emission
- Flange management programs
- LDAR

Sustainable Gasket Solutions



Leaks can cause the emission of gases and vapors in pressurized industrial equipment. Losing raw materials is not only problematic because of costs. This loss also creates a multitude of risks and dangers. In the long term, certain chemicals may pose a risk to the health of workers. A leak of flammable substances increases the risk of fire and explosion. In addition, the emission of chemical substances is harmful to the environment.

Emission reduction

Gaskets and pipe connections are the greatest risk to potential leakage points and emission. In large industrial installations there are many gaskets present and when these gaskets are not reliable, total emission can soar. Leader Gasket is specialized in gaskets that reduce fugitive emissions. Through education about the proper gasket selection, proper calculations and installation advice, Leader can help any industry with emission reduction.

LEAKING IS DANGEROUS AND COSTLY!

- ✎ Unsafe situations
- ✎ Emission
- ✎ Environmental impact
- ✎ Loss of production
- ✎ Loss of product
- ✎ Cleaning cost
- ✎ Extra maintenance

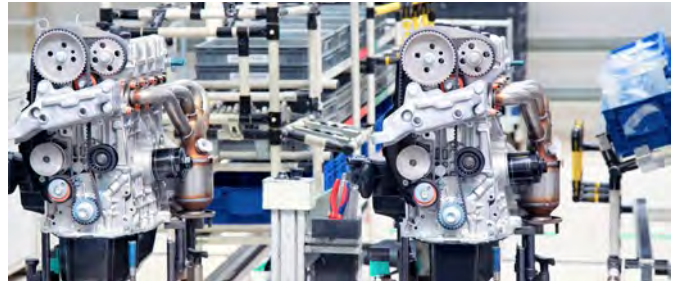
QUALITY & SAFETY STATEMENT

Quality, Safety and Sustainability are of high concern for Leader Gasket; both towards our associates, customers and communities we live in. Within the company and towards the market a clear vision on Quality and Safety has been integrated including principles. Health, safety and environmental commitments are described and implemented throughout the organization. Special teams are in place to consciously strive for improvement committed by the management. 6 Golden Rules of Safety are implemented throughout the entire organization.

Industries



Chemicals



OEM industries



Energy



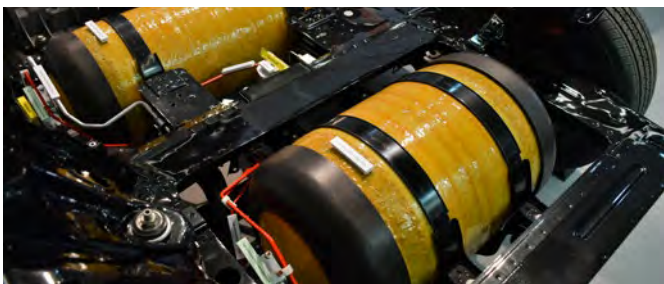
Oil & Gas



Food & Pharmaceuticals



Primary industries



Fuel cell industries



Refineries



Maritime sector

Certificates & Tests



Summary of the tests and certificates for Leader Gasket products.

Spiral Wound Gaskets -SRI

- TA-Luft
- EN13555
- BAM
- Hot Blow Out test
- Fire Safe API 6FB

Kammprofiles

- TA-Luft
- EN13555
- BAM
- Fire Safe API 6FB

Elastagraph Gaskets

- TA-Luft
- EN13555
- BAM
- Hot Blow Out test
- Fire Safe API 6FB
- DVGW

Elastagraph Gaskets with inner eyelet

- TA-Luft

Corrugated Gaskets CG

- EN13555
- Fire Safe API 6FB

Filled PTFE - Clipperlon

- TA-Luft
- Blow Out test
- FDA
- EC1935/EU10/2011
- USP

Leadertherm NXT 1000, 1010

- BAM

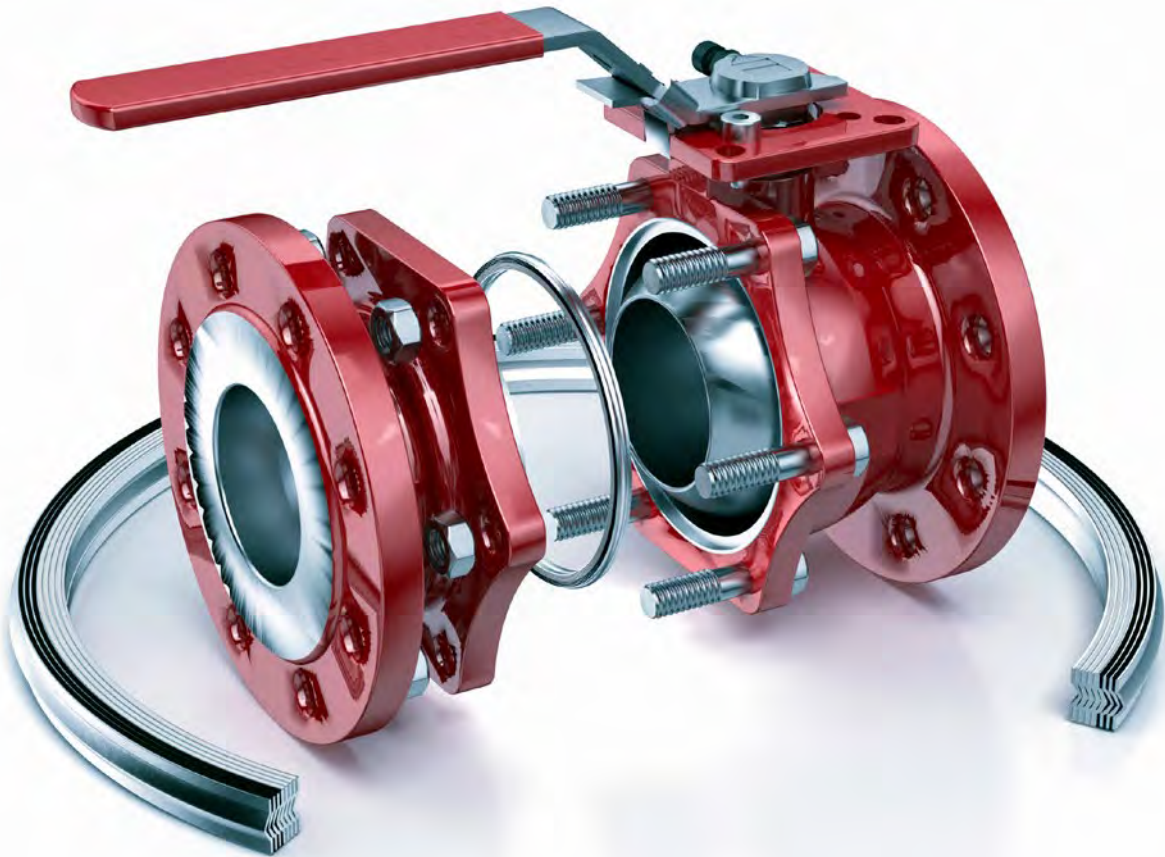
For a copy of the original, please contact customer service via www.leadergt.com

Determining the characteristic values of gasket

- Characteristic values according to EN 13555
- Qsmax and Qsmin (EN 13555)
- Pqr value (EN 13555)
- Eg module (EN 13555)
- DIN 28090, DIN 28091
- DIN 3535
- DIN 52913
- TA-Luft VD2440

OEM Custom Made Gaskets

CO-ENGINEERING SPECIAL AND CUSTOM MADE GASKETS



Leader Gasket develops and manufactures special and custom made seals and gaskets according to customer specifications for various OEM and customized applications. Our engineering team has extensive experience in working together with customers in Co engineering projects in the automotive industry and other industries where special machinery and equipment is manufactured.

Engineering team

Our engineering team can provide the engineering expertise and capability to develop, plan, design and build the solutions for any application in the OEM Industry. We pride ourselves in successfully co-engineering products with customers that meet their specific requirements with approved procedures, tests - LDC, Room temperature Leakage and others.

Special gaskets

Gaskets are produced in different styles special types for the most demanding applications in, such as:

- Automotive industry
 - Exhaust and manifold gaskets
 - Valves
 - Heat exchanger
 - Heating and cooling equipment
 - Special machinery and others

Customer base

Leader Gasket supplies special produced gaskets to many OEM customers around the world. In the automotive industry we work together with major car and truck manufacturers and component suppliers for engines.

Our approach

With both multinationals and small, specialized companies in the manufacturing industry, we sit down together at an early stage of engineering with R&D employees to work together on the perfect product.

Leader Gasket and its allied distributors has very experienced Application Engineers closely at our customers available to give advising and guiding you through the design, prototyping and testing process. By working in this way, we contribute to the achievement of your ambition to quickly and successfully introduce new products or innovative power. Starting from brainstorming on ideas followed in the end of the proces by first sample and mass production of your part.

Documentation Quality

At Leader Gasket several quality processes and documentation are in place supporting and contributing OEM and Automotiv develop, design and manufacturing projects; such as:

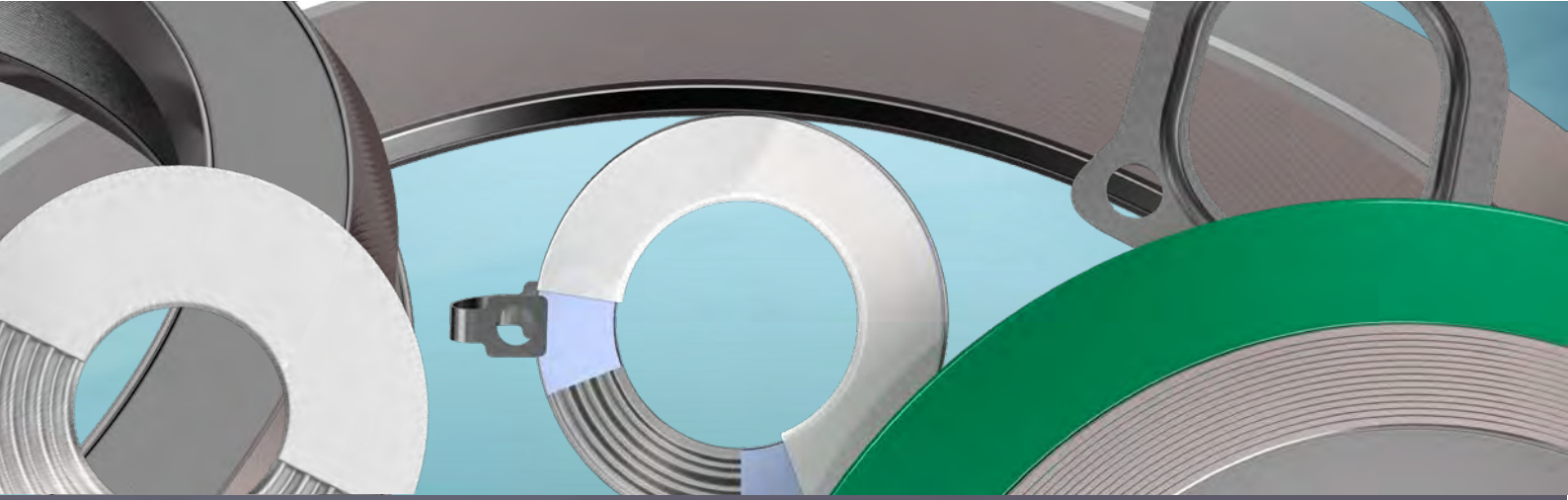
- EMPB PPAP ISIR procedure First Sample Reporting
- APQP flowchart
- Fabrication Control Plan
- Customer in house specific documentation
- Batch Control System



Engineering Team

feel free contact or challange our Engineering Team with your projects





SEMI - METALLIC GASKETS

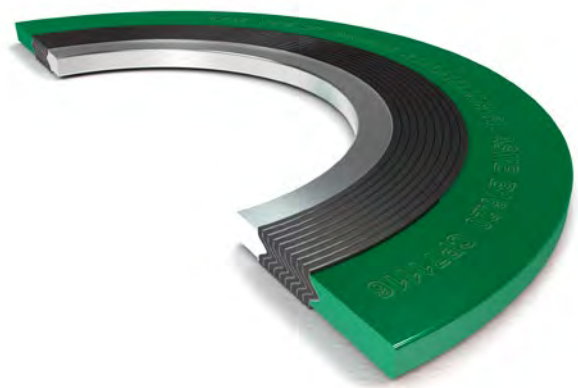
Leader Spiral Wound Gaskets

HIGH INTEGRITY SWG GASKETS

The spiral wound gasket (SWG) is without any doubt one of the most widely used metal/soft-material gaskets. The design is based on an existing concept which has proven its excellent properties over many years.

The basic principle of the spiral wound gasket consists of alternating layers of V-shaped metal coils and soft, non-metallic filling material. The first and the last coils consist only of metal in order to reinforce the spiral on the inner and outer diameters.

This 'sandwich' construction, in conjunction with the special V-shape of the spiral metal band and the properties of the filling material make the spiral wound gasket ideal for applications with high Temperature differences and associated voltage differences, joint relaxation and flange twists.



Applications

- Piping (EN/ASME)
- TA-Luft
- In the event of Temperature fluctuations
- Tongue and groove connections
- Heat exchangers
- Pressurised equipment
- Steam boilers
- High pressures

Properties

Outer ring

- Centring of the gasket
- Prevents blow-out
- Increase in mechanical strength
- Labelling
- Material: steel, stainless steel, non-ferrous metals

Inner ring

- Prevention of turbulence
- Strengthening of the gasket
- Protection against contamination of the medium
- Indispensable for PTFE filler
- Required for vacuum

Spirals

- 3.2 mm/4.5 mm/6.4 mm thickness
- Filler: Graphite, PTFE, Leadertherm NXT 1000
- Metal band: in various grades
- Actual sealing function
- Forms: round or oval

Pressure

- Max. 200 bar, depending on the installation and surface pressure

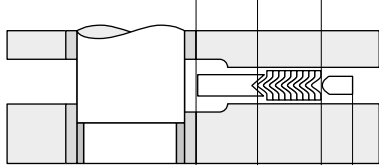
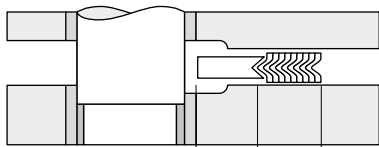
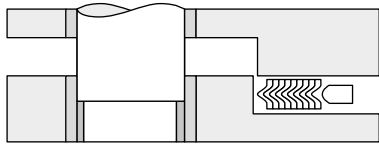
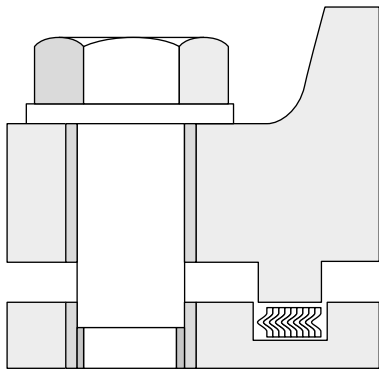
Approvals



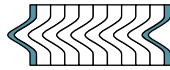
SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
S/SR/SRI			
Graphite filler	20	70	300
	300	70	145
SI/SRI			
Graphite filler	20	70	300
	300	70	250
S/SR			
PTFE filler	20	70	175
	200	70	160
SI/SRI			
PTFE filler	20	70	300
	200	70	280

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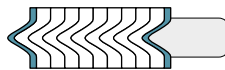
STYLES OF LEADER SPIRAL WOUND GASKETS



D1
D2
D3
D4



Style S without inner and outer ring



Style SI with inner ring



Style SR with outer ring



Style SRI with inner and outer ring



NON-METALLIC FILLERS - ASME B16.20

Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
Flexible Graphite	-350	-212	975	510	F.G.	Gray
PTFE	-400	-240	500	260	PTFE	White
LeaderTHERM NXT 1000	-350	-212	1800	1000	LT	Light Blue

COLOR CODE CHART - ASME B16.20

Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
304 Stainless Steel	-320	-195	1400	760	304	Yellow
316L Stainless Steel	-328	-200	1600	870	316L	Green
317L Stainless Steel	-150	-100	1600	870	317L	Maroon
321 Stainless Steel	-320	-195	1600	870	321	Turquoise
347 Stainless Steel	-320	-195	1600	870	347	Blue
Carbon Steel	-40	-40	1000	540	CRS	Silver
20Cb-3 (Alloy 20)	-300	-185	1400	760	A-20	Black
HASTELLOY® B 2	-300	-185	2000	1090	HAST B	Brown
HASTELLOY® C 276	-300	-185	2000	1090	HAST C	Beige
INCOLOY® 800	-150	-100	1600	870	IN 800	White
INCONEL® 600	-150	-100	2000	1090	INC 600	Gold
INCONEL® X750	-328	-200	1500	820	INX	No Color
MONEL® 400	-200	-130	1500	820	MON	Orange
Nickel 200	-320	-195	1400	760	NI	Red
Titanium	-320	-195	2000	1090	TI	Purple

Other materials available on request
 * the information listed here is not claimed to be exhaustive and serves only as a guide; despite careful content control we assume no liability or guarantee for the topicality, correctness and completeness of the information provided
 ** (to 1000 °F only after consultation)

LeaderKAM

KAMMPROFILE GASKETS

The use of kammprofile gaskets has increased enormously in recent decades - not only for the sealing of standard flanges, but also of equipment components, such as heat exchangers and containers.

LeaderKAM kammprofile gaskets with soft material layers are characterised on the one hand by a very low minimum surface pressure which is determined by the material of the support. On the other hand, the maximum permissible surface pressure is very high as this is determined by the value of the metal carrier material.

This gives the grooved gaskets with layers a very wide range of application. They are therefore almost universally applicable. The bolt force to be applied when using grooved gaskets is determined by the characteristic data of the screws.

Applications

- Flanged pipes (DIN/ANSI)
- TA-Luft
- Grooved flanges
- Heat exchanger
- Equipment
- Boilers
- High pressure



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
KV, KV9, KB9- Steel / Stainless steel carrier			
Graphite Facing	20	20	500
	300	20	400
PTFE Facing	20	25	300
	200	25	120

Latest version of productdatasheet available on www.leadergt.com



Properties

Metal Core

- Thickness: 1,5-10 mm
- Stainless steel/steel in various grades
- Depending on the thickness of the layers, the carrier material contains the precisely defined comb-like grooves

Soft material layer

- Thickness: 0.5 mm or 1 mm
- Graphite
- PTFE
- Leadertherm NXT 1010
- Silver

Pressure

- Max. 200 bar, depending on the installation and surface pressure

Types (forms)

- Round, oval, rectangular
- With seam gaps according to drawing

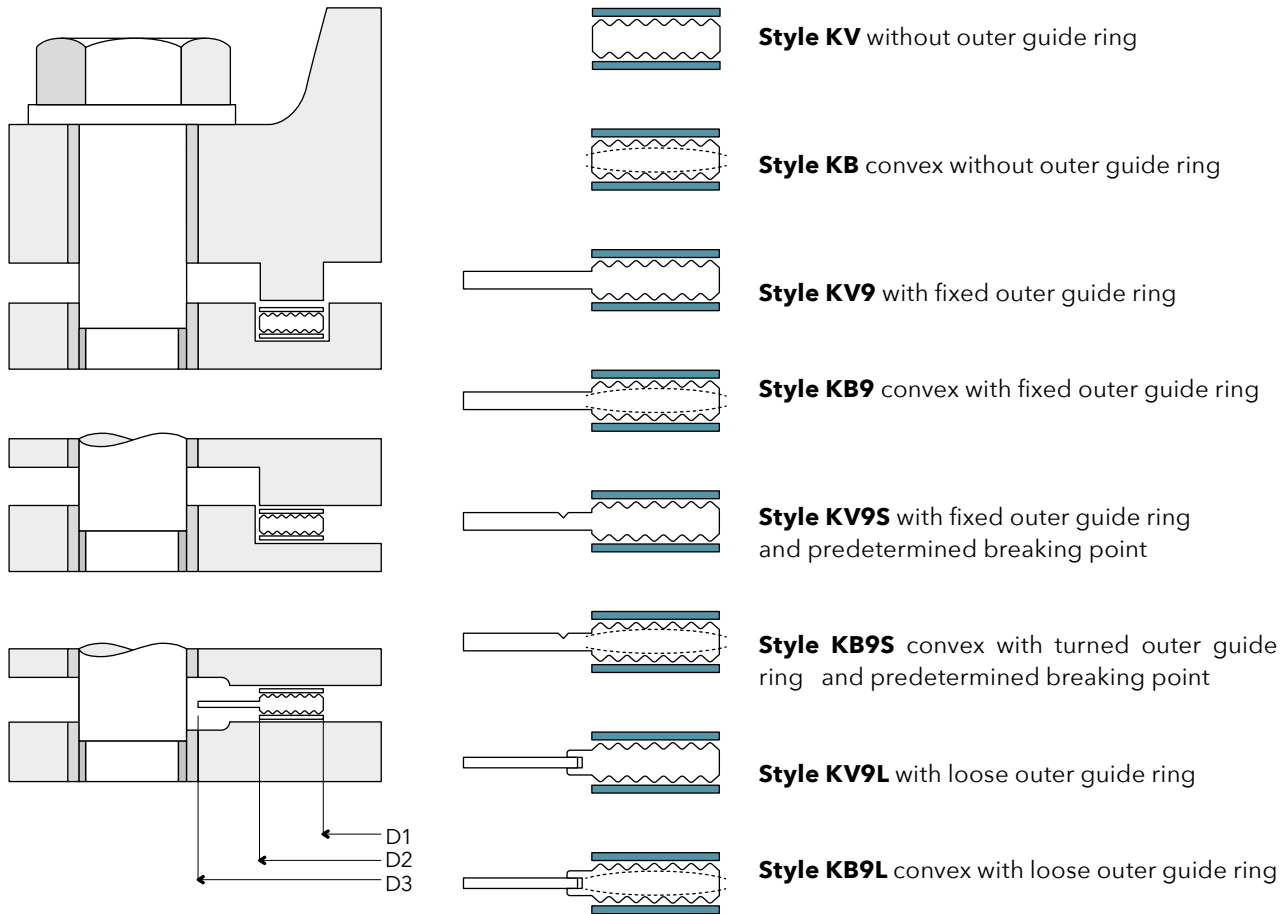
Total thickness

- Standard: 4 or 5 mm

Approvals



STYLES OF LEADERKAM KAMMPROFILE GASKET



NON-METALLIC LAYER - ASME B16.20						
Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
Ceramic	-350	-212	2000	1090	CER	Light Green
Flexible graphite	-350	-212	950	510	F.G.	Gray
PTFE	-400	-240	500	260	PTFE	White
LeaderTHERM NXT 1010	-350	-212	1800	1000	LT	Light Blue

COLOR CODE CHART - ASME B16.20						
Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
304 Stainless Steel	-320	-195	1400	760	304	Yellow
316L Stainless Steel	-328	-200	1600	870	316L	Green
317L Stainless Steel	-150	-100	1600	870	317L	Maroon
321 Stainless Steel	-320	-195	1600	870	321	Turquoise
347 Stainless Steel	-320	-195	1600	870	347	Blue
Carbon Steel	-40	-40	1000	540	CRS	Silver
20Cb-3 (Alloy 20)	-300	-185	1400	760	A-20	Black
HASTELLOY® B 2	-300	-185	2000	1090	HAST B	Brown
HASTELLOY® C 276	-300	-185	2000	1090	HAST C	Beige
INCOLOY® 800	-150	-100	1600	870	IN 800	White
INCONEL® 600	-150	-100	2000	1090	INC 600	Gold
INCONEL® X750	-328	-200	1500	820	INX	No Color
MONEL® 400	-200	-130	1500	820	MON	Orange
Nickel 200	-320	-195	1400	760	NI	Red
Titanium	-320	-195	2000	1090	TI	Purple

Other materials available on request
 * the information listed here is not claimed to be exhaustive and serves only as a guide; despite careful content control we assume no liability or guarantee for the topicality, correctness and completeness of the information provided
 ** (to 1000 °F only after consultation)

Leader Elastagraph

EMISSION REDUCTION GASKETS

Elastagraph gaskets feature a corrugated core made of stainless steel in the carrier assembly, which is seamlessly coated with flexible Graphite of different densities and thicknesses. This version provides much better seal characteristics in comparison to standard corrugated ring gaskets.

