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**MORE THAN JUST A SUPPLIER**

## **GASKET CATALOGUE**

**Spiral Wound  
Camprofile  
Ring Type Joint  
Flange Insulation  
Non-Metallic**



Gasket Catalogue

201

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# SPIRAL WOUND GASKETS



Spiral wound gaskets have proven to be the most reliable sealing element for use in difficult, critical and arduous duties. Spiral wound gaskets are used in Refinery, Petrochemical, Chemical, Steam lines and Process Industries, where they have many advantages over older types of gaskets.

These gaskets are manufactured to International specifications such as BS, API, ASME, DIN. We also manufacture to customer's specifications

## Available in several standard shapes

SWR	Spiral Wound Metallic Gasket without centering ring
SCD	Spiral Wound Metallic Gasket with centering device
SOR	Spiral Wound Metallic Gasket with centering ring. (Centering ring made of carbon steel stainless steel and other metals)
SIO	Spiral Wound Metallic Gasket with inner & outer rings. (Rings are made of carbon steel stainless steel and other metals)
SIOH	Spiral Wound Metallic Gasket with outer ring supplied with bolt holes and inner rings
SIR	Spiral Wound Metallic Gasket with inner rings. (Rings generally of stainless steel)

**Spiral Wound Metallic Gasket 'W' type and Spiral Wound Metallic Gasket 'Inverted W' type are also available.**

## FLANGE STANDARDS

ASME/ANSIB16.5	MSS SP44 (ASME B16.47 SERIES A) (AWWA)
BS 1560, BS10, BS4504	DIN FLANGES, JIS FLANGES
API 605 (ASME B16.47 SERIES B)	FRENCH NF STANDARD

## COMMON FILLERS USED

FILLERS MATERIALS	MAX. WORKING TEMPERATURE
Graphite Mica	350 F (Temperature)
Graphite 99.8% purity	1200 C
Non asbestos	550 C
PTFE	250 C
Ceramic	1000 C

## INNER AND OUTER RING

**Carbon Steel, Stainless Steel 304,304L, 316,316L,316Ti,321,347, MONEL® 400,Inconel® 600,625,800, Incoloy® 800, 825, Nickel 200, Titanium, Hastelloy, Copper.**

## SPIRAL WOUND GASKET SIZES

Size & Shape as per Prevailing International standards or Customer needs can be produced.

# CAMPROFILE GASKETS

Camprofile gaskets consist of a metal core (generally Stainless Steel) with concentric grooves on either side with sealing materials. The sealing layers (depending on the service duty) can be Graphite, PTFE (Teflon), CAF or Metal (e.g Aluminum or Silver). Camprofile's can be used without sealing layers to provide an excellent seal but there is a risk of flange surface damage.

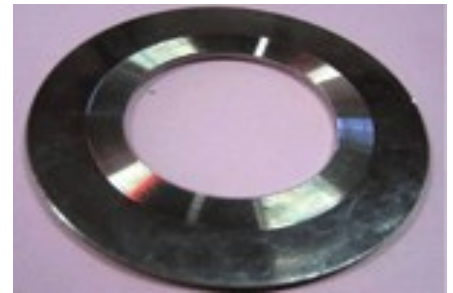
The very wide seating stress range (minimum to maximum stress) of the camprofile gasket makes it

- ⇒ Highly suitable for varying temperatures and pressures.
- ⇒ Less sensitive to assembly faults (inaccurate bolt tensioning).
- ⇒ Suitable for light and heavily constructed flanges.
- ⇒ Dependent on layer material camprofile gaskets are resistant to temperatures up to 1000 C.
- ⇒ Resistant to media pressures up to 250 bar.



## The additional benefits are :

- ⇒ When assembled the layer thickness of the sealing material is extremely small (0.5mm) thus reducing leaks, reject rates and environment pollution.
- ⇒ The gasket will not damage the flange surface and can be easily removed.
- ⇒ Reduces maintenance costs.
- ⇒ Emergency sealing of damaged flanges by using 1mm thick sealing layers until the flange can be reworked.
- ⇒ Flange face protection Camprofiles will not damage the flange faces even at extreme seating load.
- ⇒ Excellent performance when subject to fluctuating temperatures and pressures.
- ⇒ Direct replacement for existing gaskets. No special flange finish is necessary.
- ⇒ Eco-friendly by significantly reducing leakage into the atmosphere.



Flange surface Finish

Loose or Integral rings

Thermal-shock conditions may damage camprofiles with integral centring rings (thermal tension may cause cracks in the core).



