Kammtex Gaskets

texas controls
Leading Smart Bolting

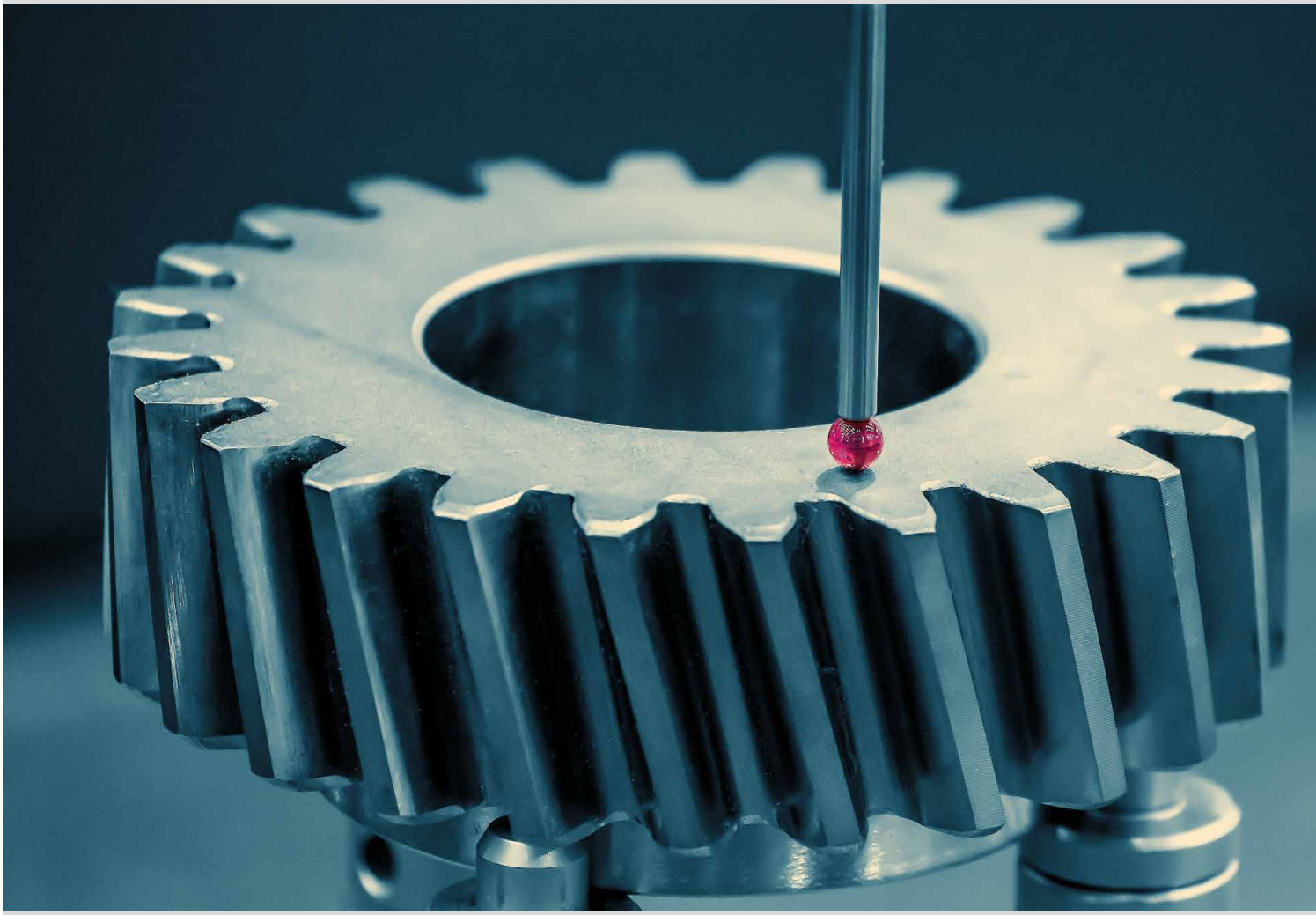
purpose:
ZERO
incidents

Texas Controls
Leading Engineering company specialising in **Sealing & Bolting** Solutions

We guarantee safe bolted joints and leak free plants with a qualified, specialized, and technological approach:

- Automated and guided error-free tightening
- Time savings of up to 30% during bolting tasks
- Cost-saving in maintenance
- Smart tools with data capture capability

Texas Controls is an engineering company specialising in bolting and sealing solutions with a global network of 6 international locations and several local subsidiaries. We offer complete bolting systems at all stages, as well as complete process control for leak-free joints. Leak-free plants and safe bolted joints are our main hallmarks. With more than 25 years of experience supporting the wind power and petrochemical industries, we are among the most important drivers of innovation.