Elastagraph's corrugated form ensures a constant springback against the flange surfaces. The reduced effective seal area achieved benefits the bolt force when initial torque is applied, as the entire ring edge is not immediately compressed.

In contrast to conventional Graphite gaskets, the method of production of Elastagraph creates a type of seal without a joint. The corrugate core is completely coated with Graphite. An additional Graphite area with a higher density is applied to the internal part of Elastagraph on both sides. This creates a line pressure which significantly increases the sealing behaviour in comparison to classical gaskets. The core is also made of stainless steel and can withstand potential damage.

Applications

- Flanged Pipes (DIN/ANSI)
- TA-Luft
- Vompensates for flange irregularities
- Emission reduction

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Elastagraph			
Graphite Facing	20	20	250
	300	20	150

Latest version of productdatasheet available on www.leadergt.com



Properties

Metal Core

- Thickness: 0.6 mm
- Standard 1.4404 (316L)
- Other materials possible

Soft material layer

- Thickness: 0,5 mm or 1 mm
- Graphite: (-200 to +450°C)

Pressure

- Max. 64 bar, depending on the installation and surface pressure

Types

- Round
- Only for standard flanges IBC or RF
- Standard dimension up to DN 600 or 24 inches
- Special dimension as Elastagraph SG

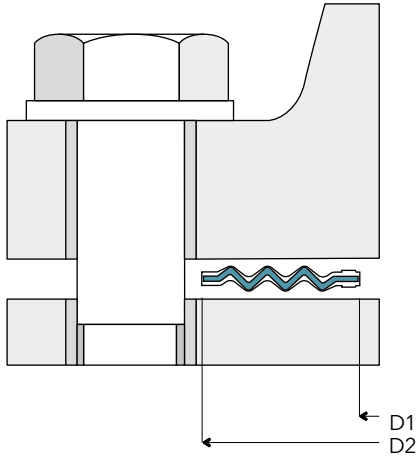
Special Features

- High compressibility
- Good sealing behaviour at low bolt forces
- Good flexibility in uneven flange surfaces
- Good flexibility even on poor surfaces
- High fault tolerance in assembly
- Very good springback function
- Good mechanical properties with Temperature fluctuations
- Very good stability (Pqr)

Total thickness

- Standard: 1.6 mm or 3.2 mm

STYLE OF LEADER ELASTAGRAPH GASKET



COLOR CODE CHART - ASME B16.20

Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
304 Stainless Steel	-320	-195	1400	760	304	Yellow
316L Stainless Steel	-328	-200	1600	870	316L	Green
317L Stainless Steel	-150	-100	1600	870	317L	Maroon
321 Stainless Steel	-320	-195	1600	870	321	Turquoise
347 Stainless Steel	-320	-195	1600	870	347	Blue
Carbon Steel	-40	-40	1000	540	CRS	Silver
20Cb-3 (Alloy 20)	-300	-185	1400	760	A-20	Black
HASTELLOY® B 2	-300	-185	2000	1090	HAST B	Brown
HASTELLOY® C 276	-300	-185	2000	1090	HAST C	Beige
INCOLOY® 800	-150	-100	1600	870	IN 800	White
INCONEL® 600	-150	-100	2000	1090	INC 600	Gold
INCONEL® X750	-328	-200	1500	820	INX	No Color
MONEL® 400	-200	-130	1500	820	MON	Orange
Nickel 200	-320	-195	1400	760	NI	Red
Titanium	-320	-195	2000	1090	TI	Purple

Other materials available on request

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** (to 1000 °F only after consultation)

Leader Elastagraph SG

EMISSION REDUCTION GASKETS

Elastagraph SG consists of a corrugated metal carrier which is coated with Graphite on both sides. The corrugated form of Elastagraph SG guarantees a very good flexibility against the flange surfaces. Applying the Graphite layer to the carrier's grooves in the manufacturing process improves the bolt force of the initial torque, as the entire ring edge is not immediately compressed. This creates a line pressure which significantly increases the sealing behaviour in comparison to classical gaskets. The core is also made of stainless steel and can withstand potential damage.



Applications

- Pipes (DIN / ANSI / Special Dimensions)
- TA-Luft
- Heat exchanger
- Equipment
- Boilers
- Compensates for flange irregularities

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Elastagraph-SG			
Graphite Facing	20	20	250
	300	20	150

Latest version of productdatasheet available on www.leadergt.com

Properties

Metal Core

- Thickness: 0.6 mm
- Standard 1.4404 (316L)
- Other materials possible

Soft material layer

- Thickness: 0.5 mm, 0.8 mm, 1 mm
- Graphite: (-200 to +450°C)

Pressure

- Max. 64 bar, depending on the installation and surface pressure

Types (forms)

- Round, square, oval
- With seam gaps according to drawing

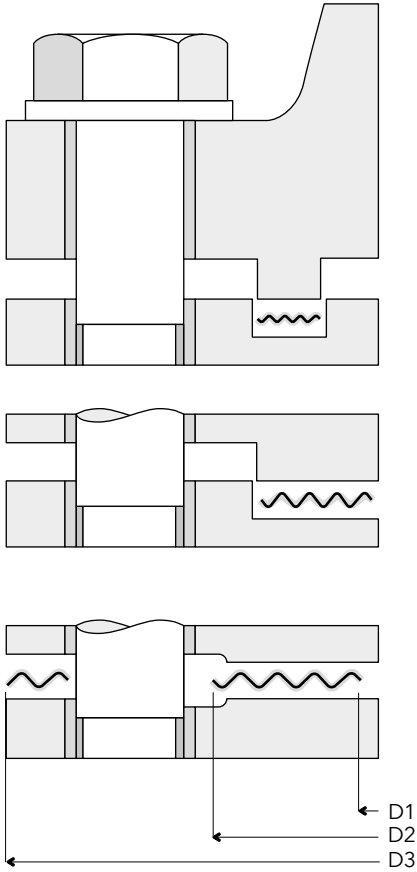
Special Features

- high compressibility
- good sealing characteristics at low bolt load
- good adaptability to rough or uneven flange surfaces
- Good adaptability even with poor surfaces
- Very high fault tolerance in assembly and operation
- Very good recovery
- Good mechanical properties at high temperature
- Manufactured to special dimensions on request

Total thickness

- Standard: approx. 2.5 mm, 3.0 mm or 3.5 mm
- Other thicknesses available on request

STYLES OF LEADER ELASTAGRAPH SG GASKET



COLOR CODE CHART - ASME B16.20						
Material	Minimum		Maximum		Abbreviation	Guide Ring Color Code
	°F	°C	°F	°C		
304 Stainless Steel	-320	-195	1400	760	304	Yellow
316L Stainless Steel	-328	-200	1600	870	316L	Green
317L Stainless Steel	-150	-100	1600	870	317L	Maroon
321 Stainless Steel	-320	-195	1600	870	321	Turquoise
347 Stainless Steel	-320	-195	1600	870	347	Blue
Carbon Steel	-40	-40	1000	540	CRS	Silver
20Cb-3 (Alloy 20)	-300	-185	1400	760	A-20	Black
HASTELLOY® B 2	-300	-185	2000	1090	HAST B	Brown
HASTELLOY® C 276	-300	-185	2000	1090	HAST C	Beige
INCOLOY® 800	-150	-100	1600	870	IN 800	White
INCONEL® 600	-150	-100	2000	1090	INC 600	Gold
INCONEL® X750	-328	-200	1500	820	INX	No Color
MONEL® 400	-200	-130	1500	820	MON	Orange
Nickel 200	-320	-195	1400	760	NI	Red
Titanium	-320	-195	2000	1090	TI	Purple

Other materials available on request

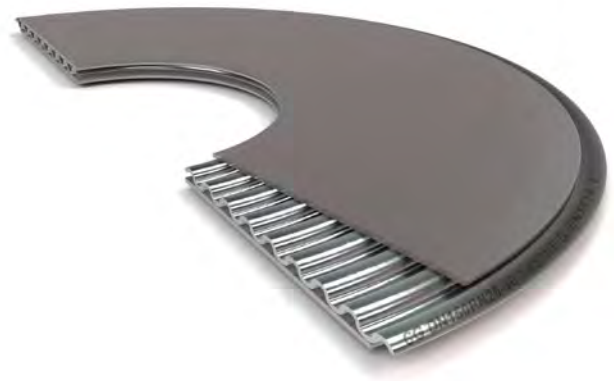
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** (to 1000 °F only after consultation)

Leader Corrugated Gaskets

These gaskets are used in soft and uneven flange connections to seal against hot gaseous media. The base plate of approx. 0.5 mm thickness is mostly made of stainless steel or soft iron. The overall height of the corrugation is approx. 1.2 - 1.5 mm. The layer is made of Graphite or PTFE (ePTFE).

The total thickness of a standard pipe gasket is approximately 3.0 mm with a 0.8-mm layer on both sides. Other layer thicknesses, such as 0.5 mm and 1 mm, are also possible. The gaskets can be manufactured in all common shapes and dimensions.



Applications

- Pipes (DIN/ANSI)
- TA-Luft (Technical Instructions on Air Quality Control)
- Grooved flanges
- Heat exchanger
- Equipment
- Boilers
- Compensation for unevenness

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
CG4, CG41-Stainless Steel carrier / Steel			
Facing Graphite	20	20	250
	300	20	150
Facing PTFE	20	25	150
	200	25	-

Latest version of productdatasheet available on www.leadergt.com

Properties

Metal Core

- Thickness: 0,5 mm, corrugationst ca. 1,2 - 1,5 mm
- Pitch diameter 3 - 4 mm
- Stainless Steel /Steel in various grades

Soft material layer

- Thickness: 0.5, 0.8 and 1 mm layers
- Graphite (-200 to +450°C)
- PTFE (-240 to +250°C)

Pressure

- Max. 64 bar, depending on the installation and surface pressure

Types (forms)

- Round, oval, rectangular
- With seam gaps according to drawing

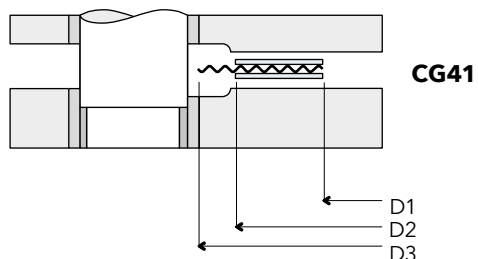
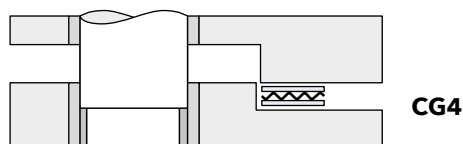
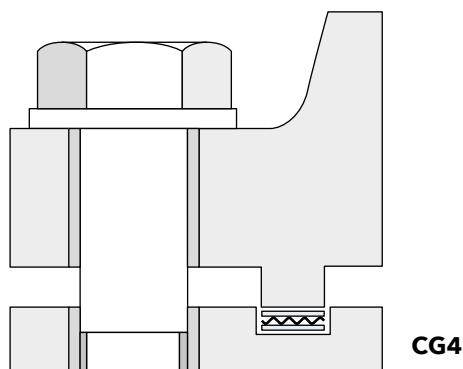
Special Features




- Very good flexibility
- Blow-out certified

Total thickness

- 2.5 mm, 3.0 mm or 3.5 mm
- Other thicknesses are available on request

STYLES OF LEADER CORRUGATED GASKETS



-  **Style CG4** fully coated
-  **Style CG4** with internal flanges
-  **Style CG41** partially coated

MATERIALS - OVERVIEW*				
MATERIALS	DIN / EN	TRADENAME	AISI / UNS	TEMPERATURE °C
1.4301	X5CrNi18-10	Stainless Steel 304	304 (S30400)	-200 to +760
1.4404	X2CrNiMo17-12-2	Stainless Steel 316L	316L (S31603)	-200 to +870
1.4571	X6CrNiMoTi17-12-2	Stainless Steel 316Ti	316Ti (S31635)	-195 to +870
1.4541	X6CrNiTi18-10	Stainless Steel 321	321 (S32100)	-195 to +870
1.0038	St 37-2	General Structural Steel	A570 Gr.36 (S235JR)	-40 to +520
1.4876	X10NiCrAlTi32-20	Incoloy 800 (Alloy 800)	ASTMB409 (N08800)	-100 to +870
2.4617	NiMo28	Hastelloy B2 (Alloy B2)	ASTMB333 (N10665)	-185 to +1090
2.4819	NiMo16Cr15W	Hastelloy C276 (Alloy C276)	ASTMB575 (N10276)	-185 to +1090
2.4816	NiCr15Fe	Inconel 600 (Alloy 600)	ASTMB168 (N06600)	-100 to +1090
2.4360	NiCu30Fe	Monel 400 (Alloy 400)	ASTMB127 (N04400)	-2060 to +920
3.7035	Ti 2	Titanium Gr. 2	ASTMB265 (R50400)	-195 to +1050
Graphite ≥98%		-	-	-200 to +450**
Graphite ≥99.85%		-	-	-200 to +450**
PTFE		-	-	-240 to +250
ePTFE		-	-	-240 to +250

Other materials available on request

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** (to +550 only after consultation)



PTFE SHEETS, GASKETS AND TAPES

Leader Clipperlon 2100

MODIFIED PTFE SHEET (GASKET) WITH SILICA FILLER

The finely divided silica filler gives a very good cold flow resistance and good stress retention properties, even at elevated temperatures. Because of the low diffusion properties and uniform structure, Clipperlon 2100 is the ideal sealing material for applications with the highest demands for low emissions.



Applications

- Pipes (DIN/ANSI)
- TA-Luft
- Grooved flanges
- Heat exchanger
- Equipment
- Cable glands
- For high surface pressure
- For highly aggressive media
- In the full pH range
- Temperature-stressed components

SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2100 2 mm	20	25	150
	200	25	100

Latest version of productdatasheet available on www.leadergt.com

Properties

- Can be used from **-240°C to approx. 240°C**, depending on the installation and operating conditions
- **Max. 85 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% modified PTFE with inorganic filler
- Filling: Silica
- Greatly reduced cold flow
- High stability under thermal load
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm, special format available

Thickness

- 0,65 mm 1 mm 1,5 mm 2 mm 3 mm

Approvals



Leader Clipperlon 2110

MODIFIED PTFE SHEET (GASKET) WITH HOLLOW GLASS MICROSPHERE FILLER

Uniform version of the hollow microsphere filler leads to a low density material with low sealing stress and good adaptability to rough or uneven flanges. Low leakage rate and low creep leads to safe sealing. Clipperlon 2110 is a general - purpose PTFE sealing material for all flange connections, also for flanges with easily damaged sealing surfaces (including glass lining) and it also has good electrical insulating properties for where electrical isolation is required.



Applications

- Flanged Pipes (DIN/ANSI)
- TA-Luft
- Glass, ceramic or plastic flanges
- Enamelled pipe flanges
- Steel flanges
- Heat exchanger
- Equipment
- For low surface stress sealing
- For highly aggressive media
- In the full pH range.
- For damaged sealing surfaces
- For pressure-sensitive components

Properties

- Can be used from **-240°C to approx. 240°C**, depending on the installation and operating conditions
- **Max. 55 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% modified PTFE filled with micro-hollow glass balls
- Greatly reduced cold flow
- High compressibility and flexibility
- Very good resistance
- Residue free removal
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm

Thickness

- 0,65 mm 1 mm 1,5 mm 2 mm 3 mm

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2110 2 mm	20	15	150
	200	15	70

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 2115

CLASS USP VI

HIGH PURITY FOR FOOD & PHARMA INDUSTRY

NATURAL WHITE MODIFIED PTFE PLATE (SEAL) WITH HOLLOW GLASS MICROSPHERES

Modified PTFE, free of pigments, specifically for pharmaceutical, food, and applications where high purity is required.

Uniform distribution of the hollow microsphere filler leads to a low density material with low sealing stress and good adaptability to rough or uneven flanges. Low leakage rate and low creep leads to safe sealing. Clipperlon 2115 is a general - purpose PTFE sealing material for all flange connections, also for flanges with easily damaged sealing surfaces (including glass lining) and it also has good electrical insulating properties for where electrical isolation is required.



Applications

- Flanged Pipes (DIN/ANSI)
- TA-Luft
- Glass, ceramic or plastic flanges
- Enamelled pipe flanges
- Steel flanges
- Heat exchanger
- Plant / Containers
- For low surface stress sealing
- For highly aggressive media in the full pH range.
- For damaged sealing surfaces
- For pressure-sensitive components
- Direct contact with medium

Properties

- **Can be used from -240°C to approx. 240°C**, depending on the installation and operating conditions
- **Max. 55 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% modified PTFE filled with hollow glass microspheres
- Greatly reduced cold flow
- High compressibility and flexibility
- Very good heat and chemical resistance
- Residue free removal
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm

Thickness

- 0,65 mm 1 mm 1,5 mm 2 mm 3 mm
- (special thicknesses are available)

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2115 2 mm	20	15	150
	200	15	70

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 2120

MODIFIED PTFE SHEET (GASKET) WITH BARIUM SULFATE FILLER

Modified PTFE gasket material containing biaxial orientated chains to obtain a tight seal for demanding applications. Clipperlon 2120 is a very dense material with low compressibility, high recovery and low creep properties. Off-white in color and produced with Modified PTFE and barium sulfate filler. Clipperlon 2120 particularly suitable for use with hydrofluoric acid and chlorine applications and a wide variety of different media across the whole pH-range. Due to the high density this material is highly recommended for applications with monomers to avoid the 'popcorning' effect. This effect will be result when the monomer enters the micro-voids of the PTFE



Applications

- Flanged Pipes (DIN/ANSI)
- Chlorine Applications
- Good electronical insulation propoerties
- TA-Luft
- Steel flanges
- Heat exchanger
- Equipment
- Chlorine Applications
- For highly aggressive media
- In the full pH range

Properties

- **Can be used from -240°C to approx. 240°C**, depending on the installation and operating conditions
- **Max. 55 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% modified PTFE filled with barium sulfate
- Greatly reduced cold flow
- High compressibility and flexibility
- Very good resistance
- Residue free removal
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm

Thickness

- 0,65 mm 1 mm 1,5 mm 2 mm 3 mm

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2120 2 mm	20	25	150
	200	25	100

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 2130

100% PURE MULTI-DIRECTIONAL EXPANDED PTFE

Clipperlon 2130 gasket sheets are made of 100% pure, multi-directional expanded PTFE, with virtually unlimited chemical resistance. When installed, Clipperlon gaskets provide exceptionally good adaptability to flange roughness and unevenness. A high surface pressure is maintained in operation under pressure and Temperature load.

Clipperlon 2130 achieves very good stability and tightness with good blow-out resistance especially in demanding steel flange applications. The good resistance behavior of the material leads to increased operating safety, even in changing operating conditions.



Applications

- Flanged Pipes (DIN/ANSI)
- TA-Luft
- Steel and enamel flanges
- Heat exchanger
- Equipment
- For high surface stress
- For highly aggressive media
- In the full pH range.
- For damaged sealing surfaces

Properties

- **Can be used from -240°C to approx. 230°C**, depending on the installation and operating conditions
- **Max. 55 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% pure multi-directional expanded PTFE
- No cold flow
- Good adaptability to surface irregularities
- Low creep relaxation
- Residue free removal
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm

Thickness

- 0,5 mm 1 mm 1,5 mm 2 mm 3 mm
- (special thicknesses are available)

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2130 2 mm	20	15	150
	200	15	70

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 2135

FOOD & PHARMA CONFORMING MULTIDIRECTIONAL ePTFE

Clipperlon 2135 gasket sheets are made of 100% pure, multi-directional expanded PTFE, with virtually unlimited chemical resistance. When installed, Clipperlon gaskets provide exceptionally good adaptability to flange roughness and unevenness. A high surface pressure is maintained in operation under pressure and temperature load.