## SEALING LAYER MATERIALS AND SEALING STRESSES

The following table gives information regarding different types of materials offered as sealing layer materials by us. Also given is recommended seating stress range for reliable and effective performance:

Material	Temp (Deg.C)		Max. Operating Pressure (Bar)	Gas Tightness	Application	Seating Stress		
	Min	Max				Min (N/mm <sup>2</sup> )	Optimum (N/mm <sup>2</sup> )	Max (N/mm <sup>2</sup> )
Graphite	-200	550	250	Good	Aggressive Media	20	90	400
PTFE	-200	250	100	Good	Aggressive Media	20	90	400
CAF	-150	450	100	Moderate	Liquids	65	161	400
Silver	-200	750	250	Good	Aggressive Media	125	240	450

## CORE THICKNESS

When a Camprofile is replacing an existing gasket (eg. spiral wound gasket); recommends a 4mm thick core to prevent unnecessary stresses on existing pipe lines. For new system, we recommend 5 mm thick cores. The value should be taken into account at the design stage.

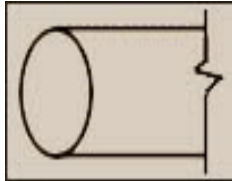
Pipe system	Core thicknes	Seated Thickness (Core + 2 sealing layers)
Existing	4mm	5.0mm to 5.2mm
New	5mm	6.0mm to 6.2mm

# RING TYPE JOINT GASKETS

Ring type Joint Gaskets are designed to seal by "initial line contact" or wedging action between the mating flange and the gasket. By applying pressure on the seal interface through bolt force, the softer metal of the gasket flows into the imperfections of the harder flange material, creating a very tight and efficient seal.

## STANDARD RING JOINTS

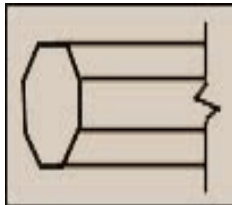
### Style R (Oval Octagonal )



The contact face is in oval shape. It provides a high reliability seal. These gaskets are manufactured in accordance to API 6A of ASME B16.20 to suit API613 and ASME/ANSI B16.5 Flanges. Fits the round and flat bottom ring groove flange.



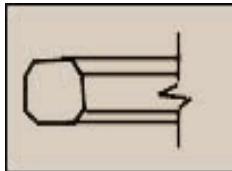
### Style R ( Octagonal )



More accurate in dimensions and surface finish than oval type because it consists of straight surfaces only. A higher torque load is required to flow the gasket material into imperfections of the flange facings. These gaskets comply with API6A of ASME B-16.20. to suit API 6B and ASME/ANSI B16.5 Flanges Fits only the modern flat bottom groove flange.



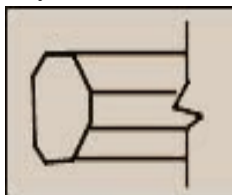
### Style BX



The BX type RTJ gaskets are manufactured in accordance with API 6A and are suitable for use in high pressure API 6BX flanges. The gaskets form a metal to metal seal on assembly and the efficiency improves as internal pressure increases. All BX sizes have a pressure relief hole to equalize pressure across sealing faces.



### Style RX



The RX type RTJ gasket is manufactured in accordance to API 6A and ASME B16.20 to suit API 6B and ASME/ANSI B16.5 flanges. The RX is a pressure energized version of the R octagonal gasket and fits the R type flat bottomed groove. The RX has an increased height and utilizes the internal system pressure to energize and improve the seal as internal pressure increases. Some RX sizes have a pressure relief hole to equalize pressure on both sides of the sealing faces.



## SPECIAL RING JOINTS

### Style IX

The IX-rings are designed and used where the NORSOK CFC (Compact Flange Connections) are in use. The rings come in three different kinds of steel and are coated with PTFE in varying colours in order to distinguish between them.

All markings should be on the inside of the ring.



## Style AX

Ring type joints AX are used in H4 hydraulic connections-sub sea production equipments such as BOP or underwater christmas tree.