Design & Manufactured Tools in our factory in Bergondo

International Standards

+ CE European Certificates
+ UKCA Certificate
+ RoHS Certificate
+ ASME PCC-1
+ ISO 9001
+ ISO 14001
+ ISO 45001
+ Testing & Evaluation

HIGH QUALITY CONTROL SYSTEM

Best-in-Class Quality Assurance System

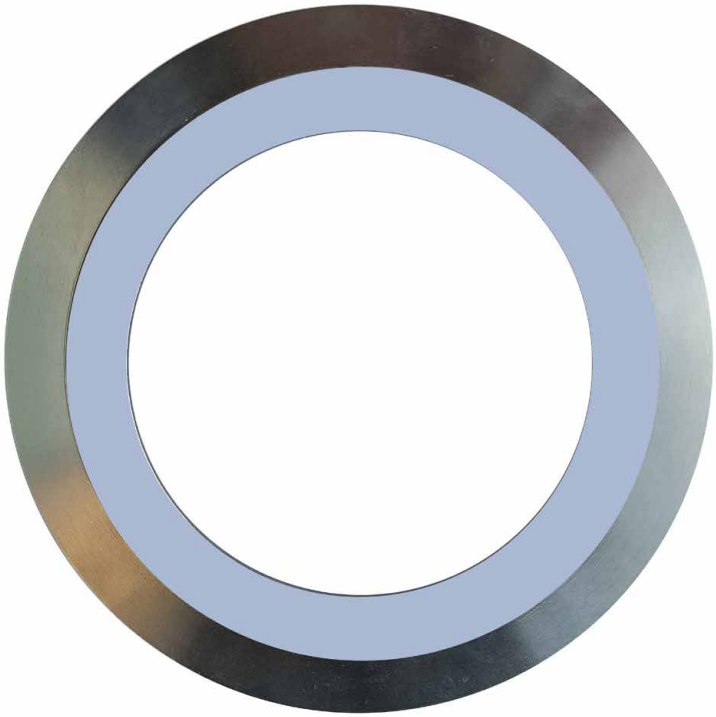
Control of the processes
High qualified technicians
The highest quality raw materials and components
Quality inspection at production

+ INFO

KAMMTEX

THE VERSATILE GASKET

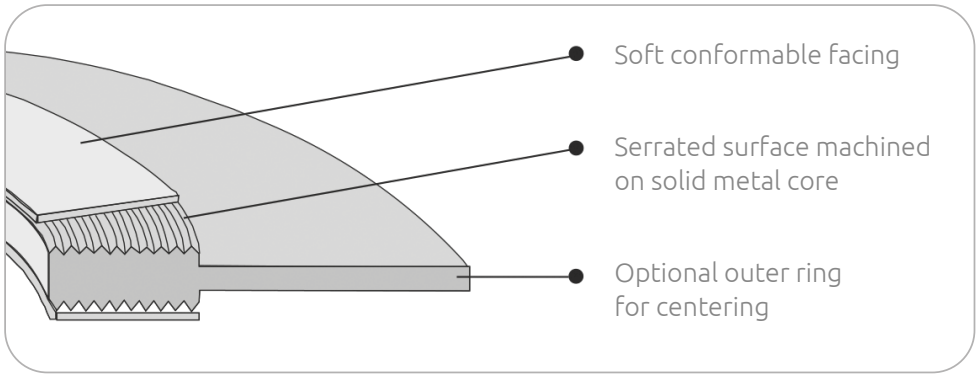
Easy to Install | Uniformly Strong | Free from Oxidation | High & Low Temperatures