Clipperlon 2135 achieves very good stability and tightness with good blow-out resistance especially in demanding steel flange applications. The good resistance behaviour of the material leads to increased operating safety, even in changing operating conditions.



Applications

- Flanged Pipes (DIN/ANSI)
- TA-Luft
- Steel and enamel flanges
- Heat exchanger
- Plant / Containers
- For high surface stress
- For highly aggressive media
- in the full pH range.
- For damaged sealing surfaces
- Ink - free sheet marking for food / pharma application

Properties

- **Can be used from -240°C to approx. 230°C**, depending on the installation and operating conditions
- **Max. 55 bar**, depending on the installation and operating conditions (*- pressure and temperatures not to be used simultaneously)
- 100% pure multi-directional expanded PTFE
- Embossed marking, ink free
- No cold flow
- good adaptability to surface irregularities
- Low creep relaxation
- Residue free removal
- Chemically inert (with the exception of melted alkali metals and elemental fluorine)

Sheet format

- 1500 x 1500 mm

Thickness

- 0,5 mm 1 mm 1,5 mm 2 mm 3 mm
- (special thicknesses are available)

Approvals



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
2135 2 mm	20	15	150
	200	15	70

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 600

MONODIRECTIONAL ePTFE JOINT SEALANT

Leader Clipperlon 600 Joint Sealant is made from 100% pure expanded PTFE.

The universal gasket tape forms a thin, but yet strong, reliable gasket under compression, that is highly resistant to aggressive media and chemically inert.

Even for the sealing of large, complex and damaged flanges - just peel of the covering paper from the adhesive backing and stick the Joint Sealant tape to the sealing surface - overlap the endings and close the jointing.



Sealing characteristics

- chemically inert
- highly compressible and conformable
- easy and quick installation
- ideal for large sealing surfaces
- reduces scrap and sealing costs

Chemical compatibility, pressure and temperature

- Particularly for use with aggressive chemicals from pH 0 to 14 (except for molten alkali metals and elemental fluorine gas)
- Pressure up to 40 bar (higher pressures depending on the individual installation)
- Temperature from -240 °C up to +200 °C

Delivery options

- Joint Sealant standard sizes and roll lengths

Approvals and certificates

- DVGW
- TÜV - MUC-KSP-A066
- BAM for gaseous Oxygen
- FDA 21 CFR 177.1550 (PTFE)
- FDA 21 CFR 175.105 (Adhesive)
- USP Class VI (not intended for implantation into the human body) on PTFE
- TA-Luft for steel components
- EC1935/EU10/2011



JOINT SEALANT STANDARD SIZES AND ROLL LENGTHS:

Size [mm]	Spool Length [m]	
3 x 1		25
3 x 1,5		25
5 x 2		25
7 x 2,5		25
10 x 3	10	25
12 x 4	10	25
14 x 5	10	25
17 x 6	10	
20 x 7	5	10
25 x 8	5	10

Latest version of productdatasheet available on www.leadergt.com

Leader Clipperlon 660



MULTIDIRECTIONAL ePTFE GASKET TAPE

Leader Clipperlon 660 is the new generation of multidirectionally expanded PTFE gasket tapes for use in pipeline and apparatus flanges.

The optimized fibre structure of this material leads to significantly improved creep resistance and a lower compressive creep, compared to the products used so far. Leader Clipperlon 660 is self-adhesive on one side, flexible and compressible. Due to the high conformability the gasket adapts optimally to flange roughness and unevenness.

Leader Clipperlon 660 is made from 100% pure multidirectionally expanded PTFE. Therefore it offers an excellent chemical resistance, also in highest demanding applications.

Due to the use of high quality raw materials and the regulated manufacturing process this gasket tape is GMP conforming.

Sealing characteristics

- chemical inert
- high creep resistance
- highly conformable to the sealing surface
- low leak rate
- suitable for high temperatures
- individual shaping and fast assembly

Chemical compatibility, pressure and temperature

- Particularly for use with aggressive chemicals from pH 0 to 14 (except for molten alkali metals and elemental fluorine gas)
- Pressure up to 55 bar (higher pressures depending on the individual installation)
- Temperature from -240 °C up to +230 °C

Delivery options

- Gasket Tape Widths from 10 mm to 65 mm
- Thickness 2 mm, 3 mm, 6 mm and 9 mm
- Standard Roll Length 10 m

Approvals and certificates

- FDA 21 CFR 177.1550 (PTFE)
- FDA 21 CFR 175.105 (Adhesive)
- EC1935 (10/2011 - 2023/2006)
- USP Class VI (not intended for implantation into the human body) on PTFE
- BAM for gaseous and liquid Oxygen
- Blow-Out certified acc. VDI 2200
- TA-Luft for steel components
- TA-Luft for glass lined components
- EC1935/EU10/2011



SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
Clipperlon			
660 3 mm	20	19	150
	200	19	100

Latest version of productdatasheet available on www.leadergt.com



Leader**THERM** NXT

LeaderTHERM NXT

THE NEXT GENERATION IN EXTREME TEMPERATURE SEALING

LeaderTHERM NXT consists of a family of modified phlogopite flake structured materials. Phlogopite, an aluminumsilicate of mineral origin, has a lamellar and non fibrous structure, representing an excellent solution at high temperatures.

This material composition gives a low weight loss and stable material structure at extremely high temperatures.

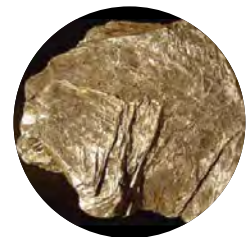
Therefore LeaderTHERM NXT leads to an improved tightness (low emission), a broad chemical as well as oxidation resistance.

Modified phlogopite mica solution with outstanding performance

- Extreme temperature flange gasket material
- Effective tightness even at higher temperatures (up to 1000°) and pressures
- Low weight loss at extreme conditions
- Non combustible
- Oxidation resistance
- Sustainable solution
- BAM approval

Phlogopite is an important and relatively common end-member composition of biotite. Phlogopite micas are found primarily in igneous rocks, although it is also common in contact metamorphic aureoles of intrusive igneous rocks with magnesian country rocks and in marble formed from impure dolomite.

LeaderTHERM nxt is the ideal alternative for graphite gaskets that are attacked by oxidation



Applications

Exhaust gas systems for

- Turbo chargers
- Catalyst cracking systems
- High temperature gas boilers and equipment
- NOx containing applications
- Power generation

Industries

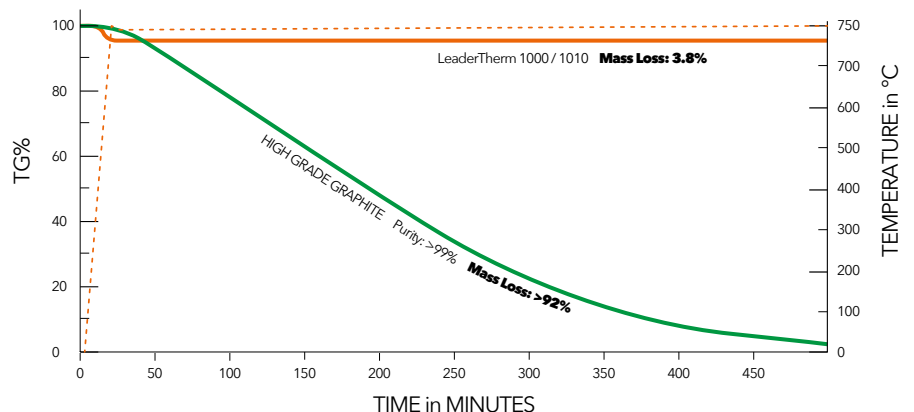
- Marine and land base machinery
- Automotive and OEM
- Refining and Petrochemical
- Chemical Processing
- Basic Industry, Steel, Pulp & Paper
- Incineration Processes

Availability

- LeaderTHERM NXT 1000 filler material for LEADER SR/SRI Spiral Wound Gasket
- LeaderTHERM NXT 1010 facing material for LeaderKAM kammprofile gaskets

Comparison of Mass Loss / Temperature

- Behaviour at 750°C / 1382F
- Leadertherm NXT 1000 / 1010 versus Graphite



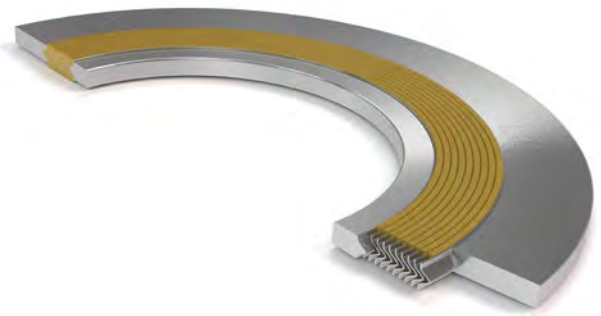
Temperature: 750°C / 1382F
 Time: 8 h
 Atmosphere: Air

- Temperature
- Mass loss LeaderTHERM NXT 1000 / 1010
- Mass loss Graphite

LeaderTHERM NXT 1000

GAS TIGHT HIGH TEMPERATURE FILLER FOR SPIRAL WOUND GASKETS

LeaderTHERM NXT 1000 is a filler for spiral wound gaskets for critical HIGH temperature services. The gasket consists of specially treated phlogopite mica in combination with a profiled metal winding. The gasket can be supplied in with/or without inner and/or outer ring. To suit specific applications, it is possible to select the metal winding and inner/outer rings.



Sealing characteristics

- good leak rate; even at high temperature
- for fluctuating temperatures
- non ageing
- outstanding chemical resistance
- non combustible

Delivery options

- Type
 - S: sealing element only
 - SI: sealing element and inner ring
 - SR: sealing element and outer ring
 - SRI: sealing element and inner and outer ring
- According to ASME B16.20 and to EN1514-2
- Special dimensions according customer drawing (non-standard flanges)

TABLE 1: TECHNICAL DATA

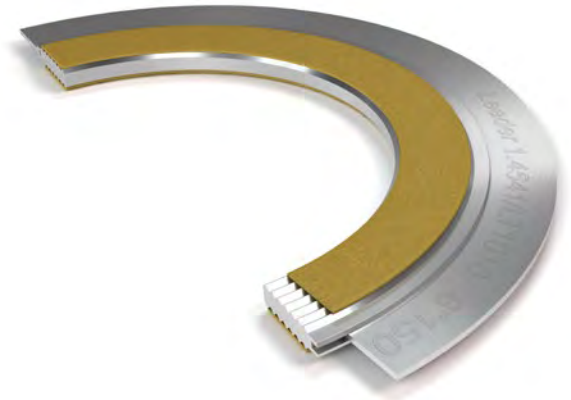
	Norm	Value	Unit
Minimal initial stress		70	MPa
Maximum initial stress		300	MPa
Minimum temperature			°C
Maximum temperature		1000*	°C
Maximum pressure**		300**	bar
Density filler		1,2	g/cm3
Leachable chloride content		10	ppm
Leachable fluorine content		10	ppm
M-Factor		3	
Y-Factor		10000	psi

* for filler / ** depends on flange construction

LeaderTHERM NXT 1010

GAS TIGHT HIGH TEMPERATURE FACING FOR KAMMPROFILE GASKETS

Gasket facing for critical HIGH temperature services which require long life time and low leakage. The gasket consists of specially treated phlogopite mica structured layer material in combination with a grooved Kammprofile carrier ring. The gasket can be supplied with or without outer ring. To suit specific applications it is possible to select special materials.



Sealing characteristics

- good leak rate; even at high temperature
- for fluctuating temperatures
- non ageing
- outstanding chemical resistance
- non combustible

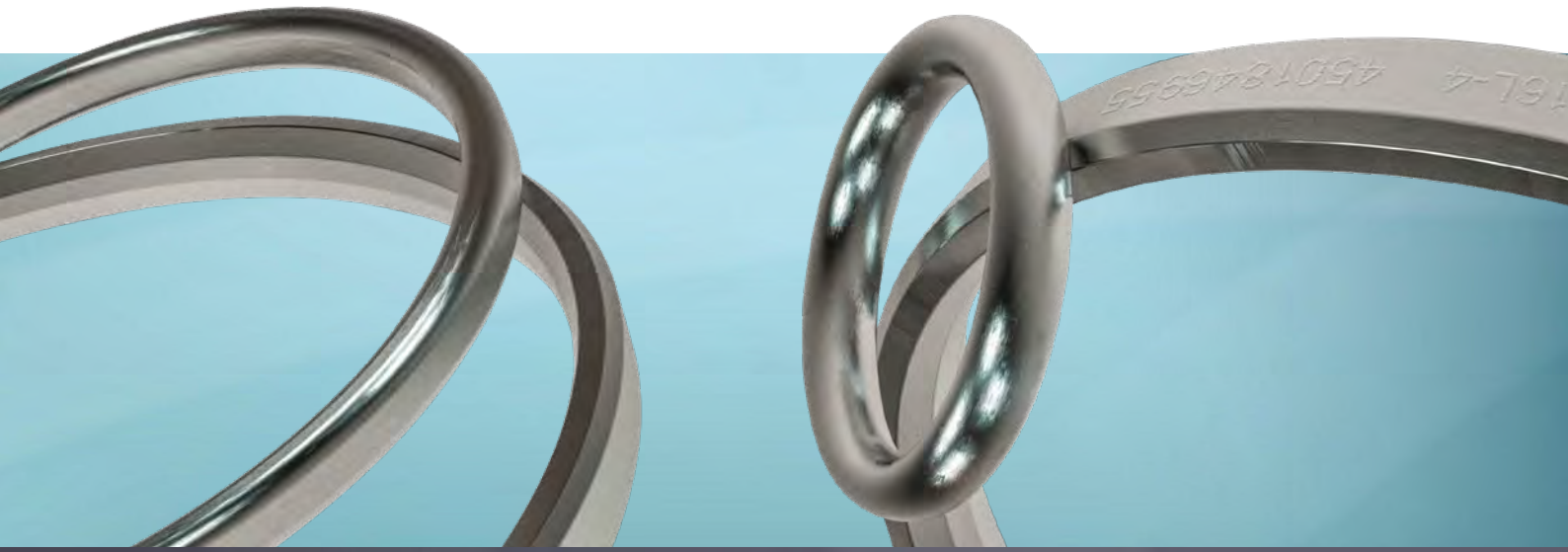
Delivery options

- Type as end product LeaderKAM/LeaderTHERM layer
 - KV without outer guide ring
 - KB convex without outer guide ring
 - KV9(S) with integrated outer ring
 - KB9(S) with integrated outer ring, convex
 - KV9L with loose outer ring
 - KB9L with loose outer ring, convex
- According to ASME B16.20 and to EN1514-2
- Special dimensions according customer drawing (non-standard flanges)

TABLE 1: TECHNICAL DATA

	Norm	Value	Unit
Minimal initial stress		20	MPa
Maximum initial stress		300	MPa
Minimum temperature			°C
Maximum temperature		1000*	°C
Maximum pressure**		300**	bar
Density filler		1,2	g/cm3
Leachable chloride content		10	ppm
Leachable fluorine content		10	ppm
M-Factor		3,5	
Y-Factor		3000	psi

* for layer material only / ** depends on flange construction



METALLIC GASKETS

Leader RTJ

RING TYPE JOINT GASKETS

Leader RTJ gaskets are solid, full metal gaskets with a special profile, for use in special flanges. Ring Joint Gaskets (RTJ) are designed for use under high pressures and Temperatures. They are used primarily in the (petro)chemical industry.

Dimensions and profiles are defined in the standards API 6A, ASME B 16.20 and ISO 7483.

The contact surfaces between RTJ gaskets and flanges are relatively small so that a very high surface pressure can be realised. This is necessary to push the sealing material into the uneven areas of the flange. In order to avoid damage to the flanges, it is important that the sealing material is softer than the material of the flanges. For this reason, the API 6A specifies maximum values for the hardness of different materials for RTJ seals.

Applications

- Piping (RTJ)
- Very high pressures
- Refinery
- Gas Industry
- Petrochemicals
- High pressure valves
- Gas compressors

SURFACE PRESSURE LIMITS			
STYLE	TEMP. °C	min. MPa	max. MPa
RTJ-Gasket			
Soft iron	20	240	520
	300	240	300
Stainless steel	20	330	750
	200	330	620

Latest version of productdatasheet available on www.leadergt.com



Properties

Metal

- Various steels and stainless steels in accordance with material table

Style

- R-Oval
- R- Octogonal
- RX
- BX

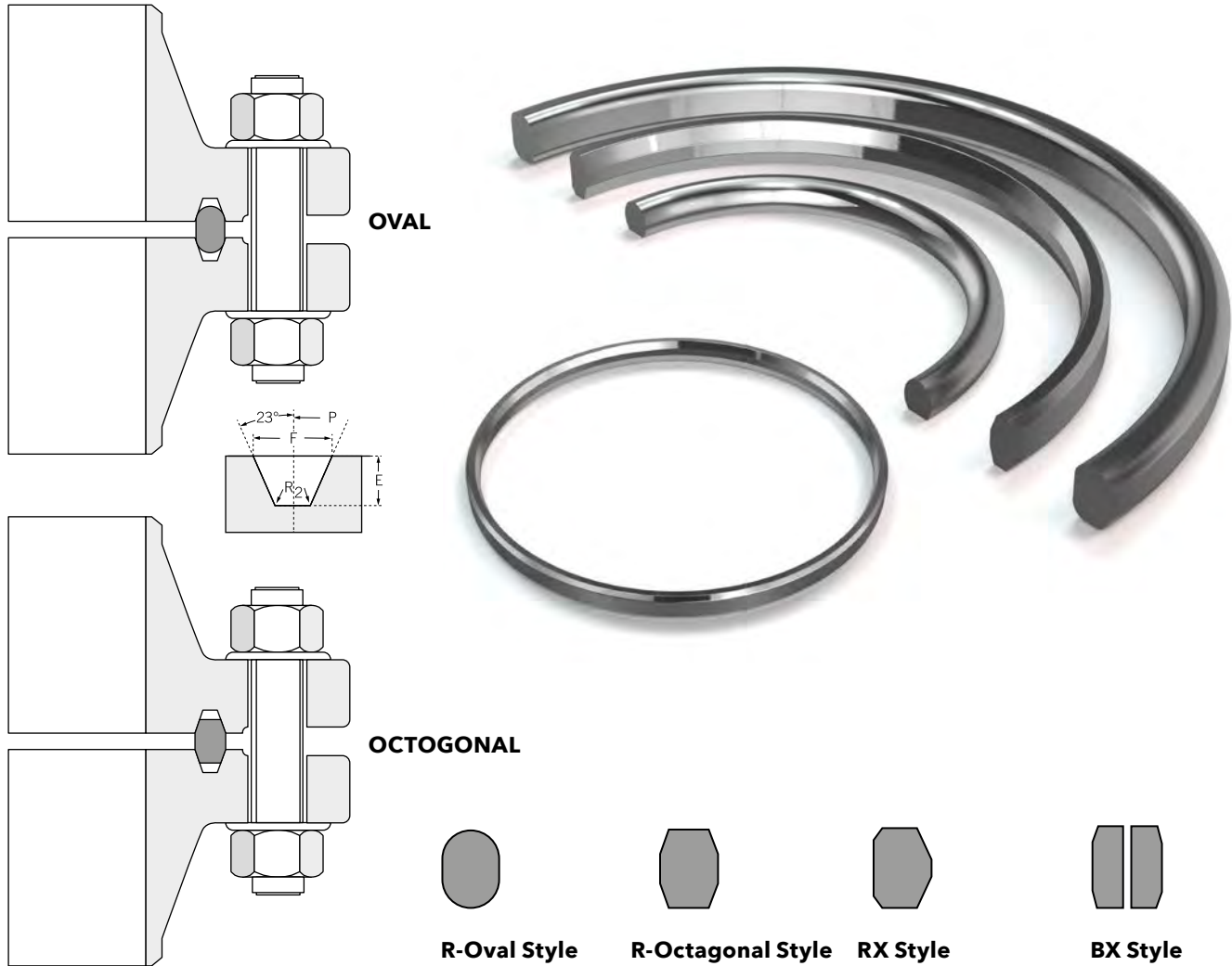
Pressure

- Max. 400 bar, depending on the installation and surface pressure

Types

- In accordance with API 6A, ASME B16.20
- Special dimension

STYLES OF LEADER RTJ GASKET



MATERIALS - OVERVIEW*								
DIN / EN DESIGNATION	MATERIAL	AISI ASTM UNS	HARDNESS (MAX)*		TEMPERATURE (°C)		DENSITY (g/cm ³)	
			BRINELL HB	ROCKWELL B	min.	max.		
Soft Iron	-	-	90	52	-60	500	7,9	
12CrMo19-5	1.7362	A182-F5 (S50100)	ca. 130	72	-40	650	7,9	
X5CrNi18-10	1.4301	(S30400)	ca. 160	83	-200	760	7,9	stainless steel 304
X2CrNi19-11	1.4306	(S30403)	ca. 160	83	-200	760	7,9	stainless steel 304 L
X5CrNiMo 17-12-2	1.4401	(S31600)	ca. 160	83	-200	870	7,9	stainless steel 316
X2CrNiMo 17-12-2	1.4404	(S31603)	ca. 160	83	-195	870	7,9	stainless steel 316 L
X6CrNiMoTi17-12-2	1.4571	(S31635)	ca. 160	83	-195	870	7,9	stainless steel 316 Ti
X6CrNiTi 18-10	1.4541	(S32100)	ca. 160	83	-195	870	7,9	stainless steel 321
X6CrNiNb 18-10	1.4550	(S34700)	ca. 160	83	-195	870	7,9	stainless steel 347
X15CrNiSi 20-12	1.4828	(S30900)	-	-	-110	1000	7,9	stainless steel 309
NiCr15Fe	2.4816	ASTMB168 (N06600)	-	-	-100	1090	8,4	Inconel 600
X10NiCrAlTi32-20	1.4876	ASTMB409 (N08800)	-	-	-1010	870	8,0	Incoloy 800
NiCr21Mo	2.4858	ASTMB424 (N08825)	-	-	-110	450	8,1	Incoloy 825
NiMo28	2.4617	ASTMB333 (N10665)	-	-	-200	450	9,2	Hastelloy B2
NiMo16Cr15W	2.4819	ASTMB575 (N10276)	-	-	-185	1090	8,9	Hastelloy c276