CARBON STEEL, SOFT IRON		MONEL® 400	HASTELLOY B2 & C276
304	316Ti	NICKEL 200	COPPER
304L	310	INCONEL® 600,625&x-750	ZIRCONIUM
316	321	INCOLOY® 800 & 825	DUPLEX
316L	3CR12	TITANIUM	PTFE(INNER RINGS ONLY)

## We stock and supply Ring type joint gaskets of all sizes and

### FLANGE STANDARDS

Ring joint gasket can be manufactured in accordance with all relevant gasket standards and specifications to suit the following flange designations:

API	605 (ASME B16.47 SERIES B)
ASME/ANSI	B16.5
BS	1560
BS	4504
BS	10
DIN	DIN FLANGES
FRENCH	NF STANDARD
JIS	FLANGES
MSS SP	44 (ASME B16.47 SERIES A)

FLANGE MATERIAL	SERVICE TEMPERATURE	RING MATERIAL	COLOUR
Carbon steel	-50 C to +250 C	Carbon steel CS360LT or low alloy steels,e.g. AISI 4140	Blue
Stainless steel	-50 C to +250 C	22Cr Duplex	Yellow
Stainless steel	-50 C to +250 C	17/4-PH	Orange
Stainless steel	-101 C to +250 C	Nickel alloys such as Alloy 625 or similar	Black

ASME / ANSI B 16.5							API 6A					
ASME/ANSI	ISO	150	300/600	900	1500	2500	2000	3000	5000	10000	15000	20000
1/2"	15		R-11	R-12	R-12	R-13						
3/4"	20		R-13	R-14	R-14	R-16						
1"	25	R-15	R-16	R-16	R-16	R-18			R-82			
1-1/4"	32	R-17	R-18	R-18	R-18	R-21						
1-3/8"									RX-201			
1-1/2"	40	R-19	R-20	R-20	R-20	R-23	RX20	RX-20	RX-20 R-84			
1-11/16"										BX-150	BX-150	
1-13/16"									RX-205	BX-151	BX-151	BX-151
2"	50	R-22	R-23	R-24	R-24	R-26			R-24 R-85			
2-1/16"							R-23 R-24 RX23	R-24 RX-26	RX-24	BX-152	BX-152	BX-152
2-1/2"	65	R-25	R-26	R-27	R-27	R-28			R-86			
2-9/16"							R-26 RX-26	R-26 R-27 RX-27	R-27 RX-27 RX-210	BX-153	BX-153	BX-153
3"	80	R-29	R-30/31	R-31	R-35	R-32			RX-35			
3-1/16"										BX-154	BX-154	BX-154
3-1/8"							RX-31	RX-31	R-35 RX-25 RX-35			
3-1/2"	90	R-33	R-34						R-89			
4"	100	R-36	R-37	R-37	R-39	R-38			R-88			
4-1/16"							R-37 RX-37	R-37 RX-37	R-39 RX-39 RX-215	BX-155	BX-155	BX-155
5"	125	R-40	R-41	R-41	R-44	R-42			R-90			
5-1/8"							RX-41	RX-41	RX-44	BX-169		
6"	150	R-43	R-45	R-45	R-46	R-47						
6-5/8"										BX-170	BX-170	
7-1/16"							R-45 RX-45	R-45 RX-45	R-46 RX-46	BX-156	BX-156	BX-156
8"	200	R-48	R-49	R-49	R-50	R-51	R-99	R-99				
8-9/16"										BX-171	BX-171	
9"							R-49 RX-49	R-49 RX-49	R-50 RX-50	BX-157	BX-157	BX-157
10"	250	R-52	R-53	R-53	R-54	R-55			R-91			
11"							R-53 RX-53	R-53 RX-53	R-54 RX-54	BX-158	BX-158	BX-158
11-5/32"										BX-172	BX-172	
12"	300	R-56	R-57	R-57	R-58	R-60						
13-5/8"							R-56 R-57 RX-57	R-56 R-57 RX-57	BX-160	BX-159	BX-159	BX-159
14"	350	R-59	R-61	R-62	R-63							
16"	400	R-64	R-65	R-66	R-67			R-66				
16-3/4"							RX-65	RX-66	BX-161 BX-162	BX-162	BX-162	
18"	450	R-68	R-69	70	R-71		RX-69	R-70 RX-70				
18-3/4"									BX-163	BX-164	BX-164	
20"	500	R-72	R-73	R-74	R-75							
20-3/4"								R-74 RX-74				
21-1/4"							RX-73		BX-165	BX-166		
21-3/4"							R-73					
ASME 16.47 Series A												
22"	550	R-80	R-81									
ASME/ANSI B 16.5												
24"			R-77	R-78	R-79							
ASME B16.47 Series A/B												
26"	650	R-76	R-93	R-100								
26-3/4"							BX-167	BX-168				
28"	700		R-94	R-101								
30"	750		R-95	R-102			BX-303	BX-303				
32"	800		R-96	R-103								
34"	850		R-97	R-104								
36"	900		R-98	R-105								

# Flange Insulation Gasket Kit

Flange Insulation Kits are the most widely used form of controlling losses due to corrosion.