Compressibility, Low Stress & Convenience

The compressibility of a sheet gasket; the sealability of a spiral wound gasket and the ease of handling of a solid metal gasket

+ The KAMMTEX AERO gasket consists of a concentrically machined metal core and a soft, formable sealing material bonded to each face. This soft material allows the gasket to seat at low loads, while the machined geometry of the metal core intensifies the sealing capability by concentrating load on the sealing surfaces. The machined grooves minimize lateral movement of the sealing material, while the metal core provides the gasket with rigidity and resistance to leakage
+ Excellent compressibility and recovery characteristics ensure joint tightness under temperature and pressure fluctuations, differential temperatures across the flange face, bolt relaxation, and creep.
+ They are suitable for use in vacuum conditions up to extreme pressures.

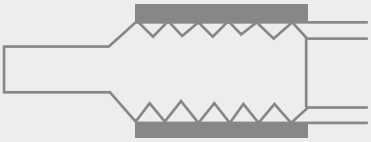


PRODUCT RANGE

STANDARD KAMMTEX

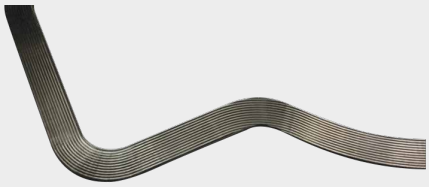
Standard Kammtex are selected for use in confined locations, including male and female, tongue and groove, spigotted and/or recessed flange arrangements.

KAMMTEX OR



Kammtex OR utilises an integral outer locating ring for correct gasket positioning within the flange assembly bolt circle. Kammtex OR gaskets are recommended for us in standard raised face and flat face flange assemblies.

CUSTOM SHAPES



Wide range of non-circular shapes and sizes

These are particularly useful for applications that need the narrow sealing element and low-stress seating of a kammprofile but traditionally have had to use lower-grade products such as jacketed or metal-reinforced gaskets. Applications include oval, obround, and square manway, and boiler floor joints, and large rectangle gaskets for fin-fan header boxes.

Ideal for shell and tube style heat exchanger flanges

While appropriate for application across a broad spectrum of challenging scenarios on standard pipeline flanges, the Kammtex gasket has emerged as a dependable and cost-efficient substitute for metal jacketed gaskets commonly utilized in heat exchanger contexts.
By opting for the KAMMTEX gasket, users can ensure a dependable seal from the initial hydrotest phase to enduring through demanding operational environments. Specifically engineered for TEMA flanges, Kammtex gaskets can also accommodate pass partition ribs in various configurations as needed. Offering a high-integrity seal with minimal seating stress, the KAMMTEX gasket is particularly well-suited for heat exchanger applications characterized by limited bolt load or less rigid flanges.

CORE MATERIAL	MAX. TEMPERATURE
Stainless steel	535-870ºC
Carbon steel	535ºC
Aluminium	425ºC
Monel®	815ºC
Nickel	650ºC
Inconel®	1100ºC
Titanium Gr. 2	1095ºC
Duplex 2205* (UNS S31803)	300ºC

** Duplex is subject to embritlement between 350ºC and 500ºC*

Standard Core Materials

Standard core thickness is 3.0 mm; other thicknesses and materials are readily available to s uit specific applications

Standard Facing Materials

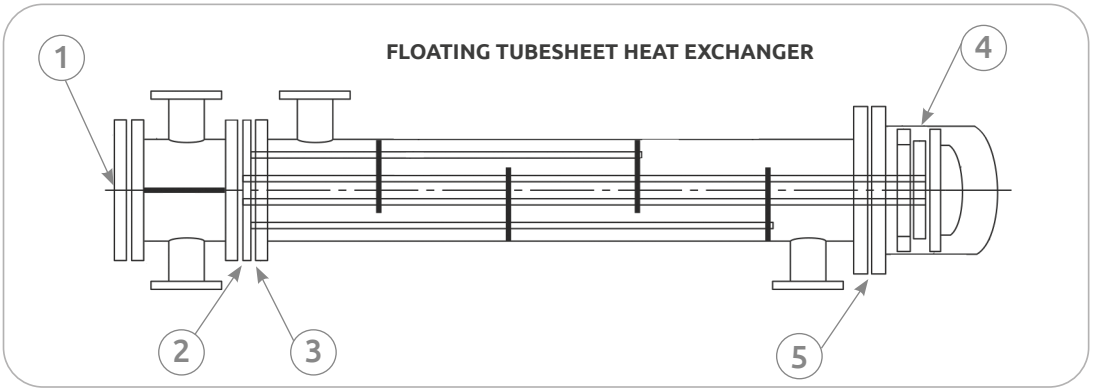
Standard facing thickness is 0.5 mm or 0.75 mm (material dependent); other thicknesses and materials are readily available to suit specific applications.