Other materials available on request

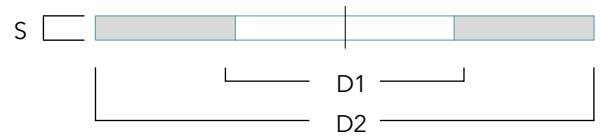
* the information listed here is not claimed to be exhaustive and serves only as a guide; despite careful content control we assume no liability or guarantee for the topicality, correctness and completeness of the information provided

DIMENSIONS

Flange gaskets*

Gaskets according to EN 1514-1 (1997)

For flanges in accordance with EN 1092-1-2-3-4



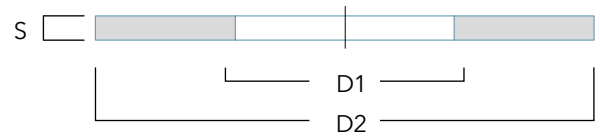
PN	FORM IBC								SR	TG	
	6-40	64	6	10	16	25	40	64		D1	D2
DN	D1	D1	D2	D2	D2	D2	D2	D2	D2	D1	D2
10	18	18	39	46	46	46	46	56	34	24	34
15	22	21	44	51	51	51	51	61	39	29	39
20	27	25	54	61	61	61	61	72	50	36	50
25	34	30	64	71	71	71	71	82	57	43	57
32	43	41	76	82	82	82	82	88	65	51	65
40	49	47	86	92	92	92	92	103	75	61	75
50	61	59	96	107	107	107	107	113	87	73	87
65	77	73	116	127	127	127	127	138	109	95	109
80	89	86	132	142	142	142	142	148	120	106	120
100	115	110	152	162	162	168	168	174	149	129	149
125	141	135	182	192	192	194	194	210	175	155	175
150	169	163	207	218	218	224	224	247	203	183	203
200	220	210	262	273	273	284	290	309	259	239	259
250	273	264	317	328	329	340	352	364	312	292	312
300	324	314	373	378	384	400	417	424	363	343	363
350	356	360	423	438	444	457	474	486	421	395	421
400	407	415	473	489	495	514	546	543	473	447	473
450	458		528	539	555	564	571		523	497	523
500	508		578	594	617	624	628		575	549	575
600	610		679	695	734	731	747		675	649	675
700	712		784	810	804	833	-		777	751	777
800	813		890	917	911	942	-		882	856	882
900	915		990	1017	1011	1042	-		987	961	987
1000	1016		1090	1124	1128	1154	-		1092	1062	1092
1100	1120		-	1231	1228	1254	-		-	-	-
1200	1220		1307	1341	1342	1364	-		-	-	-
1400	1420		1524	1548	1542	1578	-		-	-	-
1500	1520		-	1658	1654	1688	-		-	-	-
1600	1620		1724	1772	1764	1798	-		-	-	-
1800	1820		1931	1972	1964	2000	-		-	-	-
2000	2020		2138	2182	2168	2230	-		-	-	-
2200	2220		2348	2384	-	-	-		-	-	-
2400	2420		2558	2594	-	-	-		-	-	-
2600	2620		2762	2794	-	-	-		-	-	-
2800	2820		2972	3014	-	-	-		-	-	-
3000	3020		3172	3228	-	-	-		-	-	-
3200	3220		3382	-	-	-	-		-	-	-
3400	3420		3592	-	-	-	-		-	-	-
3600	3620		3804	-	-	-	-		-	-	-

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Flange gaskets*

Gaskets according to ASME B16.21 (2011)

For flanges according to ASME/ANSI B16.5



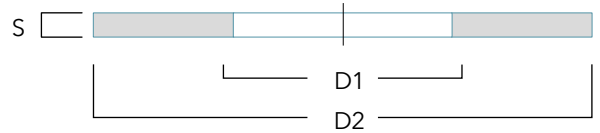
LBS	150		300		400		600		900		1500	
	D1	D2	D1	D2	D1	D2	D1	D2	D1	D2	D1	D2
1/2"	21	48	21	54	21	54	21	54	21	64	21	64
3/4"	27	57	27	67	27	67	27	67	27	70	27	70
1"	33	67	33	73	33	73	33	73	33	79	33	79
1 1/4"	42	76	42	83	42	83	42	83	42	89	42	89
1 1/2"	48	86	48	95	48	95	48	95	48	98	48	98
2"	60	105	60	111	60	111	60	111	60	143	60	143
2 1/2"	73	124	73	130	73	130	73	130	73	165	73	165
3"	89	137	89	149	89	149	89	149	89	168	89	175
3 1/2"	102	162	102	165	102	162	102	162				
4"	114	175	114	181	114	178	114	194	114	206	114	210
5"	141	197	141	216	141	213	141	241	141	248	141	254
6"	168	222	168	251	168	248	168	267	168	289	168	283
8"	219	279	219	308	219	305	219	321	219	359	219	352
10"	273	340	273	362	273	359	273	400	273	435	273	435
12"	324	410	324	422	324	419	324	457	324	498	324	521
14"	356	451	356	486	356	483	356	492	356	521	356	578
16"	406	514	406	540	406	537	406	565	406	575	406	641
18"	457	549	457	597	457	594	457	613	457	638	457	705
20"	508	606	508	654	508	648	508	683	508	699	508	756
24"	610	718	610	775	610	768	610	791	610	838	610	902

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Flange gaskets*

Gaskets according to ASME B16.21 (2011)

For flanges according to ASME/ANSI B16.47 Series A



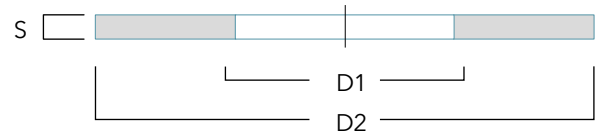
LBS	LBS 150		LBS 300		LBS 400		LBS 600		
	Zoll	d1	d2	d1	d2	d1	d2	d1	d2
26		660	775	660	835	660	832	660	867
28		711	832	711	899	711	892	711	914
30		762	883	762	953	762	946	762	972
32		813	940	813	1006	813	1003	813	1022
34		864	991	864	1057	864	1054	864	1073
36		914	1048	914	1118	914	1118	914	1130
38		965	1111	965	1054	965	1073	965	1105
40		1016	1162	1016	1114	1016	1127	1016	1156
42		1067	1219	1067	1165	1067	1178	1067	1219
44		1118	1276	1118	1219	1118	1232	1118	1270
46		1168	1327	1168	1273	1168	1289	1168	1327
48		1219	1384	1219	1324	1219	1346	1219	1391
50		1270	1435	1270	1378	1270	1403	1270	1448
52		1321	1492	1321	1429	1321	1454	1321	1499
54		1372	1549	1372	1492	1372	1518	1372	1556
56		1422	1607	1422	1543	1422	1568	1422	1613
58		1473	1664	1473	1594	1473	1619	1473	1664
60		1524	1715	1524	1645	1524	1683	1524	1721

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Flange gaskets*

Gaskets according to ASME B16.21 (2011)

For flanges according to ASME/ANSI B16.47 Serie B



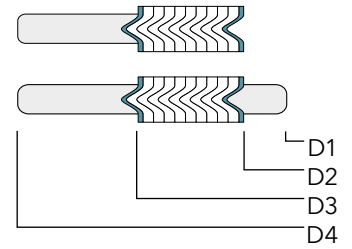
LBS	LBS 75		LBS 150		LBS 300		LBS 400		LBS 600		
	Zoll	d1	d2	d1	d2	d1	d2	d1	d2	d1	d2
26		660	708	660	725	660	772	660	746	660	765
28		711	759	711	776	711	826	711	800	711	819
30		762	810	762	827	762	886	762	857	762	879
32		813	860	813	881	813	940	813	911	813	933
34		864	911	864	935	864	994	864	962	864	997
36		914	973	914	987	914	1048	914	1022	914	1048
38		965	1024	965	1045	965	1099				
40		1016	1075	1016	1095	1016	1149				
42		1067	1126	1067	1146	1067	1200				
44		1118	1181	1118	1197	1118	1251				
46		1168	1232	1168	1256	1168	1318				
48		1219	1283	1219	1307	1219	1368				
50		1270	1334	1270	1357	1270	1419				
52		1321	1387	1321	1408	1321	1470				
54		1372	1438	1372	1464	1372	1530				
56		1422	1495	1422	1514	1422	1594				
58		1473	1546	1473	1580	1473	1656				
60		1524	1597	1524	1630	1524	1705				

*Despite careful content control we assume no liability or guarantee for the topicality, correctness and completeness of the information provided

Flange gaskets*

Spiral wound gaskets according to ASME B16.20 (2017)

For flanges according to ASME/ANSI B16.5



	CLASS 150				CLASS 300				CLASS 400			
	d1	d2	d3	d4	d1	d2	d3	d4	d1	d2	d3	d4
1/2	14,2	19,1	31,8	47,8	14,2	19,1	31,8	54,1	14,2	19,1	31,8	54,1
3/4	20,6	25,4	39,6	57,2	20,6	25,4	39,6	66,8	20,6	25,4	39,6	66,8
1	26,9	31,8	47,8	66,8	26,9	31,8	47,8	73,2	26,9	31,8	47,8	73,2
1 1/4	38,1	47,8	60,5	76,2	38,1	47,8	60,5	82,6	38,1	47,8	60,5	82,6
1 1/2	44,5	54,1	69,9	85,9	44,5	54,1	69,9	95,3	44,5	54,1	69,9	95,3
2	55,6	69,9	85,9	104,9	55,6	69,9	85,9	111,3	55,6	69,9	85,9	111,3
2 1/2	66,5	82,6	98,6	124,0	66,5	82,6	98,6	130,3	66,5	82,6	98,6	130,3
3	81,0	101,6	120,7	136,7	81,0	101,6	120,7	149,4	81,0	101,6	120,7	149,4
3 1/2	101,4	114,3	133,4	161,9	101,6	114,3	133,4	165,1				
4	106,4	127,0	149,4	174,8	106,4	127,0	149,4	181,1	102,6	120,7	149,4	177,8
5	131,8	155,7	177,8	196,9	131,8	155,7	177,8	215,9	128,3	147,6	177,8	212,9
6	157,2	182,6	209,6	222,3	157,2	182,6	209,6	251,0	154,9	174,8	209,6	247,7
8	215,9	233,4	263,7	279,4	215,9	233,4	263,7	308,1	205,7	225,6	263,7	304,8
10	268,2	287,3	317,5	339,9	268,2	287,3	317,5	362,0	255,3	274,6	317,5	358,9
12	317,5	339,9	374,7	409,7	317,5	339,9	374,7	422,4	307,3	327,2	374,7	419,1
14	349,3	371,6	406,4	450,9	349,3	371,6	406,4	485,9	342,9	362,0	406,4	482,6
16	400,1	422,4	463,6	514,4	400,1	422,4	463,6	539,8	389,9	412,8	463,6	536,7
18	449,3	474,7	527,1	549,4	449,3	474,7	527,1	596,9	438,2	469,9	527,1	593,9
20	500,1	525,5	577,9	606,6	500,1	525,5	577,9	654,1	489,0	520,7	577,9	647,7
24	603,3	628,7	685,8	717,6	603,3	628,7	685,8	774,7	590,6	628,7	685,8	768,4

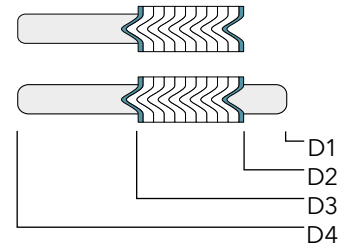
	CLASS 600				CLASS 900				CLASS 1500				CLASS 2500			
	d1	d2	d3	d4	d1	d2	d3	d4	d1	d2	d3	d4	d1	d2	d3	d4
1/2	14,2	19,1	31,8	54,1	14,2	19,1	31,8	63,5	14,2	19,1	31,8	63,5	14,2	19,1	31,8	69,9
3/4	20,6	25,4	39,6	66,8	20,6	25,4	39,6	69,9	20,6	25,4	39,6	69,9	20,6	25,4	39,6	76,2
1	26,9	31,8	47,8	73,2	26,9	31,8	47,8	79,5	26,9	31,8	47,8	79,5	26,9	31,8	47,8	85,9
1 1/4	38,1	47,8	60,5	82,6	33,3	39,6	60,5	88,9	33,3	39,6	60,5	88,9	33,3	39,6	60,5	104,9
1 1/2	44,5	54,1	69,9	95,3	41,4	47,8	69,9	98,6	41,4	47,8	69,9	98,6	41,4	47,8	69,9	117,6
2	55,6	69,9	85,9	111,3	52,3	58,7	85,9	143,0	52,3	58,7	85,9	143,0	52,3	58,7	85,9	146,1
2 1/2	66,5	82,6	98,6	130,3	63,5	69,9	98,6	165,1	63,5	69,9	98,6	165,1	63,5	69,9	98,6	168,4
3	81,0	101,6	120,7	149,4	78,7	95,3	120,7	168,4	78,7	92,2	120,7	174,8	78,7	92,2	120,7	196,9
3 1/2	91,4	104,8	133,4	161,9												
4	102,6	120,7	149,4	193,8	102,6	120,7	149,4	206,5	97,8	117,6	149,4	209,6	97,8	117,6	149,4	235,0
5	128,3	147,6	177,8	241,3	128,3	147,6	177,8	247,7	124,5	143,0	177,8	254,0	124,5	143,0	177,8	279,4
6	154,9	174,8	209,6	266,7	154,9	174,8	209,6	289,1	147,3	171,5	209,6	282,7	147,3	171,5	209,6	317,5
8	205,7	225,6	263,7	320,8	196,9	222,3	257,3	358,9	196,9	215,9	257,3	352,6	196,9	215,9	257,3	387,4
10	255,3	274,6	317,5	400,1	246,1	274,6	311,2	435,1	246,1	266,7	311,2	435,1	246,1	270,0	311,2	476,3
12	307,3	327,2	374,7	457,2	292,1	323,9	368,3	498,6	292,1	323,9	368,3	520,7	292,1	317,5	368,3	549,4
14	342,9	362,0	406,4	492,3	320,8	355,6	400,1	520,7	320,8	362,0	400,1	577,9				
16	389,9	412,8	463,6	565,2	374,7	412,8	457,2	574,8	368,3	406,4	457,2	641,4				
18	438,2	469,9	527,1	612,9	425,5	463,6	520,7	638,3	425,5	463,6	520,7	704,9				
20	489,0	520,7	577,9	682,8	482,6	520,7	571,5	698,5	476,3	514,4	571,5	755,7				
24	590,6	628,7	685,8	790,7	590,6	628,7	679,5	838,2	577,9	616,0	679,5	901,7				

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Flange gaskets*

Spiral wound gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.47 Serie A
(formerly API 601 For flanges according to MSS SP-44)



Zoll	LBS 150				LBS 300				LBS 400			
	d1	d2	d3	d4	d1	d2	d3	d4	d1	d2	d3	d4
26	654,1	673,1	704,9	774,7	654,1	685,8	736,6	835,2	660,4	685,8	736,6	831,9
28	704,9	723,9	755,7	831,9	704,9	736,6	787,4	898,7	711,2	736,6	787,4	892,3
30	755,7	774,7	806,5	882,7	755,7	793,8	844,6	952,5	755,7	793,8	844,6	946,2
32	806,5	825,5	860,6	939,8	806,5	850,9	901,7	1006,6	812,8	850,9	901,7	1003,3
34	857,3	876,3	911,4	990,6	857,3	901,7	952,5	1057,4	863,6	901,7	952,5	1054,1
36	908,1	927,1	968,5	1047,8	908,1	955,8	1006,6	1117,6	917,7	955,8	1006,6	1117,6
38	958,9	977,9	1019,3	1111,3	952,5	977,9	1016,0	1054,1	952,5	971,6	1022,4	1073,2
40	1009,7	1028,7	1070,1	1162,1	1003,3	1022,4	1070,1	1114,6	1000,3	1025,7	1076,5	1127,3
42	1060,5	1079,5	1124,0	1219,2	1054,1	1073,2	1120,9	1165,4	1051,1	1076,5	1127,3	1178,1
44	1111,3	1130,3	1178,1	1276,4	1104,9	1130,3	1181,1	1219,2	1104,9	1130,3	1181,1	1231,9
46	1162,1	1181,1	1228,9	1327,2	1152,7	1178,1	1228,9	1273,3	1168,4	1193,8	1244,6	1289,1
48	1212,9	1231,9	1279,7	1384,3	1209,8	1235,2	1286,0	1324,1	1206,5	1244,6	1295,4	1346,2
50	1263,7	1282,7	1333,5	1435,1	1244,6	1295,4	1346,2	1378,0	1257,3	1295,4	1346,2	1403,4
52	1314,5	1333,5	1384,3	1492,3	1320,8	1346,2	1397,0	1428,8	1308,1	1346,2	1397,0	1454,2
54	1358,9	1384,3	1435,1	1549,4	1352,6	1403,4	1454,2	1492,3	1352,6	1403,4	1454,2	1517,7
56	1409,7	1435,1	1485,9	1606,6	1403,4	1454,2	1505,0	1543,1	1403,4	1454,2	1505,0	1568,5
58	1460,5	1485,9	1536,7	1663,7	1447,8	1511,3	1562,1	1593,9	1454,2	1505,0	1555,8	1619,3
60	1511,3	1536,7	1587,5	1714,5	1524,0	1562,1	1612,9	1644,7	1517,7	1568,5	1619,3	1682,8

Zoll	LBS 600				LBS 900			
	d1	d2	d3	d4	d1	d2	d3	d4
26	647,7	685,8	736,6	866,9	660,4	685,8	736,6	882,7
28	698,5	736,6	787,4	914,4	711,2	736,6	787,4	946,2
30	755,7	793,8	844,6	971,6	768,4	793,8	844,6	1009,7
32	812,8	850,9	901,7	1022,4	812,8	850,9	901,7	1073,2
34	863,6	901,7	952,5	1073,2	863,6	901,7	952,5	1136,7
36	917,7	955,8	1006,6	1130,3	920,8	958,9	1009,7	1200,2
38	952,5	990,6	1041,4	1104,9	1009,7	1035,1	1085,9	1200,2
40	1009,7	1047,8	1098,6	1155,7	1060,5	1098,6	1149,4	1251,0
42	1066,8	1104,9	1155,7	1219,2	1111,3	1149,4	1200,2	1301,8
44	1111,3	1162,1	1212,9	1270,0	1155,7	1206,5	1257,3	1368,6
46	1162,1	1212,9	1263,7	1327,2	1219,2	1270,0	1320,8	1435,1
48	1219,2	1270,0	1320,8	1390,7	1270,0	1320,8	1371,6	1485,9
50	1270,0	1320,8	1371,6	1447,8				
52	1320,8	1371,6	1422,4	1498,6				
54	1378,0	1428,8	1479,6	1555,8				
56	1428,8	1479,6	1530,4	1612,9				
58	1473,2	1536,7	1587,5	1663,7				
60	1530,4	1593,9	1644,7	1733,6				

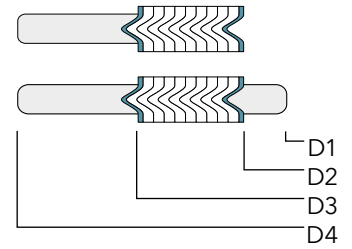
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Flange gaskets*

Spiral wound gaskets according to ASME B16.20 (2012)

in accordance with ASME/ANSI B16.47 Series B

(formerly API 601 For flanges according to API 605)



Inch	LBS 150				LBS 300				LBS 400			
	D1	D2	D3	D4	D1	D2	D3	D4	D1	D2	D3	D4
26	654,1	673,1	698,5	725,4	654,1	673,1	711,2	771,7	654,1	666,8	698,5	746,3
28	704,9	723,9	749,3	776,2	704,9	723,9	762,0	825,5	701,8	714,5	749,3	800,1
30	755,7	774,7	800,1	827,0	755,7	774,7	812,8	886,0	752,6	765,3	806,5	857,3
32	806,5	825,5	850,9	881,1	806,5	825,5	863,6	939,8	800,1	812,8	860,6	911,4
34	857,3	876,3	908,1	935,0	857,3	876,3	914,4	993,9	850,9	866,9	911,4	962,2
36	908,1	927,1	958,9	987,6	908,1	927,1	965,2	1047,8	898,7	917,7	965,2	1022,4
38	958,9	974,6	1009,7	1044,7	971,6	1009,7	1047,8	1098,6	952,5	971,6	1022,4	1073,2
40	1009,7	1022,4	1063,8	1095,5	1022,4	1060,5	1098,6	1149,4	1000,3	1025,7	1076,5	1127,3
42	1060,5	1079,5	1114,6	1146,3	1085,9	1111,3	1149,4	1200,2	1051,1	1076,5	1127,3	1178,1
44	1111,3	1124,0	1165,4	1197,1	1124,0	1162,1	1200,2	1251,0	1104,9	1130,3	1181,1	1231,9
46	1162,1	1181,1	1224,0	1255,8	1178,1	1216,2	1254,3	1317,8	1168,4	1193,8	1244,6	1289,1
48	1212,9	1231,9	1270,0	1306,6	1231,9	1263,7	1311,4	1368,6	1206,5	1244,6	1295,4	1346,2
50	1263,7	1282,7	1325,6	1357,4	1267,0	1317,8	1355,9	1419,4	1257,3	1295,4	1346,2	1403,4
52	1314,5	1333,5	1376,4	1408,2	1317,8	1368,6	1406,7	1470,2	1308,1	1346,2	1397,0	1454,2
54	1365,3	1384,3	1422,4	1463,8	1365,3	1403,4	1454,2	1530,4	1352,6	1403,4	1454,2	1517,7
56	1422,4	1444,8	1478,0	1514,6	1428,8	1479,6	1524,0	1593,9	1403,4	1454,2	1505,0	1568,5
58	1478,0	1500,1	1528,8	1579,6	1484,4	1535,2	1573,3	1655,8	1454,2	1505,0	1555,8	1619,3
60	1535,2	1557,3	1586,0	1630,4	1557,3	1589,0	1630,4	1706,6	1517,7	1568,5	1619,3	1682,8

