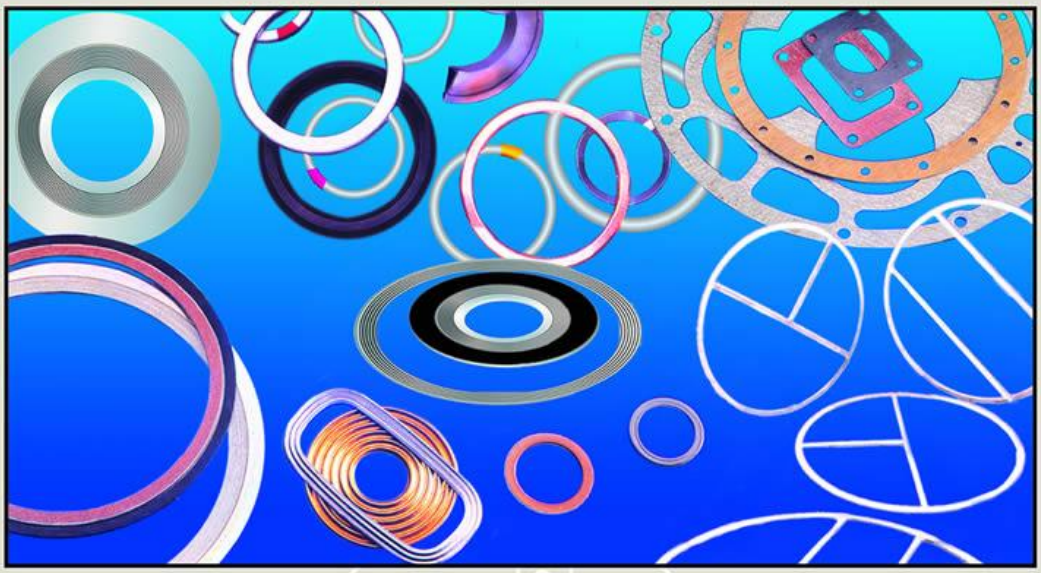
HEM ENGINEERING CORPORATION



INTRODUCTION

HEM ENGINEERING CORPORATION is one of the leading manufacturer and supplier of Metallic and Non-Metallic Gaskets to Petrochemical Plants, Refineries, Fertiliser Plants, Chemical Plants, Power Plants and other Industries.

HEM ENGINEERING CORPORATION is manufacturing and suppling GASKETS for Pressure Vessels, Heat Exchangers, Columns, Pumps, Valves, Boilers etc.

Much of our success at **HEM ENGINEERING CORPORATION** for manufacturing and supply of Metallic and Non-Metallic GASKETS is due to 100% commitment to customers Satisfaction and commitment to Consisting Quality.

OUR GOAL

To insure the FUTURE of **HEM ENGINEERING CORPORATION** and our Employee through Customer Satisfaction by Providing.

- **QUALITY PRODUCT**
- **QUALITY SERVICES**
- **ECONOMIC PRICING**

by operating organization efficiently and profitably.

OUR COMMITMENT

We are committed to.

- Consisting Quality.
- Quality Assurance Exceeding the need of Each Individual Customers.
- On time Performance.
- Communication with Customers for Improving Quality, Improving Delivery and Developing new type of Gaskets.

At **HEM ENGINEERING CORPORATION** Men, Machine & Methods (Systems) are Teamed up to manufacture sealing element; we believe are the best and will provide longer, most dependable service.

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SPIRAL WOUND GASKET [SPIRAL SEAL]

SUPERIOR CONSTRUCTION

SPIRAL SEAL Gaskets are made of Alternate piles of preformed Metal and soft Non-Metallic Filler. The Metal winding of the Spiral Seal is formed in to CHEVRON configuration [> shape] allowing Superior Resiliency and Self Adjustment compare to convential Gaskets, which enables Spiral Seal gasket to adjust automatically to change in operating condition such as,

- **FLUCTUATING PRESSURE & TEMPERATURE.**
- **THERMAL EXPANSION OR CONTRACTION**
- **FREQUENT OR SUDDEN VIBRATION**
- **MINOR FLANGE SEPARATION**
- **JOINT RELAXATION.**

It works in almost all known Corrosive and Toxic condition and environment with suitable combination of winding and filler material.

EASY INSTALLATION

Installation of Spiral Gaskets is very quick and simple. Spiral Seal Gaskets does not require special flange finish and it can be used where flange are mis-aligne or pitted.

CONTROLLED COMPRESSIBILITY

Spiral Seal Gaskets compression depends upon density of Winding which can varied to meet customers specific requirement, by changing the percentage ratio of Metal to Filler winding in the Gaskets width. This insures constant Gaskets Compression Stress and provides zero leak joints.

HEM'S SPIRAL SEAL GASKETS RANGE

We manufacturer complete rang of Spiral Wound Gaskets as per ANSI, DIN, BS-5500 for Standard Flanges. We also design and manufacturer gaskets for special non-standard flanges. We also Manufacturer Spiral Wound Gasket with Pass Partition Rib's for Heat Exchangers.