They can be used to control stray electric currents in piping at oil, gas, water, refinery, and chemical plants, to increase the effectiveness of cathodic protection systems and confine or eliminate electrolytic corrosion.

## Gasket Type:

**TYPE E** - Type E gaskets are for full face protection of both flange faces

**TYPE F** - Type F are to fit the raised face surface area of the flanges.

**TYPE D** - Type D are made to fit the ring grooves on ring type joint



## How to Order

### Specify The Following:

- Specify Flange Size and Pressure Rating
- Specify Gasket Type: D, E, or F.
- Specify Gasket Sealing Element, Sleeve and Washer Material.

## Recommended Installation Procedure:

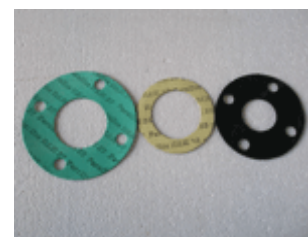
- ⇒ Verify that the installation kits contain the material specified and the contents are not damaged.
- ⇒ Clean and inspect pipe flange faces and apply lubricant to all threads. Install the gasket and align the flanges so the bolt holes will be centered.
- ⇒ Use alignment pins in two diametrically opposite bolt holes whenever possible to assure proper alignment of flanges and gasket.
- ⇒ Insert insulating sleeves into the bolt holes taking care not to use force which could damage the sleeve material.
- ⇒ Insert the bolt with both insulating washers against the flanges followed by the steel washer and nut.
- ⇒ Tighten two diametrically opposite bolts to 30% to total torque.
- ⇒ Replace the two alignment pins with bolts and tighten the remaining bolts to 30% of the total torque value.
- ⇒ Tighten all bolts to 50%, then to 100% of final torque value.
- ⇒ Bolts should be of sufficient length to extend through the nut approximately 1/4".



# NON-METALLIC GASKETS

We Supply A-Brand Non metallic gaskets to ASME, JIS, BS, DIN & other international standards. We specialize in meeting the unique needs of customers. Commonly used materials are:

- ⇒ Natural and Synthetic rubber
- ⇒ PTFE
- ⇒ Compressed Asbestos
- ⇒ Fibre cork
- ⇒ Woven Asbestos
- ⇒ Graphite
- ⇒ Non asbestos Aramid fibre



## FERRULE GASKETS

These are non metallic gaskets with an inner protection to prevent direct contact with the fluid handled. The material used for the gasket is like any other non metallic gasket. The inner protection is provided with SS Ferrule.

## RUBBER OR ELASTOMERIC GASKETS

We can Supply all types of Elastomeric Gaskets made of Natural Rubber, Neoprene, Nitrile, EPDM, Butyl, Polybutadiene, Silicon, Fluoro-carbon, Chlorosulphonated Polyethylene, Styrene Butadiene Rubber etc.

### These rubber gaskets could be supplied

- ⇒ In colors like black & white or red
- ⇒ With or without Fabric or Metal reinforcements. Reinforcements are provided with the help of wire mesh or metal or natural or synthetic fabrics depending on the specifications and thickness suitable to service conditions. They are suitably molded to all flange dimensions as full face, flat face and blind gaskets.

## RUBBER MATERIAL PROPERTIES

Material	Temperature Range	High Resistance
Natural Rubber (NR)	60 C	Water, air and average concentration acids, bases and salts. Good abrasion resistance.
Neoprene (CR)	80 C	Moderate acids and chemicals, Ozone, Oils, fats and Solvents. Used in Oily abrasive applications.
Nitrile (NBR)	110 C	Most Hydrocarbons ,Fats, Oils, Greases, Hydraulic fluids, Chemicals and solvents.
EPDM	120 C	Vegetable and animal fats, oils, ozone, many strong oxidizing chemicals, ketones and alcohols.
Butyl (IIR)	120 C	Animal and vegetable oils, fats, greases, air, gas, water, many oxidising chemicals and ozone.
Hypalon (CSM)	120 C	Strong acids and bases, Freons hydroxides, ozone, Alcohols, etching, Alkaline and Hypochlorite solutions
Viton (FKM)	200 C	Aromatic Aliphatic and halogenated hydrocarbons, acids, animals and vegetable Oils
Silicon	150 C	Moderate or Oxidising chemicals, ozone, concentrated Sodium Hydroxide
Styrene Butadiene Rubber (SBR)	60 C	Water, Air, Anti-Freeze detergents, Salt solutions ,Bases, Alcohols and some acids.