Flange Surface Finish Requirements

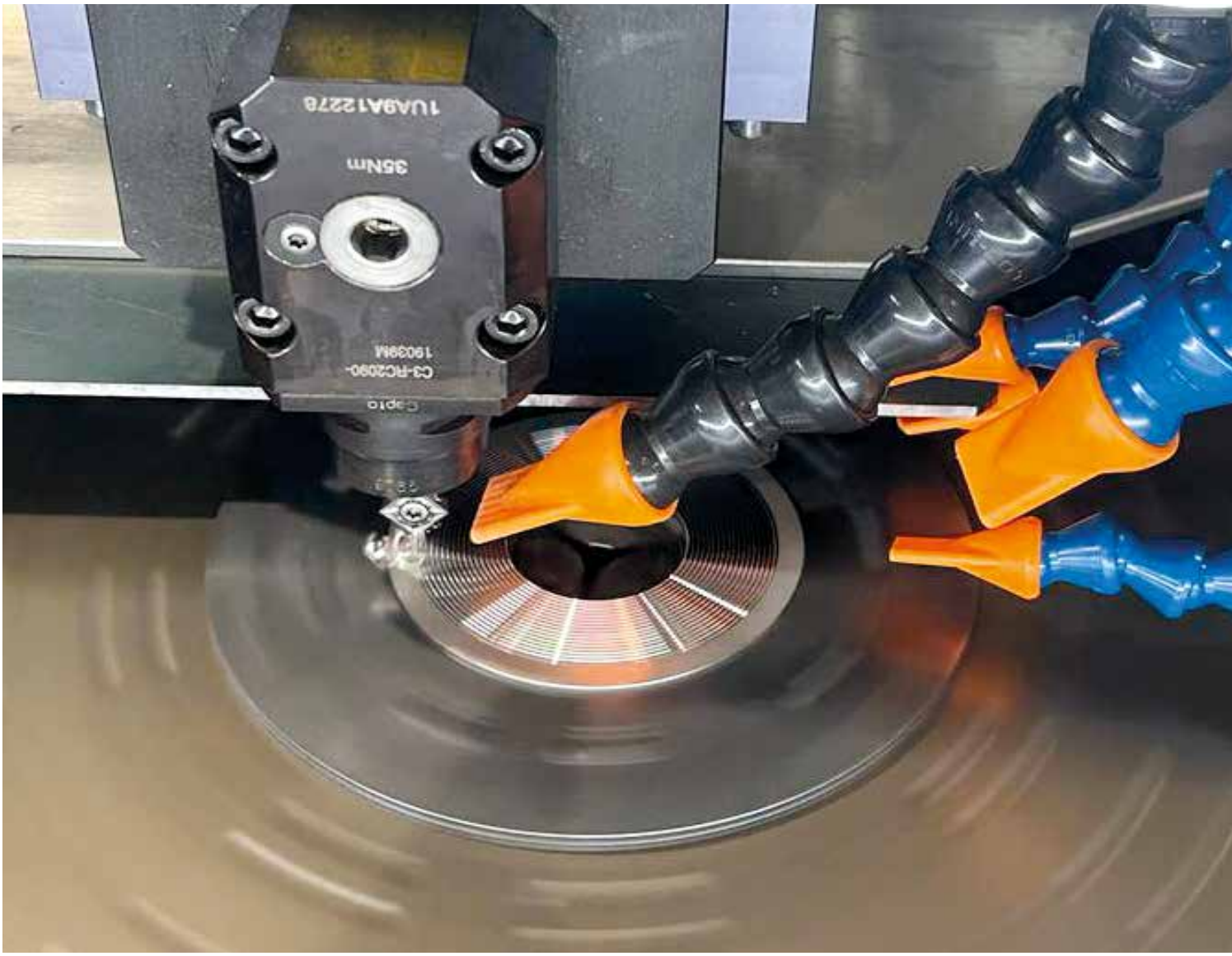
The ideal flange surface finish for use with Kammtex gaskets is 3.2 - 6.4 µ- metre Ra (125-250 µ- inch Ra)