SPIRAL SEAL GASKETS ARE AVAILABLE IN FOLLOWING THICKNESS

Normal Thickness	Recommended Compressed Thickness
3.2 mm [0.125 inch]	2.3 / 2.5 mm [0.090 / 0.100 inch]
4.5 mm [0.175 inch]	3.2 / 3.4 mm [0.125 / 0.135 inch]
6.4 mm [0.250 inch]	4.6 / 5.1 mm [0.800 / 0.200 inch]

HEM's Spiral Seal Gaskets are available in various styles, each designed to suits particular applications.

Style -W

Basic construction type. Inner and Outer Diameter are reinforced with several piles of Metal winding only to give greater Stability Compression and Sealing Characteristics. Suitable for Tongue and Groove of male and female or groove to flat face flange assemblies.

Spiral Seal Gasket with a solid metal outer ring, which accurately centers gaskets on flange face, provide additional radial strength to prevent gasket blow out and act as compression stop. General Purpose Gasket suitable for use with flat face and raised face flanges.

Style -WOR

Style -WOIR

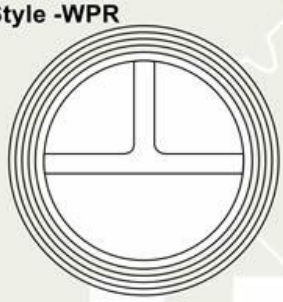
Same as Style - WOR Spiral Seal Gasket fitted with solid metal inner ring in addition to outer ring. The inner ring prevent inward distortion of the gasket element, it also provide Heat and Corrosion barrier, protect Gasket Winding and prevent erosion of flange face. Suitable to use with flat and raised face flanges, Also recommended for High-Pressure, Temperature , Toxic and Corrosive application.

Style -WN

This style is similar to Style - WOR of Spiral Seal Gasket except in this style the outer / centering ring is made up of metal winding only instead of solid metal flat ring. The outer metallic winding is called 'Nose ' of gasket.

It is recommended where application requires outer ring but do not have sufficient space to accommodate it. Nose is made of same material as of spiral and it serve same purpose of solid metal outer / centering ring.

Style -WPR



Spiral Seal Gasket specially designs and manufacturer with pass partition ribs for shell and tube Heat exchanger. This style is any of earlier mention style with similar constructions and RIB are generally made up of double jacketed type or solid metal gasket secularly welded with the I/d of spiral wound portion.

Style - WPR can be provided with Inner Ring and either Outer Ring or Nos as per requirement.

Pass Partition Rib can be provided in varying configuration and size.

MATERIAL OF CONSTRUCTION AVAILABLE OF SPIRAL SEAL GASKETS.

Winding Material	Ring Material	Filler Material
Stainless Steel Type 304	Stainless Steel Type 304	Grafoil
316 L	316 L	Asbestos
Carbon Steel	Carbon Steel	PTFE.
Stainless Steel Type 304 L	Stainless Steel Type 304 L	Glass Filled Teflon
316	316	
316 Ti	316 Ti	
310	310	
321	321	
Monel	Monel	
Nickel	Nickel	
Inconel 600, 625	Inconel 600, 625	
Copper	Copper	

FLANGE FINISH RECOMMENDED.

Spiral Seal Gaskets can be used for General Non Critical Service with any Commercialy produce flange surface finish, However we recommend to 125-200 rms finish for **BEST RESULT.**

NOTE :

Materials for Spiral Winding, Filler and Rings should be selected with respect to Operating Temperature and chemical compatibility.

In case you need any help in selection of material, please send us complete detail, we will select appropriate materials based on our Research and Exeprience.

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METAL JACKETED GASKET.

WHERE METAL JACKETED GASKETS ARE RECOMMENDED

HEM's Metal Jacketed Gaskets are ideally suited for smooth surface applications including heat exchangers Valve Bonnets, Gas Mains, Vacuum Lines, Autoclaves, Boilers and Glass lined Equipments. Use on circular or non-circular application, requiring 20 to 30% compressibility to compensate for flange misalignment, wrapage etc. Metal Jacketed Gaskets are designed for assemblies in which the elasticity of bolts or other factors can compensate for joint relaxation. For joint requiring close maintenance for the compression thickness or which mechanically limit the compression (e.g. Metal to Metal) The Metal Jacket Gaskets are Normally Not Recommended.

HOW METAL JACKETED GASKETS WORKS

Metal Jacketed Gaskets are made of soft compressible non- metallic filler partially or fully enclosed in a Metal Jacket. The inside diameter of Metal Jacketed Gaskets works as primary seal against leakage as the gasket is thicker at edges when compressed and the outer diameter serves the purpose on secondary seal.

HEM'S METAL JACKETED GASKETS RANGE

We manufacturer complete range of Metal Jacketed Gaskets as per ANSI, DIN,BS-5500 for Standard Flanges.

We also design and manufacturer Gaskets for special non- standard flanges and with Pass Partion Rib's for Heat Exchangers.