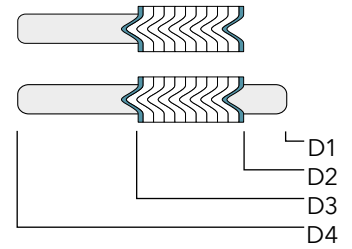
Inch	LBS 600				LBS 900			
	D1	D2	D3	D4	D1	D2	D3	D4
26	644,7	663,7	714,5	765,3	666,8	692,2	749,3	838,2
28	685,8	704,9	755,7	819,2	717,6	743,0	800,1	901,7
30	752,6	778,0	828,8	879,6	781,1	806,5	857,3	958,9
32	793,8	831,9	882,7	933,5	838,2	863,6	914,4	1016,0
34	850,9	889,0	939,8	997,0	895,4	920,8	971,6	1073,2
36	901,7	939,8	990,6	1047,8	920,8	946,2	997,0	1124,0
38	952,5	990,6	1041,4	1104,9	1009,7	1035,1	1085,9	1200,2
40	1009,7	1047,8	1098,6	1155,7	1060,5	1098,6	1149,4	1251,0
42	1066,8	1104,9	1155,7	1219,2	1111,3	1149,4	1200,2	1301,8
44	1111,3	1162,1	1212,9	1270,0	1155,7	1206,5	1257,3	1368,6
46	1162,1	1212,9	1263,7	1327,2	1219,2	1270,0	1320,8	1435,1
48	1219,2	1270,0	1320,8	1390,7	1270,0	1320,8	1371,6	1485,9
50	1270,0	1320,8	1371,6	1447,8				
52	1320,8	1371,6	1422,4	1498,6				
54	1378,0	1428,8	1479,6	1555,8				
56	1428,8	1479,6	1530,4	1612,9				
58	1473,2	1536,7	1587,5	1663,7				
60	1530,4	1593,9	1644,7	1733,6				

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Flange gaskets*

Spiral wound gaskets according to EN 1514-2 (2014)

For flanges according to EN 1092-1-2-3-4



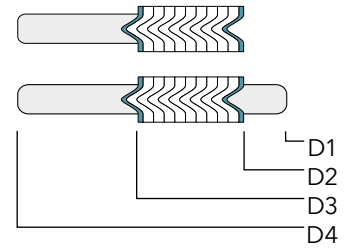
DN	INNENRING INNENDRM.	DICHTZONE INNENDRM.	DICHTZONE AUSSENDRM.		ZENTRIERRING AUSSENDRM.						
	D1	D2	D3		D4						
			PN 10-40	PN 63-160	PN10	PN16	PN25	PN40	PN63	PN100	PN160
10	18	24	34	34	46	46	46	46	56	56	56
15	23	29	39	39	51	51	51	51	61	61	61
20	28	34	46	47	61	61	61	61	-	-	-
25	35	41	53	53	71	71	71	71	82	82	82
32	43	49	61	65	82	82	82	82	-	-	-
40	50	56	68	68	92	92	92	92	103	103	103
50	61	70	86	86	107	107	107	107	113	119	119
65	77	86	102	106	127	127	127	127	137	143	143
80	90	99	115	119	142	142	142	142	148	154	154
100	115	127	143	147	162	162	168	168	174	180	180
125	140	152	172	176	192	192	194	194	210	217	217
150	167	179	199	203	218	218	224	224	247	257	257
200	216	228	248	252	273	273	284	290	309	324	324
250	267	279	303	307	327	329	340	352	364	391	388
300	318	330	354	358	377	384	400	417	424	458	458
350	360	376	400	404	437	444	457	474	486	512	
400	410	422	450	456	488	495	514	546	543	572	
500	510	522	550	556	593	617	624	628	657	704	
600	610	622	650	656	695	734	731	747	764	813	
700	710	722	756	762	810	804	833	852	879	950	
800	810	830	864	870	917	911	942	974	988		
900	910	930	964	970	1017	1011	1042	1084	1108		
1000	1010	1030	1074	1080	1124	1128	1154	1194			

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Flange gaskets*

Spiral wound gaskets according to EN 12560-2 (2013)

For flanges according to EN 1759-1



Inch	LBS 150				LBS 300			
	D1	D2	D3	D4	D1	D2	D3	D4
1/2	14,2	19,1	31,8	47,8	14,2	19,1	31,8	54,1
3/4	20,6	25,4	39,6	57,2	20,6	25,4	39,6	66,8
1	26,9	31,8	47,8	66,8	26,9	31,8	47,8	73,2
1 1/4	38,1	47,8	60,5	76,2	38,1	47,8	60,5	82,6
1 1/2	44,5	54,1	69,9	85,9	44,5	54,1	69,9	95,3
2	55,6	69,9	85,9	104,9	55,6	69,9	85,9	111,3
2 1/2	66,5	82,6	98,6	124,0	66,5	82,6	98,6	130,3
3	81,0	101,6	120,7	136,7	81,0	101,6	120,7	149,4
4	106,4	127,0	149,4	174,8	106,4	127,0	149,4	181,1
5	131,8	155,7	177,8	196,9	131,8	155,7	177,8	215,9
6	157,2	182,6	209,6	222,3	157,2	182,6	209,6	251,0
8	215,9	233,4	263,7	279,4	215,9	233,4	263,7	308,1
10	268,2	287,3	317,5	339,9	268,2	287,3	317,5	362,0
12	317,5	339,9	374,7	409,7	317,5	339,9	374,7	422,4
14	349,3	371,6	406,4	450,9	349,3	371,6	406,4	485,9
16	400,1	422,4	463,6	514,4	400,1	422,4	463,6	539,8
18	449,3	474,7	527,1	549,4	449,3	474,7	527,1	596,9
20	500,1	525,5	577,9	606,6	500,1	525,5	577,9	654,1
24	603,3	628,7	685,8	717,6	603,3	628,7	685,8	774,7

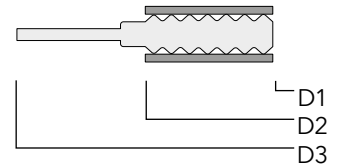
Inch	LBS 600				LBS 900				LBS 1500				LBS 2500			
	D1	D2	D3	D4	D1	D2	D3	D4	D1	D2	D3	D4	D1	D2	D3	D4
1/2	14,2	19,1	31,8	54,1	14,2	19,1	31,8	63,5	14,2	19,1	31,8	63,5	14,2	19,1	31,8	69,9
3/4	20,6	25,4	39,6	66,8	20,6	25,4	39,6	69,9	20,6	25,4	39,6	69,9	20,6	25,4	39,6	76,2
1	26,9	31,8	47,8	73,2	26,9	31,8	47,8	79,5	26,9	31,8	47,8	79,5	26,9	31,8	47,8	85,9
1 1/4	38,1	47,8	60,5	82,6	33,3	39,6	60,5	88,9	33,3	39,6	60,5	88,9	33,3	39,6	60,5	104,9
1 1/2	44,5	54,1	69,9	95,3	41,4	47,8	69,9	98,6	41,4	47,8	69,9	98,6	41,4	47,8	69,9	117,6
2	55,6	69,9	85,9	111,3	52,3	58,7	85,9	143,0	52,3	58,7	85,9	143,0	52,3	58,7	85,9	146,1
2 1/2	66,5	82,6	98,6	130,3	63,5	69,9	98,6	165,1	63,5	69,9	98,6	165,1	63,5	69,9	98,6	168,4
3	81,0	101,6	120,7	149,4	78,7	95,3	120,7	168,4	78,7	92,2	120,7	174,8	78,7	92,2	120,7	196,9
4	102,6	120,7	149,4	193,8	102,6	120,7	149,4	206,5	97,8	117,6	149,4	209,6	97,8	117,6	149,4	235,0
5	128,3	147,6	177,8	241,3	128,3	147,6	177,8	247,7	124,5	143,0	177,8	254,0	124,5	143,0	177,8	279,4
6	154,9	174,8	209,6	266,7	154,9	174,8	209,6	289,1	147,3	171,5	209,6	282,7	147,3	171,5	209,6	317,5
8	205,7	225,6	263,7	320,8	196,9	222,3	257,3	358,9	196,9	215,9	257,3	352,6	196,9	215,9	257,3	387,4
10	255,3	274,6	317,5	400,1	246,1	276,4	311,2	435,1	246,1	266,7	311,2	435,1	246,1	270,0	311,2	476,3
12	307,3	327,2	374,7	457,2	292,1	323,9	368,3	498,6	292,1	323,9	368,3	520,7	292,1	317,5	368,3	549,4
14	342,9	362,0	406,4	492,3	320,8	355,6	400,1	520,7	320,8	362,0	400,1	577,9				
16	389,9	412,8	463,6	565,2	374,7	412,8	457,2	574,8	368,3	406,4	457,2	641,4				
18	438,2	469,9	527,1	612,9	425,5	463,6	520,7	638,3	425,5	463,6	520,7	704,9				
20	489,0	520,7	577,9	682,8	482,6	520,7	571,5	698,5	476,3	514,4	571,5	755,7				
24	590,6	628,7	685,8	790,7	590,6	628,7	679,5	838,2	577,9	616,0	679,5	901,7				

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Flange gaskets*

Kammprofile gaskets according to EN 1514-6 (2003)

For flanges according to EN 1092-1-2-3-4



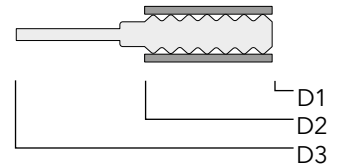
DN	INNER RING I.D.	O.D. GASKET FACING			O.D. OUTER RING									
	D1	D2			D3									
		PN10-40	PN63-160	PN250-400	PN10	PN16	PN25	PN40	PN64	PN100	PN160	PN250	PN320	PN400
10	22	36	36	36	46	46	46	46	56	56	56	67	67	67
15	26	42	42	42	51	51	51	51	61	61	61	72	72	-
20	31	47	47	47	61	61	61	61	-	-	-	-	-	-
25	36	52	52	52	71	71	71	71	82	82	82	83	92	104
32	46	62	62	66	82	82	82	82	-	-	-	-	-	-
40	53	69	69	73	92	92	92	92	103	103	103	109	119	135
50	65	81	81	87	107	107	107	107	113	119	119	124	134	150
65	81	100	100	103	127	127	127	127	137	143	143	153	170	192
80	95	115	115	121	142	142	142	142	148	154	154	170	190	207
100	118	138	138	146	162	162	168	168	174	180	180	202	229	256
125	142	162	162	178	192	192	194	194	210	217	217	242	274	301
150	170	190	190	212	217	217	224	224	247	257	257	284	311	348
175	195	215	215	245	247	247	254	265	277	287	284	316	358	402
200	220	240	248	280	272	272	284	290	309	324	324	358	398	442
250	270	290	300	340	327	328	340	352	364	391	388	442	488	-
300	320	340	356	400	377	383	400	417	424	458	458	536	-	-
350	375	395	415	-	437	443	457	474	486	512	-	-	-	-
400	426	450	474	-	489	495	514	546	543	572	-	-	-	-
450	480	506	-	-	539	555	-	571	-	-	-	-	-	-
500	530	560	588	-	594	617	624	628	657	704	-	-	-	-
600	630	664	700	-	695	734	731	747	764	813	-	-	-	-
700	730	770	812	-	810	804	833	852	879	950	-	-	-	-
800	830	876	886	-	917	911	942	974	988	-	-	-	-	-
900	930	982	994	-	1017	1011	1042	1084	1108	-	-	-	-	-
1000	1040	1098	1110	-	1124	1128	1154	1194	1220	-	-	-	-	-
1200	1250	1320	1334	-	1341	1342	1364	1398	1452	-	-	-	-	-
1400	1440	1522	-	-	1548	1542	1578	1618	-	-	-	-	-	-
1600	1650	1742	-	-	1772	1764	1798	1830	-	-	-	-	-	-
1800	1850	1914	-	-	1972	1964	2000	-	-	-	-	-	-	-
2000	2050	2120	-	-	2182	2168	2230	-	-	-	-	-	-	-
2200	2250	2328	-	-	2384	2378	-	-	-	-	-	-	-	-
2400	2460	2512	-	-	2594	-	-	-	-	-	-	-	-	-
2600	2670	2728	-	-	2794	-	-	-	-	-	-	-	-	-
2800	2890	2952	-	-	3014	-	-	-	-	-	-	-	-	-
3000	3100	3166	-	-	3228	-	-	-	-	-	-	-	-	-

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Flange gaskets*

Kammprofile gaskets according to EN 12560-6 (2003)

For flanges according to EN 1759-1



	INNER RING I.D.	O.D. GASKET FACING	O.D. OUTER RING						
	D1	D2	D3						
	Inch		150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	1500 lbs	2500 lbs
1/2	23,0	33,3	44,4	50,8	50,8	50,8	60,3	60,3	66,7
3/4	28,6	39,7	53,9	63,5	63,5	63,5	66,7	66,7	73,0
1	36,5	47,6	63,5	69,8	69,8	69,8	76,2	76,2	82,5
1 1/4	44,4	60,3	73,0	79,4	79,4	79,4	85,7	85,7	101,6
1 1/2	52,4	69,8	82,5	92,1	92,1	92,1	95,2	95,2	114,3
2	69,8	88,9	101,6	108,0	108,0	108,0	139,7	139,7	142,8
2 1/2	82,5	101,6	120,6	127,0	127,0	127,0	161,9	161,9	165,1
3	98,4	123,8	133,4	146,1	146,1	146,1	165,1	171,5	193,7
3 1/2	111,1	136,5	158,8	161,9	158,7	158,7	-	-	-
4	123,8	154,0	171,5	177,8	174,6	190,5	203,2	206,4	231,7
5	150,8	182,6	193,7	212,7	209,5	238,1	244,5	250,8	276,2
6	177,8	212,7	219,1	247,7	244,5	263,5	285,8	279,4	314,3
8	228,6	266,7	276,2	304,8	301,6	317,5	355,6	349,3	384,1
10	282,6	320,7	336,5	358,8	355,6	396,9	431,8	431,8	473,0
12	339,7	377,8	406,4	419,1	415,9	454,0	495,3	517,5	546,1
14	371,5	409,6	447,7	482,6	479,4	488,9	517,5	574,7	-
16	422,3	466,7	511,2	536,6	533,4	561,9	571,5	638,1	-
18	479,4	530,2	546,1	593,7	590,5	609,6	635,0	701,7	-
20	530,2	581,0	603,2	650,9	644,5	679,5	695,3	752,4	-
22	581,0	631,8	657,2	701,7	698,5	730,3	-	-	-
24	631,8	682,6	714,4	771,5	765,2	787,4	835,0	898,5	-

Flange gaskets*

Kammprofile gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.5

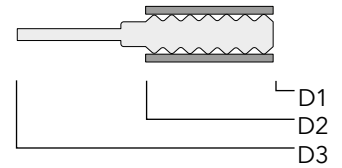
	INNER RING I.D.	O.D. GASKET FACING	O.D. OUTER RING						
	D1	D2	D3						
	Inch	150 - 2500	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	1500 lbs	2500 lbs
1/2"	23,1	33,3	47,8	54,1	54,1	54,1	63,5	63,5	69,9
3/4"	28,7	39,6	57,2	66,8	66,8	66,8	69,9	69,9	76,2
1"	36,6	47,5	66,8	73,2	73,2	73,2	79,5	79,5	85,9
1 1/4"	44,5	60,2	76,2	82,6	82,6	82,6	88,9	88,9	104,9
1 1/2"	52,3	69,9	85,9	95,3	95,3	95,3	98,6	98,6	117,6
2"	69,9	88,9	104,9	111,3	111,3	111,3	143,0	143,0	146,1
2 1/2"	82,6	101,6	124,0	130,3	130,3	130,3	165,1	165,1	168,4
3"	98,3	123,7	136,7	149,4	149,4	149,4	168,4	174,8	196,9
4"	123,7	153,9	174,8	181,1	177,8	193,8	206,5	209,6	235,0
5"	150,9	182,6	196,9	215,9	212,9	241,3	247,7	254,0	279,4
6"	177,8	212,6	222,3	251,0	247,7	266,7	289,1	282,7	317,5
8"	228,6	266,7	279,4	308,1	304,8	320,8	358,9	352,6	387,4
10"	282,7	320,8	339,9	362,0	358,9	400,1	435,1	435,1	476,3
12"	339,6	377,7	409,7	422,4	419,1	457,2	498,6	520,7	549,4
14"	371,6	409,7	450,9	485,9	482,6	492,3	520,7	577,9	-
16"	422,4	466,6	514,4	539,8	536,7	565,2	574,8	641,4	-
18"	479,3	530,1	549,4	596,9	593,9	612,9	638,3	704,9	-
20"	530,1	580,9	606,6	654,1	647,7	682,8	698,5	755,7	-
24"	631,7	682,5	717,6	774,7	768,4	790,7	838,2	901,7	-

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Flange gaskets*

Kammprofile gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.47 Serie A



Inch	INNER RING I.D.					O.D. GASKET FACING					O.D. OUTER RING				
	D1					D2					D3				
	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs
26	673,1	685,8	685,8	685,8	685,8	704,9	736,6	736,6	736,6	736,6	774,7	835,2	831,9	866,9	882,7
28	723,9	736,6	736,6	736,6	736,6	755,7	787,4	787,4	787,4	787,4	831,9	898,7	892,3	914,4	946,2
30	774,7	793,8	793,8	793,8	793,8	806,5	844,6	844,6	844,6	844,6	882,7	952,5	946,2	971,6	1009,7
32	825,5	850,9	850,9	850,9	850,9	860,6	901,7	901,7	901,7	901,7	939,8	1006,6	1003,3	1022,4	1073,2
34	876,3	901,7	901,7	901,7	901,7	911,4	952,5	952,5	952,5	952,5	990,6	1057,4	1054,1	1073,2	1136,7
36	927,1	955,8	955,8	955,8	958,9	968,5	1006,6	1006,6	1006,6	1009,7	1047,8	1117,6	1117,6	1130,3	1200,2
38	977,9	977,9	971,6	990,6	1035,1	1019,3	1016,0	1022,4	1041,4	1085,9	1111,3	1054,1	1073,2	1104,9	1200,2
40	1028,7	1022,4	1025,7	1047,8	1098,6	1070,1	1070,1	1076,5	1098,6	1149,4	1162,1	1114,6	1127,3	1155,7	1251,0
42	1079,5	1073,2	1076,5	1104,9	1149,4	1124,0	1120,9	1127,3	1155,7	1200,2	1219,2	1165,4	1178,1	1219,2	1301,8
44	1130,3	1130,3	1130,3	1162,1	1206,5	1178,1	1181,1	1181,1	1212,9	1257,3	1276,4	1219,2	1231,9	1270,0	1368,6
46	1181,1	1178,1	1193,8	1212,9	1270,0	1228,9	1228,9	1244,6	1263,7	1320,8	1327,2	1273,3	1289,1	1327,2	1435,1
48	1231,9	1235,2	1244,6	1270,0	1320,8	1279,7	1286,0	1295,4	1320,8	1371,6	1384,3	1324,1	1346,2	1390,7	1485,9
50	1282,7	1295,4	1295,4	1320,8	-	1333,5	1346,2	1346,2	1371,6	-	1435,1	1378,0	1403,4	1447,8	-
52	1333,5	1346,2	1346,2	1371,6	-	1384,3	1397,0	1397,0	1422,4	-	1492,3	1428,8	1454,2	1498,6	-
54	1384,3	1403,4	1403,4	1428,8	-	1435,1	1454,2	1454,2	1479,6	-	1549,4	1492,3	1517,7	1555,8	-
56	1435,1	1454,2	1454,2	1479,6	-	1485,9	1505,0	1505,0	1530,4	-	1606,6	1543,1	1568,5	1612,9	-
58	1485,9	1511,3	1505,0	1536,7	-	1536,7	1562,1	1555,8	1587,5	-	1663,7	1593,9	1619,3	1663,7	-
60	1536,7	1562,1	1568,5	1593,9	-	1587,5	1612,9	1619,3	1644,7	-	1714,5	1644,7	1682,8	1733,6	-