FACING MATERIAL	MAX. TEMPERATURE	SEATING STRESS AT ROOM TEMP.	
		MIN. PSI (MPA)	MAX. PSI (MPA)
Thermiculite®	1000ºC	2500 (17)	72500 (500)*
Graphite	450ºC	2500 (17)	72500 (500)*
Biaxial PTFE	260ºC	2500 (17)	72500 (500)*
Virgin PTFE	260ºC	2500 (17)	72500 (500)*
Soft Metals	Per material	Per material	Per material

** While high stresses have been utilised, Texas Controls should be contacted for operating stresses above 40.000 psi*



1. Channel cover
2. Tubesheet to channel box
3. Shell to tubesheet
4. Floating head
5. Shell cover

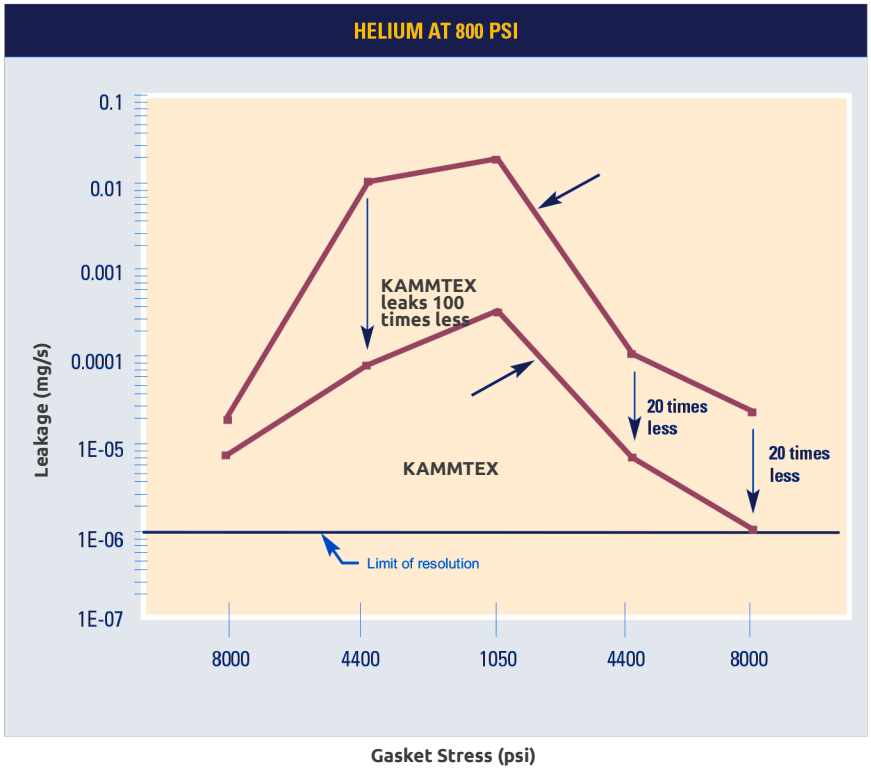


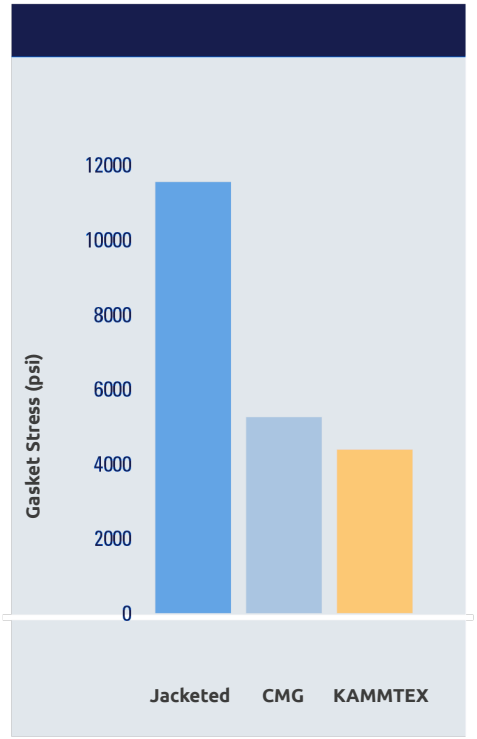
Cyclic Service Comparison

Throughout operation, a bolted-gasketed joint may experience unloading owing to factors such as pressurization, pressure and temperature fluctuations, thermal influences, and joint relaxation. Empirical data from PVRC testing validates the exceptional capability of the KAMMTEX gasket in preserving tightness amidst these cyclic loading circumstances. Illustrated in the graph, when gasket stress diminishes from 8000 psi to 4400 psi, the KAMMTEX gasket exhibits leakage rates 100 times lower than those of a comparable corrugated metal graphite gasket (CMG).
A more secure joint equates to a safer operation!

T3 Tighteness

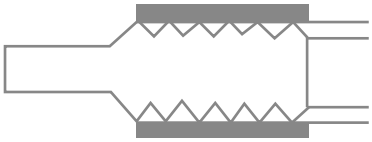
The PVRC has established a method to assess gasket performance, delineating three tightness classes: T1 (economy), T2 (standard), and T3 (tight). A T3 classification signifies a helium mass leak rate per unit diameter of 0.00002 mg/sec-mm. This graph vividly illustrates that the KAMMTEX gasket achieves a T3 tightness class even at the lowest seating stress when juxtaposed with other gasket