Single Jacketed Gaskets are designed for moderate pressure and temperature application. The Single Jacketed Gaskets are constructed of soft heat resistant filler material partially enclosed in metal jacket.

SINGAL JACKETED TYPE

DOUBLE JACKETED GASKETS

Type - DJ 1

Double Jacketed Gaskets are most widely used Metal Jacketed Gaskets. The double jacketed gaskets are constructed of soft heat resistant filler material completely covered by two piece metal jacket that covers Inside Dia, Outside Dia and Both contact surfaces, Ideal for high temperature application, for boilers, heat exchangers etc.

Type - DJ 2

Style - DJ2 is similar to style - DJ1 except here with double jacket, the soft filler material is enclosed in double shell too. This style is most suitable for vary high pressure and temperature application.

The double- jacketed corrugated gasket is an improvement on a plain jacketed gasket in that the corrugations on the gasket will provide an additional labyrinth seal. It also provides the advantage of reducing the contact area of the gasket, enhancing its compressive characteristics. A double- jacketed corrugated gasket still relies on the primary seal on the inner lap.

DOUBLE JACKETED CORRUGATED GASKETS

SOLID RING JOINT GASKET

API RING GASKETS :

OVAL

OCTAGONAL

API ring joint gaskets come in two basic types, an oval cross section and an octagonal cross section. These basic shapes are used in pressure up to 10,000 psi. The octagonal cross section has a higher sealing efficiency than the oval and would be the preferred gasket. The sealing surfaces on the ring joint grooves must be smoothly finished to 63 microinches and be free of objectionable ridges, tool or machining marks. They seal by an initial line contact or a wedging action as the compressive forces are applied. The hardness of the ring should always be less then the hardness of the flanges. Dimensions for API ring joint gaskets and grooves are covered in ANSI B16. 20 and API 6A.

We have a wide range of sizes and materials ready for immediate Dispatch from R11 to R70.

BX RINGS

RX RINGS

The BX ring gaskets differs from the standard oval or octagonal shape in that it is square in cross section and tapers in each corner. They can only be used in API 6BX flanges. RX ring gaskets are similar in shape to the standard octagonal ring joint gasket but their cross section is designed to take advantage of the contained fluid pressure in effecting a seal. They are both made to API 6A and interchangeble with standard octagonal rings for oil field drilling and production applications in API 6B flanges. RX and BX gaskets are used at pressure up to 15,000 psi.

LENS TYPE GASKET

A lens type gasket is a line contact seal for use in high pressure piping systems and in pressure vessel heads. The lens cross section is a spherical gasket surface and requires special machining on the flanges. These gaskets will seat with a small bolt load since the contact area is very small and gasket seating pressure are very high. In ordering lens gaskets, complete drawings and material specifications must be supplied.

DELTA GASKET

A delta gasket is a pressure actuated gasket used primarily on pressure vessels and valve bonnets at very high pressure in excess of 5000 psi. As with the lens gasket, complete drawings and material specifications must be supplied. Internal pressure forces the gasket material to expand when the pressure forces tend to separate the flanges. Extremely smooth surface finishes of 63 microinches or smoother are required when using this type of gasket.

API RING JOINT GASKETS MATERIALS

Material	Designetion	Maximum Hardness Rockwell B	Maximum Hardness Brinell
Soft Iron	D	56	90
Low Carbon Steel	S	68	120
4-6 Chrome	F-5	72	130
304 Stainless Steel	S304	83	160
316 Stainless Steel	S316	83	160
347 Stainless Steel	S347	83	160
410 Stainless Steel	S410	86	170

HEM ENGINEERING CORPORATION

SOLID METAL GASKETS

PLAIN FLAT METAL GASKETS

Flat metal gaskets are best suited for applications such as valve bonnets, ammonia fittings, heat exchangers, hydraulic presses, tongue-and-groove joints. They can be used when compressibility is not required to compensate for flange surface finish, warpage or misalignment and where sufficient clamping force is available to seat the particular metal selected. The hardness of gasket metal must be less than the hardness of the gasket seating surface of the flange. Flat metal gaskets are relatively inexpensive to produce and can be made of virtually any material that is available in sheet form.

METAL PROFILE GASKETS

Profile type gaskets offer the desirable qualities of plain washer types and the added advantage of a reduced contact area provided by the V-shaped surface. It is used when a solid metal gasket is required because of pressure or temperature or because of the highly corrosive effect of the fluid to be contained and also when bolting is not sufficient to seat a flat washer. Standard thickness is 1/8" minimum thickness is 1/16".

NON - METALLIC GASKETS

NON - METALLIC GASKETS

HEM offers a wide range of Non-Metallic gaskets fabricated only from branded material. This will identify the quality and grade and is your assurance of receiving material with uniform specifications at all times. Asbestos, Teflon, and a variety of rubber and synthetic compositions are available in a wide range of thicknesses and grades. We also manufacturer of Teflon Envelope Gaskets and Gaskets for Non-standard size as per your drawing & specification.

HEM'S HEAT EXCHANGER GASKETS STANDARD SHAPE INDEX