Flange gaskets*

Kammprofile gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.47 Serie B

Inch	INNER RING I.D.					O.D. GASKET FACING					O.D. OUTER RING				
	D1					D2					D3				
	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs	150 lbs	300 lbs	400 lbs	600 lbs	900 lbs
26	673,1	673,1	666,8	663,7	692,2	698,5	711,2	698,5	714,5	749,3	725,4	771,7	746,3	765,3	838,2
28	723,9	723,9	714,5	704,9	743,0	749,3	762,0	749,3	755,7	800,1	776,2	825,5	800,1	819,2	901,7
30	774,7	774,7	765,3	778,0	806,5	800,1	812,8	806,5	828,8	857,3	827,0	886,0	857,3	879,6	958,9
32	825,5	825,5	812,8	831,9	863,6	850,9	863,6	860,6	882,7	914,4	881,1	939,8	911,4	933,5	1016,0
34	876,3	876,3	866,9	889,0	920,8	908,1	914,4	911,4	939,8	971,6	935,0	993,9	962,2	997,0	1073,2
36	927,1	927,1	917,7	939,8	946,2	958,9	965,2	965,2	990,6	997,0	987,6	1047,8	1022,4	1047,8	1124,0
38	974,9	1009,7	971,6	990,6	1035,1	1009,7	1047,8	1022,4	1041,4	1085,9	1044,7	1098,6	1073,2	1104,9	1200,2
40	1022,4	1060,5	1025,7	1047,8	1098,6	1063,8	1098,6	1076,5	1098,6	1149,4	1095,5	1149,4	1127,3	1155,7	1251,0
42	1079,5	1111,3	1076,5	1104,9	1149,4	1114,6	1149,4	1127,3	1155,7	1200,2	1146,3	1200,2	1178,1	1219,2	1301,8
44	1124,0	1162,1	1130,3	1162,1	1206,5	1165,4	1200,2	1181,1	1212,9	1257,3	1197,1	1251,0	1231,9	1270,0	1368,6
46	1181,1	1216,2	1193,8	1212,9	1270,0	1224,0	1254,3	1244,6	1263,7	1320,8	1255,8	1317,8	1289,1	1327,2	1435,1
48	1231,9	1263,7	1244,6	1270,0	1320,8	1270,0	1311,4	1295,4	1320,8	1371,6	1306,6	1368,6	1346,2	1390,7	1485,9
50	1282,7	1317,8	1295,4	1320,8	-	1325,6	1355,9	1346,2	1371,6	-	1357,4	1419,4	1403,4	1447,8	-
52	1333,5	1368,6	1346,2	1371,6	-	1376,4	1406,7	1397,0	1422,4	-	1408,2	1470,2	1454,2	1498,6	-
54	1384,3	1403,4	1403,4	1428,8	-	1422,4	1454,2	1454,2	1479,6	-	1463,8	1530,4	1517,7	1555,8	-
56	1444,8	1479,6	1454,2	1479,6	-	1478,0	1524,0	1505,0	1530,4	-	1514,6	1593,9	1568,5	1612,9	-
58	1500,6	1535,2	1505,0	1536,7	-	1528,8	1573,3	1555,8	1587,5	-	1579,6	1655,8	1619,3	1663,7	-
60	1557,3	1589,0	1568,5	1593,9	-	1586,0	1630,4	1619,3	1644,7	-	1630,4	1706,6	1682,8	1733,6	-

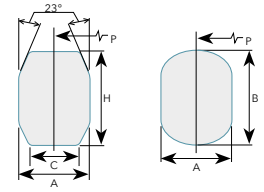
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Flange gaskets*

Ring-Joint-Gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.5

Type R sizes in inches



Octagonal

Oval

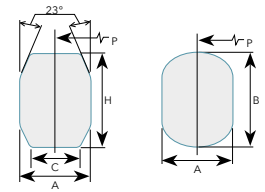
Ring No.	PRESSURE CLASS RATINGS (psi)							Pitch diameter of ring P	Width of ring A	Height of ring		Approx distance between made up flanges
	ANSI, BS & MSS					API				Oval B	Octagonal H	
	150	300/600	900	1500	2500	2000/3000	5000					
Nominal pipe size												
R 11	-	1/2	-	-	-	-	-	1.344	0.250	0.44	0.38	-
R 12	-	-	1/2	1/2	-	-	-	1.563	0.313	0.56	0.50	-
R 13	-	3/4	-	-	1/2	-	-	1.688	0.313	0.56	0.50	-
R 14	-	-	3/4	3/4	-	-	-	1.750	0.313	0.56	0.50	-
R 15	1	-	-	-	-	-	-	1.875	0.313	0.56	0.50	-
R 16	-	1	1	1	3/4	-	-	2.000	0.313	0.56	0.50	-
R 17	1 1/4	-	-	-	-	-	-	2.250	0.313	0.56	0.50	-
R 18	-	1 1/4	1 1/4	1 1/4	1	-	-	2.375	0.313	0.56	0.50	-
R 19	1 1/2	-	-	-	-	-	-	2.563	0.313	0.56	0.50	-
R 20	-	1 1/2	1 1/2	1 1/2	-	-	-	2.688	0.313	0.56	0.50	0.16
R 21	-	-	-	-	1 1/4	-	-	2.844	0.438	0.69	0.63	-
R 22	2	-	-	-	-	-	-	3.250	0.313	0.56	0.50	-
R 23	-	2	-	-	1 1/2	2 1/16	-	3.250	0.438	0.69	0.63	0.19
R 24	-	-	2	2	-	2 1/16	2	3.750	0.438	0.69	0.63	0.19
R 25	2 1/2	-	-	-	-	-	-	4.000	0.313	0.56	0.50	-
R 26	-	2 1/2	-	-	2	2 9/16	-	4.000	0.438	0.69	0.63	0.19
R 27	-	-	2 1/2	2 1/2	-	2 9/16	2 9/16	4.250	0.438	0.69	0.63	0.19
R 28	-	-	-	2 1/2	-	-	-	4.375	0.500	0.75	0.69	-
R 29	3	-	-	-	-	-	-	4.500	0.313	0.56	0.50	-
R 30	-	3	-	-	-	-	-	4.625	0.438	0.69	0.63	-
R 31	-	3	3	-	-	2 7/8	-	4.875	0.438	0.69	0.63	0.19
R 32	-	-	-	-	3	-	-	5.000	0.500	0.75	0.69	-
R 33	3 1/2	-	-	-	-	-	-	5.188	0.313	0.56	0.50	-
R 34	-	3 1/2	-	-	-	-	-	5.188	0.438	0.69	0.63	-
R 35	-	-	-	3	-	-	3 1/8	5.375	0.438	0.69	0.63	0.19
R 36	4	-	-	-	-	-	-	5.875	0.313	0.56	0.50	-
R 37	-	4	4	-	-	4 1/16	-	5.875	0.438	0.69	0.63	0.1
R 38	-	-	-	4	-	-	-	6.188	0.625	0.88	0.81	-
R 39	-	-	-	4	-	-	4 1/15	6.375	0.438	0.69	0.63	0.19
R 40	5	-	-	-	-	-	-	6.750	0.313	0.56	0.50	-
R 41	-	5	5	-	-	-	-	7.125	0.438	0.69	0.63	0.19
R 42	-	-	-	-	5	-	-	7.500	0.750	1.00	0.94	-
R 43	6	-	-	-	-	-	-	7.625	0.313	0.56	0.50	-
R 44	-	-	-	5	-	-	-	7.625	0.438	0.69	0.63	0.19
R 45	-	6	6	-	-	7 1/16	-	8.313	0.438	0.69	0.63	0.19
R 46	-	-	-	6	-	-	7 1/18	8.313	0.500	0.75	0.69	0.13
R 47	-	-	-	-	6	-	-	9.000	0.750	1.00	0.94	0.16
R 48	8	-	-	-	-	-	-	9.750	0.313	0.56	0.50	-
R 49	-	8	8	-	-	9	-	10.625	0.438	0.69	0.63	0.19
R 50	-	-	-	8	-	9	-	10.625	0.625	0.88	0.81	0.16
R 51	-	-	-	-	8	-	-	11.000	0.875	1.13	1.06	-
R 52	10	-	-	-	-	-	-	12.000	0.313	0.56	0.50	-
R 53	-	10	10	-	-	11	-	12.750	0.438	0.69	0.63	0.19
R 54	-	-	-	10	-	-	11	12.750	0.625	0.88	0.81	0.16
R 55	-	-	-	-	10	-	-	13.500	1.125	1.44	1.83	-
R 56	12	-	-	-	-	-	-	15.000	0.313	0.56	0.50	-
R 57	-	12	12	-	-	13 5/8	-	15.000	0.438	0.69	0.63	0.19
R 58	-	-	-	12	-	-	-	15.000	0.875	1.13	1.06	-
R 59	14	-	-	-	-	-	-	15.625	0.313	0.56	0.50	-
R 60	-	-	-	-	12	-	-	16.000	1.250	1.56	1.50	-
R 61	-	14	-	-	-	-	-	16.500	0.438	0.69	0.63	-
R 62	-	-	14	-	-	-	-	16.500	0.625	0.88	0.81	-
R 63	-	-	-	14	-	-	-	16.500	1.000	1.13	1.25	0.22
R 64	16	-	-	-	-	-	-	17.875	0.313	0.56	0.50	-
R 65	-	16	-	-	-	16 3/4	-	18.500	0.438	0.69	0.63	0.19
R 66	-	-	16	-	-	(16)	-	18.500	0.625	0.88	0.81	0.16
R 67	-	-	-	16	-	-	-	18.500	1.125	1.44	1.38	-
R 68	18	-	-	-	-	-	-	20.375	0.313	0.56	0.50	-
R 69	-	18	-	-	-	-	-	21.000	0.438	0.69	0.63	0.19
R 70	-	-	18	-	-	(18)	-	21.000	0.750	1.00	0.94	0.19
R 71	-	-	-	18	-	-	-	21.000	1.125	1.44	1.38	-
R 72	20	-	-	-	-	-	-	22.000	0.313	0.56	0.50	-
R 73	-	20	-	-	-	21 1/4	-	23.000	0.500	0.75	0.69	0.13
R 74	-	-	20	-	-	(20 3/4)	-	23.000	0.750	1.00	0.94	0.19
R 75	-	-	-	20	-	-	-	23.000	1.250	1.56	1.50	-
R 76	24	-	-	-	-	-	-	26.500	0.313	0.56	0.50	-
R 77	-	24	-	-	-	-	-	27.250	0.625	0.88	0.81	-
R 78	-	-	24	-	-	-	-	27.250	1.000	1.31	1.25	-
R 79	-	-	-	24	-	-	-	27.250	1.375	1.75	1.63	0.19
R 80	22	-	-	-	-	-	-	24.250	0.313	-	0.50	-
R 81	-	22	-	-	-	-	-	25.000	0.563	-	0.75	-
R 82	-	-	-	-	-	-	-	2.250	0.438	-	0.63	0.19
R 84	-	-	-	-	-	-	-	2.500	0.438	-	0.63	0.19
R 85	-	-	-	-	-	-	-	3.125	0.500	-	0.69	0.13
R 86	-	-	-	-	-	-	-	3.563	0.625	-	0.81	0.16
R 87	-	-	-	-	-	-	-	3.938	0.625	-	0.81	0.16
R 88	-	-	-	-	-	-	-	4.875	0.750	-	0.94	0.19
R 89	-	-	-	-	-	-	-	4.500	0.750	-	0.94	0.19
R 90	-	-	-	-	-	-	-	6.125	0.875	-	1.06	0.19
R 91	-	-	-	-	-	-	-	10.250	1.250	-	1.50	0.16
R 92	-	-	-	-	-	-	-	9.000	0.438	-	0.63	-
R 93	-	26	-	-	-	-	-	29.500	0.750	-	0.94	-
R 94	-	28	-	-	-	-	-	31.500	0.750	-	0.94	-
R 95	-	30	-	-	-	-	-	33.750	0.750	-	0.94	-
R 96	-	32	-	-	-	-	-	36.000	0.875	-	1.06	-
R 97	-	34	-	-	-	-	-	38.000	0.875	-	1.06	-
R 98	-	36	-	-	-	-	-	40.125	0.875	-	1.06	-
R 99	-	-	-	-	-	-	-	9.250	0.438	-	0.63	0.19
R 100	-	-	26	-	-	-	-	29.500	1.125	-	1.38	-
R 101	-	-	28	-	-	-	-	31.500	1.250	-	1.50	-
R 102	-	-	30	-	-	-	-	33.570	1.250	-	1.50	-
R 103	-	-	32	-	-	-	-	36.000	1.250	-	1.50	-
R 104	-	-	34	-	-	-	-	38.000	1.375	-	1.63	-
R 105	-	-	36	-	-	-	-	40.250	1.375	-	1.63	-

Flange gaskets*

Ring-Joint-Gaskets according to ASME B16.20 (2012)

For flanges according to ASME/ANSI B16.5

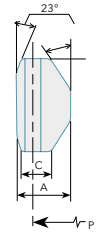
Type R sizes in mm



Octagonal

Oval

Ring No.	PRESSURE CLASS RATINGS (psi)							Pitch diameter of ring P	Width of ring A	Height of ring		Approx distance between made up flanges
	ANSI, BS & MSS					API				Oval B	Octagonal H	
	150	300/600	900	1500	2500	2000/3000	5000					
Nominal pipe size												
R 11	-	½	-	-	-	-	-	34.13	6.35	11.1	9.5	-
R 12	-	-	½	½	-	-	-	36.69	7.95	14.3	12.7	-
R 13	-	¾	-	-	½	-	-	42.86	7.95	14.3	12.7	-
R 14	-	-	¾	¾	-	-	-	44.45	7.95	14.3	12.7	-
R 15	1	-	-	-	-	-	-	47.63	7.95	14.3	12.7	-
R 16	-	1	1	1	¾	-	-	50.80	7.95	14.3	12.7	-
R 17	1 ¼	-	-	-	-	-	-	57.15	7.95	14.3	12.7	-
R 18	-	1 ¼	1 ¼	1 ¼	1	-	-	60.33	7.95	14.3	12.7	-
R 19	1 ½	-	-	-	-	-	-	65.09	7.95	14.3	12.7	-
R 20	-	1 ½	1 ½	1 ½	-	-	-	68.28	7.95	14.3	12.7	0.16
R 21	-	-	-	-	1 ¼	-	-	72.23	11.11	17.5	15.9	-
R 22	2	-	-	-	-	-	-	82.55	7.95	14.3	12.7	-
R 23	-	2	-	-	1 ½	2 ½/16	-	82.55	11.11	17.5	15.9	0.19
R 24	-	-	2	2	-	2 ½/16	2	85.25	11.11	17.5	15.9	0.19
R 25	2 ½	-	-	-	-	-	-	101.60	7.95	14.3	12.7	-
R 26	-	2 ½	-	-	2	2 9/16	-	101.60	11.11	17.5	15.9	0.19
R 27	-	-	2 ½	2 ½	-	2 9/16	2 9/16	107.95	11.11	17.5	15.9	-
R 28	-	-	-	-	2 ½	-	-	111.13	12.70	19.1	17.5	-
R 29	3	-	-	-	-	-	-	114.30	7.95	14.3	12.7	-
R 30	-	3	-	-	-	-	-	117.48	11.11	17.5	15.9	-
R 31	-	3	3	-	-	2 ½/8	-	123.83	11.11	17.5	15.9	0.19
R 32	-	-	-	-	-	3	-	127.00	12.70	19.1	17.5	-
R 33	3 ½	-	-	-	-	-	-	131.76	7.95	14.3	12.7	-
R 34	-	3 ½	-	-	-	-	-	131.76	11.11	17.5	15.9	-
R 35	-	-	-	3	-	-	-	136.53	11.11	17.5	15.9	0.19
R 36	4	-	-	-	-	-	3 ½/8	149.23	7.95	14.3	12.7	-
R 37	-	4	4	-	-	4 ½/16	-	149.23	11.11	17.5	15.9	0.19
R 38	-	-	-	-	4	-	-	157.16	15.88	22.4	20.6	-
R 39	-	-	-	4	-	-	4 ½/15	161.93	11.11	17.5	15.9	0.19
R 40	5	-	-	-	-	-	-	171.45	7.95	14.3	12.7	-
R 41	-	5	5	-	-	-	-	180.98	11.11	17.5	15.9	0.19
R 42	-	-	-	-	5	-	-	190.50	19.05	25.4	23.9	-
R 43	6	-	-	-	-	-	-	193.68	7.95	14.3	12.7	-
R 44	-	-	-	5	-	-	-	193.68	11.11	17.5	15.9	0.19
R 45	-	6	6	-	-	7 ½/16	-	211.14	11.11	17.5	15.9	0.19
R 46	-	-	-	6	-	-	7 ½/18	211.14	12.70	19.1	17.5	0.13
R 47	-	-	-	-	6	-	-	228.60	19.05	25.4	23.9	0.16
R 48	8	-	-	-	-	-	-	247.65	7.95	14.3	12.7	-
R 49	-	8	8	-	-	9	-	269.88	11.13	17.5	16.0	0.19
R 50	-	-	-	8	-	-	9	269.88	15.88	22.4	20.6	4.8
R 51	-	-	-	-	8	-	-	279.40	22.23	28.6	27.0	-
R 52	10	-	-	-	-	-	-	304.80	7.95	14.3	12.7	-
R 53	-	10	10	-	-	11	-	323.00	11.13	17.5	16.0	4.8
R 54	-	-	-	10	-	-	11	323.35	15.88	22.4	20.6	4.1
R 55	-	-	-	-	10	-	-	342.90	28.58	36.5	24.9	-
R 56	12	-	-	-	-	-	-	381.00	7.95	14.3	12.7	-
R 57	-	12	12	-	-	13 5/8	-	381.00	11.13	17.5	16.0	-
R 58	-	-	-	12	-	-	-	381.00	22.23	28.6	27.0	-
R 59	14	-	-	-	-	-	-	396.88	7.95	14.3	12.7	-
R 60	-	-	-	-	12	-	-	406.40	31.75	39.7	38.1	-
R 61	-	14	-	-	-	-	-	419.00	11.11	17.5	15.9	-
R 62	-	-	14	-	-	-	-	419.00	15.88	22.4	20.6	-
R 63	-	-	-	14	-	-	-	419.00	25.40	33.3	31.8	5.6
R 64	16	-	-	-	-	-	-	454.03	7.95	14.3	12.7	-
R 65	-	16	-	-	-	16 ¾	-	469.90	11.13	17.5	16.0	4.8
R 66	-	-	16	-	-	(16)	-	469.90	15.88	22.4	20.6	4.1
R 67	-	-	-	16	-	-	-	469.90	28.58	36.5	34.9	-
R 68	18	-	-	-	-	-	-	517.53	7.95	14.3	12.7	-
R 69	-	18	-	-	-	-	-	533.40	11.13	17.5	16.0	4.8
R 70	-	-	18	-	-	(18)	-	533.40	19.05	25.4	23.9	4.8
R 71	-	-	-	18	-	-	-	533.40	28.58	36.5	34.9	-
R 72	20	-	-	-	-	-	-	558.80	7.95	14.3	12.7	-
R 73	-	20	-	-	-	21 ¼	-	584.20	12.70	19.1	17.5	4.8
R 74	-	-	20	-	-	(20 ¾)	-	584.20	19.05	25.4	23.9	4.8
R 75	-	-	-	20	-	-	-	584.20	31.75	39.7	38.1	-
R 76	24	-	-	-	-	-	-	673.10	7.985	14.3	12.7	-
R 77	-	24	-	-	-	-	-	692.15	15.88	22.4	20.6	-
R 78	-	-	24	-	-	-	-	692.15	25.40	33.3	31.8	-
R 79	-	-	-	24	-	-	-	692.15	34.94	44.5	41.3	-
R 80	22	-	-	-	-	-	-	615.95	7.95	-	12.7	-
R 81	-	22	-	-	-	-	-	635.00	14.29	-	19.1	-
R 82	-	-	-	-	-	-	-	57.14	11.13	-	16.0	4.8
R 84	-	-	-	-	-	-	-	63.50	11.13	-	16.0	4.8
R 85	-	-	-	-	-	-	-	79.38	12.70	-	17.5	3.3
R 86	-	-	-	-	-	-	-	90.50	15.88	-	20.6	4.1
R 87	-	-	-	-	-	-	-	100.03	15.88	-	20.6	4.1
R 88	-	-	-	-	-	-	-	122.83	19.05	-	23.9	4.8
R 89	-	-	-	-	-	-	-	114.30	19.05	-	23.9	4.8
R 90	-	-	-	-	-	-	-	155.58	22.23	-	26.9	4.8
R 91	-	-	-	-	-	-	-	260.25	31.75	-	38.1	4.1
R 92	-	-	-	-	-	-	-	228.60	11.11	17.5	15.9	-
R 93	-	26	-	-	-	-	-	749.30	19.05	-	23.9	-
R 94	-	28	-	-	-	-	-	800.10	19.05	-	23.9	-
R 95	-	30	-	-	-	-	-	857.25	19.05	-	23.9	-
R 96	-	32	-	-	-	-	-	914.40	22.23	-	27.0	-
R 97	-	34	-	-	-	-	-	965.20	22.23	-	27.0	-
R 98	-	36	-	-	-	-	-	1022.35	22.23	-	27.0	-
R 99	-	-	-	-	-	-	-	241.40	11.13	-	16.0	4.8
R 100	-	-	26	-	-	-	-	749.30	28.58	-	34.9	-
R 101	-	-	28	-	-	-	-	800.10	31.75	-	38.1	-
R 102	-	-	30	-	-	-	-	857.25	31.75	-	38.1	-
R 103	-	-	32	-	-	-	-	914.40	31.75	-	38.1	-
R 104	-	-	34	-	-	-	-	965.20	34.93	-	41.3	-
R 105	-	-	36	-	-	-	-	1022.35	34.93	-	41.3	-



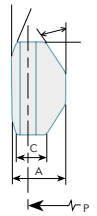
Flange gaskets Type RX* Ring-Joint-Gaskets according to API