types. These findings are derived from PVRC test data, employing a gasket measuring 20" ID x 20.5" OD, secured with 20 bolts of 1" diameter and an assembly efficiency of 0.75. The KAMMTEX gasket is particularly well-suited for applications featuring limited bolt load and/or lightweight flanges.





DIMENSIONAL DATA

ASME B16.20



KAMMTEX OR

NOMINAL BORE		SEALING INNER DIAMETER	SEALING OUTER DIAMETER	CENTERING RING OUTER DIAMETER						
INCHES	MM			150 Class	300 Class	400 Class	600 Class	900 Class	1500 Class	2500 Class
½	15	23.1	33.3	47.8	54.1	Note (2)	54.1	Note (3)	63.5	69.9
¾	20	28.7	39.6	57.2	66.8	Note (2)	66.8	Note (3)	69.9	76.2
1	25	36.6	47.5	66.8	73.2	Note (2)	73.2	Note (3)	79.5	85.9
1 1/4	32	44.5	60.2	76.2	82.6	Note (2)	82.6	Note (3)	88.9	104.9
1 1/2	40	52.3	69.9	85.9	95.3	Note (2)	95.3	Note (3)	98.6	117.6
2	50	69.9	88.9	104.9	111.3	Note (2)	111.3	Note (3)	143.0	146.1
2 1/2	65	82.6	101.6	124.0	130.3	Note (2)	130.3	Note (3)	165.1	168.4
3	80	98.3	123.7	136.7	149.4	Note (2)	149.4	168.4	174.8	196.9
4	100	123.7	153.9	174.8	181.1	177.8	193.8	206.5	209.6	235.0
5	125	150.9	182.6	196.9	215.9	212.9	241.3	247.7	254.0	279.4
6	150	177.8	212.6	222.3	251.0	247.7	266.7	289.1	282.7	317.5
8	200	228.6	266.7	279.4	308.1	304.8	320.8	358.9	352.6	387.4
10	250	282.7	320.8	339.9	362.0	358.9	400.1	435.1	435.1	476.3
12	300	339.6	377.7	409.7	422.4	419.1	457.2	498.6	520.7	549.4
14	350	371.6	409.7	450.9	485.9	482.6	492.3	520.7	577.9	Note (4)
16	400	422.4	466.6	514.4	539.8	536.7	565.2	574.8	641.4	Note (4)
18	450	479.3	530.1	549.4	596.9	593.9	612.9	638.3	704.9	Note (4)
20	500	530.1	580.9	606.6	654.1	647.7	682.8	698.5	755.7	Note (4)
24	600	631.7	682.5	717.6	774.7	768.4	790.7	838.2	901.7	Note (4)

GENERAL NOTES
Dimensions in mm. Tolerances in mm.
Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

NOTES
1) Tolerances +/- 0.8mm for all diameters
2) There is no Class 400 flanges in NPS ½" through NPS 3" (use Class 600)
3) There is no Class 900 flanges in NPS ½" through NPS 2.½" (use Class 1500)
4) There is no Class 2500 flanges in NPS 14" and larger

Do you need more dimensions, perhaps based on other codes?

OTHER CHARTS

Typical Applications

Hydrogen
Design Temperature - 850ºF
Design Pressure -3,000 psi

Natural gas
Design Temperature - Ambient
Design Pressure - 600 psi

Heat transfer fluid
Design Temperature - 575ºF
Design Pressure - 290 psi

Exhaust gas
Design Temperature - 1300ºF
Design Pressure - 20 psi

Steam
Design Temperature - 575ºF
Design Pressure - 250 psi

Hydrogen
Design Temperature - 900ºF
Design Pressure - 800 psi

MAIN FEATURES	
Superior Tightness	Longer life, no need to “hot torque”, less maintenance, reduced emissions
Wide Range of Materials	Core and facing materials to suit almost any application
Reproducible Construction	Assures consistency from lot to lot
Easy to Handle e Install	Rigid core facilitates easy handling, less damage
Wide Pressure Range	Suitable from vacuum to class 2500 and higher. reduces inventory requirements
Wide Temperature Range	Suitable from cryogenics to 2000ºF (1100ºC) depending on core and facing materials
Low Seating Stress	Ideal for light flanges with limited available bolt load, as well as highly loaded flanges
High Recovery	Flexicarb flexible graphite facing is ideal for cyclic conditions
Conformable Surfaces	Soft, conformable surface layers accommodate minor dings, nicks & scratches that are detrimental to other types of gaskets; also less susceptible to inaccurate bolting. Suitable for use on a wide range of surface finishes
Proven Design	Over 70 years of experience in difficult service throughout the world
Firesafe	Flexible graphite and solid metal cores are inherently firesafe
Wide Application	Available for standard and special flanges, in circular and non-circular shapes
Replaces Jacketed Gaskets	Direct replacement for jacketed gaskets in most applications
Cost Effective	Longer life, less maintenance, reduced emissions


HYDROGEN

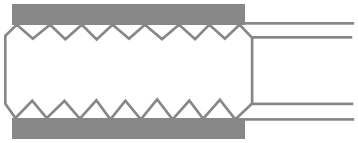
KAMMTEX AERO

EFFECTIVE SEALING SOLUTIONS
FOR INCREASINGLY DEMANDING
APPLICATIONS

Easy to Install

Uniformly Strong

Free from Oxidation



Suitable for Air-Coolers

Why Kammtex Aero Gaskets?

Air-coolers are extensively used in refining as a method for cooling vapor-form fluids. The exchangers traditionally have fluid traveling through horizontal tubes with a current forced by a belt-driven fan at the bottom. The tubes are finned to facilitate greater area, and at the ends, they are attached to chambers. One chamber is fixed, and the other is floating. The visual inspection of the horizontal tubes is carried out by removing the metal plug at one end of the tube. This metal plug uses a deformable washer as a sealing element. Soft iron washers have traditionally been used to seal the plugs of the exchangers. Various problems have been experienced with these washers leading to leaks. Most of the problems are related to the high levels of tension and surfaces finishes so smooth that the application requires to achieve the seal. These high loads damage and elongate the threads both on the plug and its fitting, therefore, making it increasingly difficult to achieve the necessary loads in re-uses. This results in laborious retightening processes during operation, re-machining of the holes, and changing of plugs. To avoid these problems, the use of specifically designed and machined KAMMTEX gaskets for air-cooler plugs was proposed. The proposed gasket is a variant of a "STANDARD" type, consisting of a machined metallic core covered with a conformable material, normally graphite, on each face.