For flanges according to API

Type RX sizes in inches

Ring No.	PRESSURE CLASS RATINGS (psi)			Pitch diameter of ring P	Outside diameter of ring OD	Width of ring A	Height of ring H
	2000	3000	5000				
	Nominal pipe size						
RX 20	-	-	-	2.688	3.000	0.344	0.750
RX 20**	-	-	2 1/16	2.688	3.000	0.344	0.750
RX 23	2 1/16	-	-	3.250	3.672	0.469	1.000
RX 24	-	2 1/16	2 1/16	3.750	4.172	0.469	1.000
RX 25**	-	-	3 1/8	4.000	4.313	0.344	0.750
RX 26	2 9/16	-	-	4.000	4.406	0.469	1.000
RX 27	-	2 9/16	2 1/16	4.250	4.656	0.469	1.000
RX 31	3 1/8	3 1/8	-	4.875	5.297	0.469	1.000
RX 35	-	-	3 1/8	5.375	5.797	0.469	1.000
RX 37	4 1/16	4 1/16	-	5.875	6.297	0.469	1.000
RX 39	-	-	4 1/16	6.375	6.797	0.469	1.000
RX 41	-	-	-	7.125	7.547	0.469	1.000
RX 44	-	-	-	7.625	8.047	0.469	1.000
RX 45	7 1/16	7 1/16	-	8.313	8.734	0.469	1.000
RX 46	-	-	7 1/16	8.313	8.750	0.531	1.125
RX 47	-	-	-	9.000	9.656	0.781	1.625
RX 49	9	9	-	10.625	11.047	0.469	1.000
RX 50	-	-	9	10.625	11.156	0.656	1.250
RX 53	11	11	-	12.750	13.172	0.469	1.000
RX 54	-	-	11	12.750	13.281	0.656	1.250
RX 57	13 3/8	13 3/8	-	15.000	15.422	0.469	1.000
RX 63	-	-	-	16.500	17.371	1.063	2.000
RX 65	16 1/4	-	-	18.500	18.922	0.469	1.000
RX 66	-	16 1/4	-	18.500	19.031	0.656	1.250
RX 69	-	-	-	21.000	21.422	0.469	1.000
RX 70	-	-	-	21.000	21.656	0.781	1.625
RX 73	21 1/4	-	-	23.000	23.469	0.531	1.250
RX 74	-	20 1/4	-	23.000	23.656	0.781	1.625
RX 82	-	-	-	2.250	2.672	0.469	1.000
RX 84	-	-	-	2.500	2.922	0.469	1.000
RX 85	-	-	-	3.125	3.547	0.531	1.000
RX 86	-	-	-	3.563	4.078	0.594	1.125
RX 87	-	-	-	3.938	4.453	0.594	1.125
RX 88	-	-	-	4.875	5.484	0.688	1.250
RX 89	-	-	-	4.500	5.109	0.719	1.250
RX 90	-	-	-	6.125	6.875	0.781	1.750
RX 91	-	-	-	10.250	11.297	1.388	1.781
RX 99	-	-	-	9.250	9.672	0.469	1.000
RX 201†	-	-	1 1/8	1.0813	2.026	0.226	0.445
RX 205†	-	-	1 1/16	2.250	2.453	0.219	0.437
RX 210†	-	-	2 4/16	3.500	3.844	0.375	0.750
RX 215	-	-	4 1/16	5.125	5.547	0.469	1.000
RX 215†	-	-	4 1/16 X4 1/4	5.125	5.547	0.469	1.000

† Denotes API Ring Joints for segmented flanges for dual completions to API Standard 6A



Flange gaskets Type RX* Ring-Joint-Gaskets according to API

For flanges according to API

Type R sizes in mm

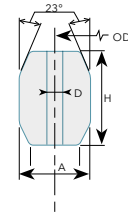
Ring No.	PRESSURE CLASS RATINGS (psi)			Pitch diameter of ring P	Outside diameter of ring OD	Width of ring A	Height of ring H
	2000	3000	5000				
	Nominal pipe size						
RX 20	-	-	-	68.26	76.20	8.73	19.05
RX 20**	-	-	2 1/16	68.26	76.20	8.73	19.05
RX 23	2 1/16	-	-	82.56	93.27	11.91	25.40
RX 24	-	2 1/16	2 1/16	95.25	105.97	11.91	25.40
RX 25**	-	-	3 1/8	101.60	109.54	8.73	19.05
RX 26	2 9/16	-	-	101.60	111.92	11.91	25.40
RX 27	-	2 9/16	2 11/16	107.95	118.27	11.91	25.40
RX 31	3 1/8	3 1/8	-	123.83	134.54	11.91	25.40
RX 35	-	-	3 1/8	136.53	147.24	11.91	25.40
RX 37	4 1/16	4 1/16	-	149.23	159.94	11.91	25.40
RX 39	-	-	4 1/16	161.93	172.64	11.91	25.40
RX 41	-	-	-	180.98	191.69	11.91	25.40
RX 44	-	-	-	193.68	204.39	11.91	25.40
RX 45	7 1/16	7 1/16	-	211.14	211.93	11.91	25.40
RX 46	-	-	7 1/16	211.14	222.25	13.49	28.58
RX 47	-	-	-	228.60	245.27	19.84	41.28
RX 49	9	9	-	269.88	280.59	11.91	25.40
RX 50	-	-	9	269.88	283.37	16.67	31.75
RX 53	11	11	-	323.85	334.57	11.91	25.40
RX 54	-	-	11	323.85	337.34	16.67	31.75
RX 57	13 3/8	13 3/8	-	381.00	391.72	11.91	25.40
RX 63	-	-	-	419.10	441.72	26.99	50.80
RX 65	16 1/4	-	-	469.90	480.62	11.91	25.40
RX 66	-	16 1/4	-	469.90	483.39	16.67	31.75
RX 69	-	-	-	533.40	544.12	11.91	25.40
RX 70	-	-	-	533.40	550.01	19.84	41.28
RX 73	21 1/4	-	-	584.20	596.11	13.49	31.75
RX 74	-	20 1/4	-	584.20	600.87	19.84	41.28
RX 82	-	-	-	57.15	67.87	11.91	25.40
RX 84	-	-	-	63.50	74.22	11.91	25.40
RX 85	-	-	-	79.38	90.09	13.49	28.58
RX 86	-	-	-	90.49	103.58	15.08	28.58
RX 87	-	-	-	100.01	113.11	15.08	28.58
RX 88	-	-	-	123.83	139.30	17.46	31.75
RX 89	-	-	-	114.30	129.78	18.26	31.75
RX 90	-	-	-	155.58	174.63	19.84	44.45
RX 91	-	-	-	260.35	286.94	30.16	45.24
RX 99	-	-	-	234.95	234.95	11.91	25.40
RX 201†	-	-	1 1/8	46.04	46.04	5.74	11.30
RX 205†	-	-	1 1/16	57.15	62.31	5.56	11.10
RX 210†	-	-	2 4/16	88.90	97.63	9.53	19.05
RX 215	-	-	4 1/16	130.18	140.89	11.91	25.40
RX 215†	-	-	4 1/16 X 4 1/4	130.18	140.89	11.91	25.40

† Denotes API Ring Joints for segmented flanges for dual completions to API Standard 6A

Flange gaskets Type BX*

Ring-Joint-Gaskets according to API

For flanges according to API
Type BX sizes in inches



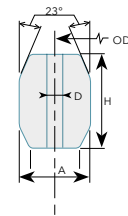
Ring No.	PRESSURE CLASS RATINGS (psi)				Outside diameter of ring OD	Height of ring H	Width of ring A	Hole size D
	5000	10000	15000	20000				
	Nominal pipe size							
BX150	-	-	-	-	2.842	0.366	0.366	0.06
BX151	-	1 13/16	1 13/16	1 13/16	3.008	0.379	0.379	0.06
BX152	-	2 1/16	2 1/16	2 1/16	3.334	0.403	0.403	0.06
BX153	-	2 9/16	2 9/16	2 9/16	3.974	0.448	0.448	0.06
BX154	-	3 3/16	3 3/16	3 3/16	4.600	0.488	0.488	0.06
BX155	-	4 1/16	4 1/16	4 1/16	5.825	0.560	0.560	0.06
BX156	-	7 1/16	7 1/16	7 1/16	9.367	0.733	0.733	0.12
BX157	-	9	9	9	11.593	0.826	0.826	0.12
BX158	-	11	11	11	13.860	0.911	0.911	0.12
BX159	-	13 5/8	13 5/8	13 5/8	16.800	1.012	1.012	0.12
BX160	13 5/8	-	-	-	15.850	0.938	0.541	0.12
BX161	-	-	-	-	19.347	1.105	0.638	0.12
BX162	16 3/4	16 3/4	-	-	18.720	0.560	0.560	0.06
BX163	18 3/4	-	-	-	21.896	1.185	0.684	0.12
BX164	-	18 3/4	18 3/4	-	22.463	1.185	0.968	0.12
BX165	21 1/4	-	-	-	24.595	1.261	0.728	0.12
BX166	-	21 1/4	-	-	25.198	1.261	1.029	0.12
BX167*	-	-	-	-	29.896	1.412	0.516	0.06
BX168†	-	-	-	-	30.128	1.412	0.632	0.06
BX169**	-	-	-	-	6.831	0.624	0.509	0.06
BX170	-	-	-	-	8.584	0.560	0.560	0.06
BX171	-	-	-	-	10.529	0.560	0.560	0.06
BX172	-	-	-	-	13.113	0.560	0.560	0.06
BX303††	-	-	-	-	33.573	1.494	0.686	0.06

* BX167 is suitable for 26 3/4 Nominal Pipe Size, 2,000 psi rating
 ** BX169 is suitable for 5 1/8 Nominal Pipe Size, 10,000 psi rating
 † BX168 is suitable for 26 3/4 Nominal Pipe Size, 3,000 psi rating
 † † BX168 is suitable for 30 Nominal Pipe Size, 2,000 and 3,000 psi rating

Flange gaskets Type BX*

Ring-Joint-Gaskets according to API

For flanges according to API
Type BX sizes in mm



Ring No.	PRESSURE CLASS RATINGS (psi)				Outside diameter of ring OD	Height of ring H	Width of ring A	Hole size D
	5000	10000	15000	20000				
	Nominal pipe size							
BX150	-	-	-	-	72.18	9.30	9.30	1.59
BX151	-	1 13/16	1 13/16	1 13/16	76.40	9.63	9.63	1.59
BX152	-	2 1/16	2 1/16	2 1/16	84.68	10.24	10.24	1.59
BX153	-	2 9/16	2 9/16	2 9/16	100.94	11.38	11.38	1.59
BX154	-	3 3/16	3 3/16	3 3/16	118.84	12.40	12.40	1.59
BX155	-	4 1/16	4 1/16	4 1/16	147.96	14.22	14.22	1.59
BX156	-	7 1/16	7 1/16	7 1/16	237.92	18.62	18.62	3.18
BX157	-	9	9	9	294.40	20.98	20.98	3.18
BX158	-	11	11	11	252.04	23.14	23.14	3.18
BX159	-	13 5/8	13 5/8	13 5/8	426.72	25.70	25.70	3.18
BX160	13 5/8	-	-	-	402.59	23.83	13.74	3.18
BX161	-	-	-	-	491.41	28.07	16.21	3.18
BX162	16 3/4	16 3/4	-	-	475.49	14.22	14.22	1.59
BX163	18 3/4	-	-	-	556.16	30.10	17.37	3.18
BX164	-	18 3/4	18 3/4	-	570.56	30.10	24.59	3.18
BX165	21 1/4	-	-	-	624.71	32.03	18.49	3.18
BX166	-	21 1/4	-	-	640.03	32.03	26.14	3.18
BX167*	-	-	-	-	759.36	35.87	13.11	1.59
BX168	-	-	-	-	765.25	35.87	16.05	1.59
BX169**	-	-	-	-	173.51	15.85	12.93	1.59
BX170	-	-	-	-	218.03	14.22	14.22	1.59
BX171	-	-	-	-	352.75	14.22	14.22	1.59
BX172	-	-	-	-	333.07	14.22	14.22	1.59
BX303	-	-	-	-	852.75	37.95	16.97	1.59

* BX167 is suitable for 26 3/4 Nominal Pipe Size, 13.8 MPa rating
 ** BX169 is suitable for 5 1/8 Nominal Pipe Size, 69 MPa rating
 † BX168 is suitable for 26 3/4 Nominal Pipe Size, 20.7 MPa rating
 † † BX168 is suitable for 30 Nominal Pipe Size, 13.8 and 20.7 MPa rating

Chemical resistance guide

Comparison of media resistance of most common gasket sealing materials mentioned in this brochure. There are four different cases:

- A** 1. Suitable
- B** 2. Depends on conditions
- C** 3. Not suitable
- 4. No data available

In case of resistance result is B, resistance depending on operating conditions, consult the engineers of Leader Gasket.

The following media resistance list should give an overview. For media that are not included in this list, you are advised to contact the engineering team of the Leader group.

*ePTFE: Clipperlon 2130, 2135, 600, 660

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Acetaldehyde	-	-	-	B	A	A	A	A	A
Acetamide	A	A	A	B	A	A	A	A	A
Acetic Acid	-	-	-	A	A	A	A	A	A
Acetic Acid Glacial	-	-	-	A	A	A	A	A	A
Acetic Anhydride	-	-	-	-	A	A	A	A	A
Acetone	A	-	A	B	A	A	A	A	A
Acetonitrile	-	-	-	-	A	A	A	A	A
Acetyl Chloride	-	-	-	-	A	A	A	A	A
Acetylene	A	A	A	B	A	A	A	A	A
Acrylic Acid	A	A	A	-	A	A	A	A	A
Acrylonitrile	A	A	A	-	A	A	A	A	A
Adipic Acid	A	A	A	A	A	A	A	A	A
Air	-	-	-	A	A	A	A	A	A
Allyl Chloride	-	-	-	-	A	A	A	A	A
Alum	A	B	A	A	A	A	A	A	A
Aluminium Acetate	A	A	A	A	A	A	A	A	A
Aluminium chlorate	A	A	A	A	-	-	-	-	-
Aluminium Chloride	A	C	A	A	A	A	A	A	A
Aluminium Hydroxide	-	-	-	-	A	A	A	A	A
Aluminium Sulphate	A	B	A	-	A	A	A	A	A
Aluminum fluoride	A	C	A	-	-	-	-	-	-
Ammonia	A	A	A	A	-	-	-	-	-
Ammonia Gas	A	A	A	A	A	A	A	A	A
Ammonium bifluoride	A	A	A	-	-	-	-	-	-
Ammonium Carbonate	A	A	A	A	A	A	A	A	A
Ammonium Chloride	A	B	A	A	A	A	A	A	A
Ammonium diphosphate	A	A	A	A	-	-	-	-	-
Ammonium fluoride	A	A	A	-	-	-	-	-	-
Ammonium Hydroxide	A	A	A	A	A	A	A	A	A
Ammonium Sulphate	-	-	-	-	A	A	A	A	A
Amyl Acetate	A	A	A	A	A	A	A	A	A
Amyl Alcohol	A	A	A	-	A	A	A	A	A
Aniline (aminobenzene)	A	A	A	B	A	A	A	A	A
Aqua Regia	C	C	A	-	A	A	A	A	A
Arcton 12	-	-	-	C	-	-	-	-	-
Arcton 22	-	-	-	C	-	-	-	-	-
Asphalt	-	-	-	A	A	A	A	A	A
Aviation Fuel	-	-	-	-	A	A	A	A	A
Barium Chloride	A	A	A	A	A	A	A	A	A
Barium salt, aqueous	A	A	A	-	-	-	-	-	-
Benzaldehyde	-	-	-	-	A	A	A	A	A
Benzene	A	A	A	B	A	A	A	A	A
Benzoic Acid	A	A	A	A	A	A	A	A	A
Benzonitrile	-	-	-	-	A	A	A	A	A

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Benzyl Alcohol	-	-	-	-	A	A	A	A	A
Benzyl Chloride	A	A	B	-	A	A	A	A	A
Black liquor (sulfate)	A	-	A	-	-	-	-	-	-
Black liquor (sulfide)	A	-	A	-	-	-	-	-	-
Blast Furnace Gas	-	-	-	A	A	A	A	A	A
Bleach (solution)	A	B	A	A	A	A	A	A	A
Boiler Feed Water	-	-	-	-	A	A	A	A	A
Borax	A	A	A	A	A	A	A	A	A
Boric Acid	A	A	A	A	A	A	A	A	A
Brine	-	-	-	-	A	A	A	A	A
Bromine	C	C	A	-	A	A	A	A	A
Bromine trifluoride	C	C	C	-	-	-	-	-	-
Butadiene	A	A	A	-	A	A	A	A	A
Butane	A	A	B	-	A	A	A	A	A
Butanol	A	A	A	B	A	A	A	A	A
Butanone (methyl ethyl ketone)	A	A	A	B	-	-	-	-	-
Butyl Acetate	A	A	A	B	A	A	A	A	A
Butyl Alcohol	-	-	-	B	A	A	A	A	A
Butyl amine	A	A	A	B	-	-	-	-	-
Butyl Methacrylate	-	-	-	-	A	A	A	A	A
Butylphenol	A	A	A	-	-	-	-	-	-
Butyric Acid	A	A	A	B	A	A	A	A	A
Calcium Chloride	A	B	A	A	A	A	A	A	A
Calcium Hydroxide	A	A	A	A	A	A	A	A	A
Calcium Hypochlorite	A	B	A	A	A	A	A	A	A
Calcium oxide	A	A	A	-	-	-	-	-	-
Calcium Sulphate	A	A	A	A	A	A	A	A	A
Carbamide (urea)	A	A	A	-	-	-	-	-	-
Carbolic Acid	A	A	A	-	A	A	A	A	A
Carbon Dioxide	A	A	A	A	A	A	A	A	A
Carbon Disulphide	A	A	A	B	A	A	A	A	A
Carbon hydride	A	A	A	-	-	-	-	-	-
Carbon Monoxide	-	-	-	-	A	A	A	A	A
Carbon Tetrachloride	A	A	A	B	A	A	A	A	A
Castor Oil	-	-	-	A	A	A	A	A	A
Caustic potash solution, liquid	A	A	A	-	-	-	-	-	-
Caustic Soda < 25%	A	C	A	-	C	B	B	A	A
Caustic Soda < 50%	A	C	A	-	C	B	B	A	A
Caustic Soda > 50%	A	C	A	-	C	B	B	A	A
Cesium melt	-	-	C	-	-	-	-	-	-
Chlorine (Dry)	A	A	A	B	A	A	A	A	A
Chlorine (Wet)	C	C	A	-	A	A	A	A	A
Chlorine bleach liquor	A	C	A	-	-	-	-	-	-
Chlorine Dioxide	C	C	A	-	A	A	A	A	A
Chlorine Liquid	C	C	A	-	A	A	A	A	A
Chlorine trifluoride	C	C	C	-	-	-	-	-	-
Chloroacetic Acid	A	C	A	-	A	A	A	A	A
Chlorobezene	A	A	A	-	A	A	A	A	A
Chloroform	A	A	A	B	A	A	A	A	A
Chloromethane (methyl chloride)	A	A	A	B	-	-	-	-	-
Chlorotrifluoride	-	-	-	-	C	C	C	C	C
Chromic Acid	A	A	A	B	A	A	A	A	A
Chroming solutions	B	B	-	-	-	-	-	-	-
Citric Acid	-	-	-	A	A	A	A	A	A
Condensation Water	-	-	-	A	A	A	A	A	A
Copper Acetate	A	A	A	A	A	A	A	A	A
Copper Sulphate	A	A	A	A	A	A	A	A	A
Creosote	-	-	-	-	A	A	A	A	A
Cresol	A	A	A	A	A	A	A	A	A
Crude Oil	-	-	-	A	A	A	A	A	A
Cyclohexane	A	A	A	-	A	A	A	A	A
Cyclohexanol	A	A	A	A	A	A	A	A	A
Cyclohexanone	A	A	A	B	A	A	A	A	A
Decalin (decahydronaphthalene)	A	A	A	A	-	-	-	-	-
Di-Benzyl Ether	A	A	A	B	A	A	A	A	A

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Dibutyl Phthalate	A	A	A	A	A	A	A	A	A
Diesel Oil	A	A	A	-	A	A	A	A	A
Diethanolamine	-	-	-	-	A	A	A	A	A
Diethyl ketone (3-Pentanone)	A	A	A	-	-	-	-	-	-
Diethylamine	-	-	-	-	A	A	A	A	A
Di-iso Butyl Ketone	-	-	-	-	A	A	A	A	A
Dimethyl Formamide	A	A	A	-	A	A	A	A	A
Dimethylamine	A	A	A	-	A	A	A	A	A
Dioxane	A	A	A	-	A	A	A	A	A
Diphenyl (biphenyl)	A	A	A	-	-	-	-	-	-
Diphyl (Dowtherm A)	-	-	-	A B	A	A	A	A	A
Dithiophosphoric acid	A	-	A	-	-	-	-	-	-
Ethane	A	A	A	A	A	A	A	A	A
Ethanoic acid (pure acetic acid)	A	B	A	-	-	-	-	-	-
Ethanol	A	A	A	B	A	A	A	A	A
Ethyl Acetate	A	A	A	B	A	A	A	A	A
Ethyl Acrylate	-	-	-	-	A	A	A	A	A
Ethyl Alcohol	A	A	A	B	A	A	A	A	A
Ethyl Chloride (Dry)	A	A	A	B	A	A	A	A	A
Ethyl Ether	A	A	A	B	A	A	A	A	A
Ethylbenzene	-	-	-	-	A	A	A	A	A
Ethylene	A	A	A	B	A	A	A	A	A
Ethylene Chloride	A	A	A	B	A	A	A	A	A
Ethylene diamine	A	A	A	B	-	-	-	-	-
Ethylene Glycol	A	A	A	A	A	A	A	A	A
Ethylene oxide	A	A	C	-	-	-	-	-	-
Fatty acids	-	-	-	A	-	-	-	-	-
Fatty alcohols	A	A	A	-	-	-	-	-	-
Fluorine benzene	A	A	A	-	-	-	-	-	-
Fluorine Dioxide	C	C	C	-	C	C	C	C	C
Fluorine Gaseous	-	-	-	-	C	C	C	C	C
Fluorine hydrogen chloride	A	A	B	-	-	-	-	-	-
Fluorine Liquid	C	C	C	-	C	C	C	C	C
Fluorine, gaseous	B	C	C	-	-	-	-	-	-
Fluoroboric acid (borofluoric acid)	C	C	A	-	-	-	-	-	-
Fluorocarbon (hydrofluorocarbons)	A	A	A	-	-	-	-	-	-
Fluorosilicic acid (HF)	-	-	A	-	-	-	-	-	-
Fluosilic acid	A	-	A	-	-	-	-	-	-
Formaldehyde	A	A	A	B	A	A	A	A	A
Formamide	A	A	A	-	A	A	A	A	A
Formic Acid 10%	A	B	A	A	A	A	A	A	A
Formic Acid 85%	-	-	-	B	A	A	A	A	A
Freon 12	-	-	-	C	-	-	-	-	-
Freon 22	-	-	-	C	-	-	-	-	-
Fuel Oil	-	-	-	A	A	A	A	A	A
Gas (LPG)	-	-	-	-	A	A	A	A	A
Gas (Natural Gas)	-	-	-	-	A	A	A	A	A
Gas Oil	-	-	-	-	A	A	A	A	A
Gasoline	A	A	A	B	A	A	A	A	A
Generator Gas	-	-	-	-	A	A	A	A	A
Glucose	-	-	-	-	A	A	A	A	A
Glycerine	A	A	A	A	A	A	A	A	A
Gylcol	A	A	A	-	A	A	A	A	A
Heating Oil	-	-	-	B	A	A	A	A	A
Heptane	A	A	A	-	A	A	A	A	A
Hexachloro benzene	-	-	-	A	-	-	-	-	-
Hexamine (Urotropine)	A	-	-	-	-	-	-	-	-
Hexane	-	-	-	-	A	A	A	A	A
Hydraulic Oil	-	-	-	-	A	A	A	A	A
Hydraulic oil	A	A	A	A	-	-	-	-	-
Hydrazine	A	A	A	-	-	-	-	-	-
Hydrazine hydrate	A	A	A	A	-	-	-	-	-
Hydrochloric acid (aqueous)	A	C	A	A	-	-	-	-	-
Hydrochloric acid (dry)	A	C	A	A	-	-	-	-	-
Hydrochloric Acid 20%	A	C	A	A	A	A	A	A	A

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Hydrochloric Acid 37%	A	C	A	A	A	A	A	A	A
Hydrocyanic acid	A	A	A	-	-	-	-	-	-
Hydrofluoric Acid <65%	A	C	A	-	C	C	C	A	A
Hydrofluoric Acid >65%	-	-	-	-	C	C	C	B	A
Hydrofluorosillic Acid	-	A	A	-	C	C	C	B	B
Hydrogen	-	-	-	A	A	A	A	A	A
Hydrogen Chloride (Dry)	A	C	A	-	A	A	A	A	A
Hydrogen Flouride	A	C	A	B	C	C	C	C	A
Hydrogen Peroxide (6%)	B	A	A	A	A	A	A	A	A
Hydrogen Sulphide	A	B	A	-	A	A	A	A	A
Hydrosilicic fluoric acid	A	-	A	-	-	-	-	-	-
Hydrosilico fluoride	A	-	A	-	-	-	-	-	-
Iodine	A	A	A	-	-	-	-	-	-
Isoctane	A	A	A	A	A	A	A	A	A
Isopropyl Acetate	-	-	-	-	A	A	A	A	A
Isopropyl Alcohol	A	A	A	B	A	A	A	A	A
Isopropyl Ether	-	-	-	-	A	A	A	A	A
Kerosene	A	A	A	A	A	A	A	A	A
Kerosine	A	A	A	-	-	-	-	-	-
Ketone	A	A	A	-	-	-	-	-	-
Lactic Acid	A	B	A	A	A	A	A	A	A
Lauryl alcohol	A	A	A	-	-	-	-	-	-
Lead acetate	A	A	A	A	-	-	-	-	-
Lead arsenate	A	A	A	A	-	-	-	-	-
Lime water	A	A	A	-	-	-	-	-	-
Linseed Oil	-	-	-	A	A	A	A	A	A
Liquid Petroleum Gas	-	-	-	-	A	A	A	A	A
Lithium bromide	A	A	A	-	-	-	-	-	-
Lithium melt	-	-	C	-	-	-	-	-	-
Lubricating Oil	-	-	-	-	A	A	A	A	A
Luminescent gas	-	-	-	B	-	-	-	-	-
Machine Oil	-	-	-	-	A	A	A	A	A
Magnesium hydroxide	A	A	A	-	-	-	-	-	-
Magnesium Sulphate	A	A	A	A	A	A	A	A	A
Maleic Acid	A	A	A	A	A	A	A	A	A
Maleic Anhydride	A	A	A	-	A	A	A	A	A
Methane	A	A	A	B	A	A	A	A	A
Methanol	A	A	A	B	A	A	A	A	A
Methyl Alcohol	A	A	A	B	A	A	A	A	A
Methyl Chloride	-	-	-	B	A	A	A	A	A
Methyl Ethyl Ketone	-	-	-	B	A	A	A	A	A
Methyl Methacrylate	-	-	-	-	A	A	A	A	A
Methylated Spirits	-	-	-	-	A	A	A	A	A
Methylene Chloride	A	B	B	B	A	A	A	A	A
Mineral Oil	-	-	-	A	A	A	A	A	A
Mobiltherm 600	-	-	-	-	A	A	A	A	A
Mobiltherm 603/605	-	-	-	-	A	A	A	A	A
Molten Alkali Metals	-	-	-	-	C	C	C	C	C
Morpholine	A	-	A	-	-	-	-	-	-
Motor Oil	-	-	-	-	A	A	A	A	A
Naphtha	A	-	A	-	A	A	A	A	A
Naphthalene	A	-	A	-	A	A	A	A	A
Natural Gas	A	A	A	B	A	A	A	A	A
Nickel Chloride	-	-	-	-	A	A	A	A	A
Nickel Sulphate	-	-	-	-	A	A	A	A	A
Nitric Acid < 30%	B	C	A	A	A	A	A	A	A
Nitric Acid > 30%	B	C	A	A	A	A	A	A	A
Nitric Acid Red Fuming	-	-	-	-	A	A	A	A	A
Nitrobenzene	A	A	A	A	-	-	-	-	-
Nitrogen	-	-	-	A	A	A	A	A	A
Octane	A	A	A	A	A	A	A	A	A
Oil	A	A	A	-	-	-	-	-	-
Oleic Acid	A	A	A	A	A	A	A	A	A
Oleum	C	C	A	A	A	A	A	C	A
Oxalic Acid	A	C	A	A	A	A	A	A	A
Oxygen	A	A	A	A	A	C	C	A	A

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Paint thinner	-	-	-	A	-	-	-	-	-
Palmitic Acid	A	A	A	A	A	A	A	A	A
Paraffin	-	-	-	-	A	A	A	A	A
p-dihydroxybenzene	A	-	A	-	-	-	-	-	-
Pentane	A	A	A	A	A	A	A	A	A
Perchloric Acid	B	C	A	-	A	A	A	A	A
Perchloro ethylene	A	A	A	B	A	A	A	A	A
Petrol ether	-	-	-	B	-	-	-	-	-
Petroleum	A	A	A	A	A	A	A	A	A
Phenol	A	A	A	A	A	A	A	A	A
Phosgene	A	A	A	-	A	A	A	A	A
Phosphoric Acid < 45%	A	A	A	A	A	A	A	A	A
Phosphoric Acid > 45%	A	B	A	A	B	B	B	A	A
Phosphoric acid, impure	A	B	A	-	-	-	-	-	-
Phthalic Acid	A	A	A	A	A	A	A	A	A
Phthalic Anhydride	-	-	-	-	A	A	A	A	A
Polychlorinated biphenyl (Clophen)	A	A	A	-	-	-	-	-	-
Potassium Acetate	A	A	A	A	A	A	A	A	A
Potassium bifluorine, saturated	A	A	A	-	-	-	-	-	-
Potassium Carbonate	A	A	A	A	A	A	A	A	A
Potassium Chlorate	C	A	A	A	A	A	A	A	A
Potassium Chloride	A	A	A	A	A	A	A	A	A
Potassium chromate	B	C	A	-	-	-	-	-	-
Potassium chrome sulfate	-	C	A	A	-	-	-	-	-
Potassium Cyanide	A	A	A	A	A	A	A	A	A
Potassium Dichromate <20%	-	-	-	A	A	A	A	A	A
Potassium Hydroxide < 50%	A	A	A	A	C	C	C	A	A
Potassium Hydroxide >50%	A	A	A	A	C	C	C	A	A
Potassium Hypochlorite	A	C	A	A	A	A	A	A	A
Potassium iodide	A	A	A	A	-	-	-	-	-
Potassium melt up to 350 °C	A	-	C	-	-	-	-	-	-
Potassium Nitrate	C	C	A	A	A	A	A	A	A
Potassium nitrate (melt)	C	C	C	-	-	-	-	-	-
Potassium Permanganate	A	A	A	A	A	A	A	A	A
Potassium silicate	A	A	A	-	-	-	-	-	-
Producer Gas	-	-	-	-	A	A	A	A	A
Propane	A	A	A	A	A	A	A	A	A
Pyridine	A	A	A	B	A	A	A	A	A
Rape Seed Oil	-	-	-	A	A	A	A	A	A
Refrigerant R11	-	-	-	-	A	A	A	A	A
Refrigerant R112	-	-	-	-	A	A	A	A	A
Refrigerant R113	-	-	-	-	A	A	A	A	A
Refrigerant R114	-	-	-	-	A	A	A	A	A
Refrigerant R114B2	-	-	-	-	A	A	A	A	A
Refrigerant R115	-	-	-	-	A	A	A	A	A
Refrigerant R12	-	-	-	-	A	A	A	A	A
Refrigerant R123	-	-	-	-	A	A	A	A	A
Refrigerant R125	-	-	-	-	A	A	A	A	A
Refrigerant R13	-	-	-	-	A	A	A	A	A
Refrigerant R134A	-	-	-	-	A	A	A	A	A
Refrigerant R13B1	-	-	-	-	A	A	A	A	A
Refrigerant R141A	-	-	-	-	A	A	A	A	A
Refrigerant R141B	-	-	-	-	A	A	A	A	A
Refrigerant R152A	-	-	-	-	A	A	A	A	A
Refrigerant R22	-	-	-	-	A	A	A	A	A
Refrigerant R402A	-	-	-	-	A	A	A	A	A
Refrigerant R402B	-	-	-	-	A	A	A	A	A
Refrigerant R404A	-	-	-	-	A	A	A	A	A
Refrigerant R502	-	-	-	-	A	A	A	A	A
Refrigerant R507	-	-	-	-	A	A	A	A	A
Salicylic Acid	-	-	-	-	A	A	A	A	A
Salicylic acid	A	A	A	A	-	-	-	-	-
Santotherm 66	-	-	-	-	A	A	A	A	A
Sea Water	-	-	-	A	A	A	A	A	A
Silicone Oil	-	-	-	A	A	A	A	A	A

	Graphite Foil	SS316	PTFE	Leader THERM	Clipperlon 2100	Clipperlon 2110	Clipperlon 2115 USP	Clipperlon 2120	Clipperlon 2130, 2135, 600, 660 ePTFE
Silver Nitrate	-	-	-	-	A	A	A	A	A
Skydrol 500	-	-	-	A	-	-	-	-	-
Soap	-	-	-	A	A	A	A	A	A
Soda	A	A	A	-	-	-	-	-	-
Sodium acetate	A	A	A	-	-	-	-	-	-
Sodium Aluminate	A	-	A	A	A	A	A	A	A
Sodium ammonium hydrogen phosphate	A	A	A	-	-	-	-	-	-
Sodium Bicarbonate	A	A	A	A	A	A	A	A	A
Sodium Bisulphite	A	A	A	A	A	A	A	A	A
Sodium carbonate	A	A	A	A	-	-	-	-	-
Sodium Chloride	A	B	A	A	A	A	A	A	A
Sodium cyanide	A	A	A	A	-	-	-	-	-
Sodium hexafluoroaluminate / cryolite	A	-	A	-	-	-	-	-	-
Sodium Hydroxide < 25%	A	C	A	A	C	B	B	A	A
Sodium Hydroxide < 50%	A	C	A	A	C	B	B	A	A
Sodium Hydroxide > 50%	A	C	A	A	C	B	B	A	A
Sodium hypochlorite	A	C	A	-	-	-	-	-	-
Sodium melt up to 350 °C	A	-	C	-	-	-	-	-	-
Sodium phosphate, bibasic	A	A	A	-	-	-	-	-	-
Sodium phosphate, tribasic	A	A	A	-	-	-	-	-	-
Sodium Silicate	A	A	A	A	A	A	A	A	A
Sodium Sulphate	A	A	A	A	A	A	A	A	A
Sodium Sulphide	A	B	A	A	A	A	A	A	A
Starch	-	-	-	A	A	A	A	A	A
Steam	-	-	-	A	A	A	A	A	A
Stearic Acid	A	A	A	A	A	A	A	A	A
Styrene	A	A	C	-	A	A	A	A	A
Sugar	-	-	-	A	A	A	A	A	A
Sulphur	-	-	-	-	A	A	A	A	A
Sulphur Dioxide Dry	A	A	A	A	A	A	A	A	A
Sulphur Trioxide	C	C	A	-	A	A	A	A	A
Sulphuric Acid 30%	A	C	A	C	A	A	A	A	A
Sulphuric Acid 50%	A	C	A	C	A	A	A	A	A
Sulphuric Acid 96%	A	C	A	C	A	A	A	B	A
Sulphuric Acid Fuming	C	C	A	-	A	B	B	C	A
Sulphurous Acid	A	B	A	A	A	A	A	A	A
Tannic Acid	A	A	A	A	A	A	A	A	A
Tannin	A	A	A	-	-	-	-	-	-
Tar	-	-	-	A	A	A	A	A	A
Tartaric Acid	-	-	-	A	A	A	A	A	A
Tetrachloro ethane	A	A	A	B	A	A	A	A	A
Tetrafluor boric acid (HF)	A	C	A	-	-	-	-	-	-
Tetraline	A	A	A	A	-	-	-	-	-
Thermal Oil	-	-	-	-	A	A	A	A	A
Toluene	A	A	A	A	A	A	A	A	A
Transformer Oil	-	-	-	A	A	A	A	A	A
Transmission Oil	-	-	-	-	A	A	A	A	A
Tricalcium phosphate	A	A	A	-	-	-	-	-	-
Trichlorethylene	A	A	A	B	A	A	A	A	A
Trichlorotrifluoroethane (F113)	A	A	B	-	-	-	-	-	-
Triethanolamine	A	-	A	A	A	A	A	A	A
Triethylene aluminium	A	-	C	-	-	-	-	-	-
Triethylenetetramine	A	-	A	-	-	-	-	-	-
Trisodium phosphate	A	A	A	-	-	-	-	-	-
Turpentine	A	A	A	A	A	A	A	A	A
Urea	-	-	-	A	A	A	A	A	A
Vegetable Oil	-	-	-	-	A	A	A	A	A
Vinyl Acetate	-	-	-	A	A	A	A	A	A
Vinyl Bromide	-	-	-	-	A	A	A	A	A
Vinyl Chloride	A	-	A	-	A	A	A	A	A
Water	-	-	-	A	A	A	A	A	A
White Spirit	-	-	-	-	A	A	A	A	A
Xylene	-	-	-	A	A	A	A	A	A
Zinc Chloride	-	-	-	-	A	A	A	A	A
Zinc Sulphate	-	-	-	-	A	A	A	A	A

Profile overview

LEADER SPIRAL WOUND GASKETS

Drawing	Style	Description
	S	without inner or outer ring
	SR	with outer ring
	SI	with inner ring
	SRI	with inner or outer ring

LEADERKAM KAMMPROFILE GASKET

Drawing	Style	Description
	KV	without centering rim
	KV9	with machined centering rim
	KV9L	with loose centering rim
	KV9S	with centering rim and snap ring
	KVH	with centering hook
	KB	crowned, without centering rim
	KB9	crowned, with machined centering rim
	KB9L	crowned, with machined centering rim
	KB9S	crowned, with centering rim and snap ring

LEADER SMOOTH SHEET METAL GASKETS

Drawing	Style	Description
	MRG	Steel carrier/Graphite

LEADER CORRUGATED GASKET

Drawing	Style	Description
	CG4	fully faced
	CG4	with eyelet
	CG41	part - faced
	G3	cord facing

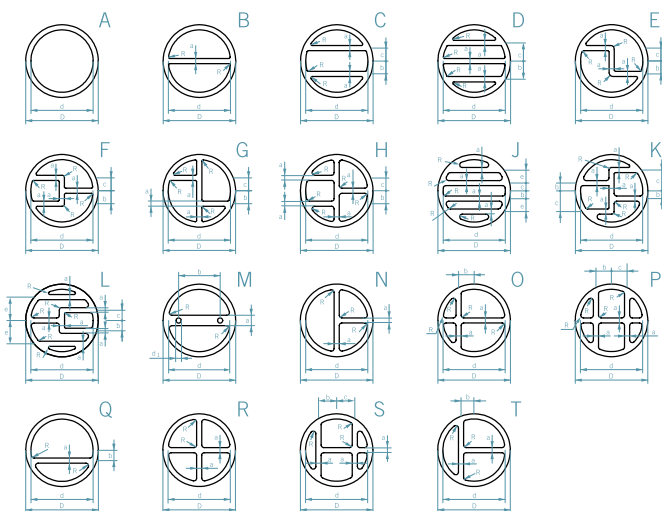
LEADER RTJ GASKETS

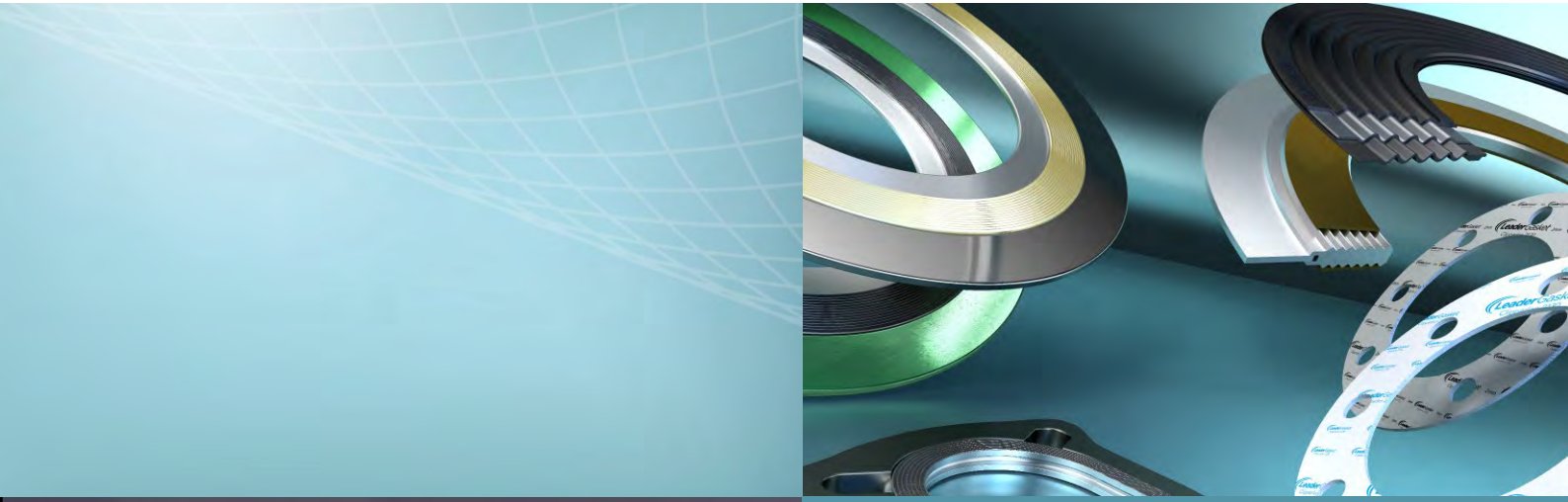
Drawing	Style	Description
	OV	Oval
	OC	Octagonal
	RX	RX
	BX	BX

LEADER METAL JACKETED GASKETS

Drawing	Style	Description
	Z9	Flat, closed
	GG3	Corrugated, closed
	Z3	External, open
	Z13	Top, open

MACHINE AND HEAT EXCHANGER GASKETS





Leader Gasket warrants that its products are manufactured in accordance with its applicable material specifications and are free from defects in materials and workmanship using Leader Gasket' specifications as a standard. Only products which are installed and used in accordance with applicable Leader Gasket instructions and specifications are in any way warranted by Leader Gasket. This warranty is applicable only to claims made in writing and reviewed by Leader Gasket within 30 days after the defect was discovered or should have been discovered and within one year after the date of shipment of the product by Leader Gasket. All other claims are waived. If a claim is made, you must allow reasonable investigation of the product you claim is defective and you must supply samples that adequately demonstrate the problem you claim for testing by Leader Gasket.

Leader Gasket makes no other representation or warranty of any kinds, express or implied, in fact or in law, including without limitation, length of service life, merchantability, or the fitness for a particular purpose, other than the limited warranty set forth above. The limited warranty provides your exclusive remedy as a modified or amended only by a written instrument signed by a duly authorized representative of Leader Gasket. Without an express written authorization from Leader Gasket, no retailer or distributor of Leader Gasket has the authority to modify or amend the limited warranty.



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