Excellent Compressibility & Recovery Features

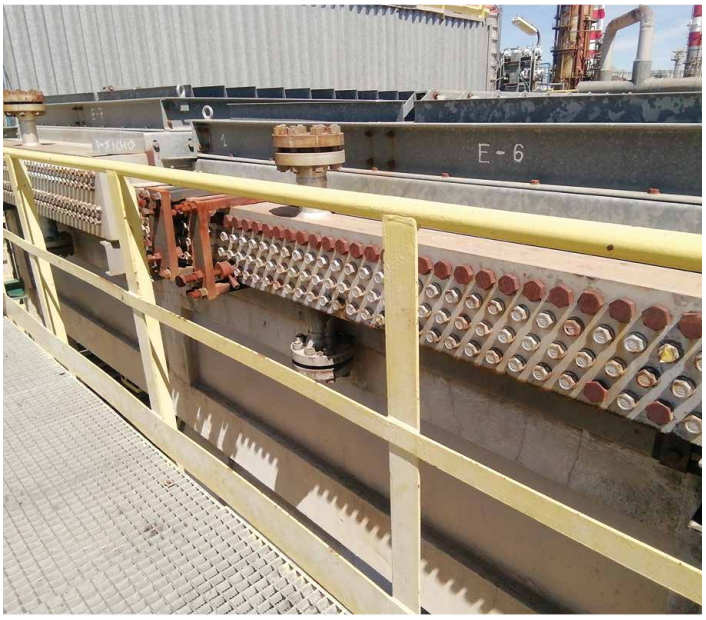
4 MAIN ADVANTAGES

Compressibility
They have the compressibility of a soft cut gasket.

Sealability
The sealability of a spiral wound gasket

Ease to Install
The ease of handling of a metal gasket

Extreme Pressures
They are valid from vacuum to extreme pressures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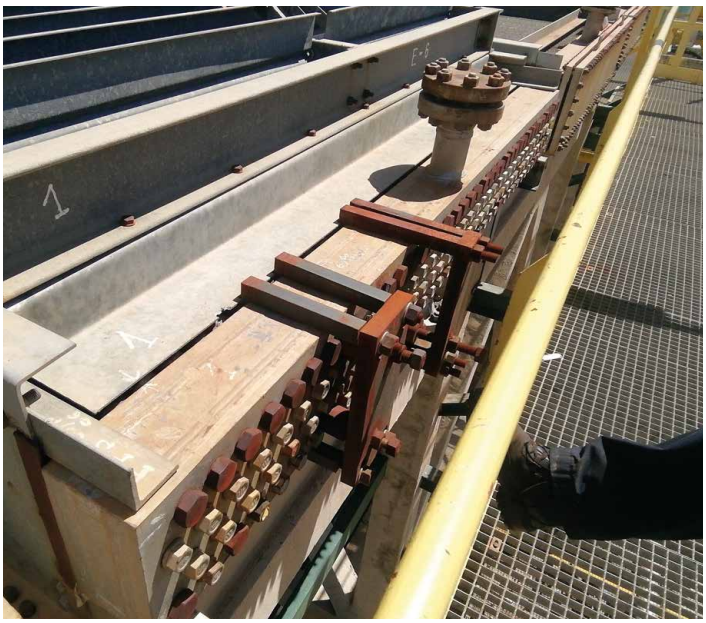
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Technical support

Worldwide technical assistance.
On-line & On-site technical support.

Shipments to any location

Optimized transport service.

Branches

We have more than 7 international branches in USA, Argentina, Brazil, Chile, Spain, Mexico, Denmark, Australia and several local subsidiaries.

From 1988

We are not aware of any other company with more experience in the Wind Power Industry. Our first application was on a 1Mw Wind Turbine prototype all the way back to 1988 at a time that this industry could be considered just a niche market. From that day on, the level of development of special solutions has never stopped.

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