SPIRAL WOUND GASKETS

Properties And Application

Spiral wound gaskets are special semi-metallic gaskets of great resilience, there fore they are very suitable for applications featuring heavy operating conditions. Spiral wound gaskets are manufactured by spirally winding a V-shaped metal strip and a strip of non-metallic filler material. The metal strip holds the filler, providing the gasket with mechanical resistance and resilience. Spiral wound gaskets can be reinforced by an outer centering ring and/or inner retaining ring. The outer centering ring controls the compression and holds the gasket centrally within the bolt circle. The inner retaining ring increases the axial rigidity and resilience of the gasket. Spiral wound gaskets should always be in contact with the flange and should not protrude into the pipe or project from the flange. Spiral wound gaskets can be used for sealing flange joints, manhole and handhold covers, tube covers, boilers, heat exchangers, pressure vessels, pumps, compressors and valves; in industries such as petrochemical, pharmaceutical, shipbuilding, and food processing, in power industries and nuclear power stations. They are ideal for steam, oil, liquids, gases, acids, alkalines, various organic mediums and solvents.

ADVANTAGES

- Sealing under heavy operating conditions.
-Strong stress compensation, stable and reliable sealing performance even under frequent pressure fluctuation condition.
-Solid construction provides stability and seallability even when the sealing surfaces
are slightly corroded or bent. - Easy installation.

SHAPE AND CONSTRUCTION

Spiral wound gaskets are produced in several styles and combination of materials to fit the most stringent application. Spiral wound gaskets are usually of circular shape, however we can produce them in other shapes such as: oval, rectangular, with round corners, etc. Our standard production program comprises a range of spiral wound gaskets with inner diameters of 10 mm to 3000 mm and a nominal thickness of 3.2 mm, 4.5 mm and 6.5 mm. Spiral wound gaskets of non-standard dimensions and shapes, and larger diameters are available on request.

Gasket standard styles:

- Gaskets without guide and inner ring - Type S
- Gaskets with inner ring – ASP-CI
- Gaskets with guide (outer) – ASP-CG
- Gaskets with guide and with inner – ASP-CGI

* With PTFE sealing zone change number

Metallic strip

Standard thickness of the metallic strip is 0.2 mm (0.18).
MATERIALS FOR METALLIC STRIP
ASIM DIN Matenal No.
AISI 304 1.4301
AIS! 316, 316 L 1.4401, 1.4404
AISI 321 1.4541
AISI3I6Ti 1.4571
Monel (NiCu30Fe) 2.4360
Other alloys available on request.

Filler

Filler is normally used for thicknesses from 0.5 mm to 0.6 mm.
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Flexible graphite 98%
- Flexible graphite 99.85% - PTFE, EPTFE
- Ceramic, Micalit Centering ring
The centering ring does not come into direct contactwith contained fluid. It is normally made of carbon steel and electra plated or painted to avoid corrosion. Other materials are available on request.
Inner ring
Inner ring is used to avoid excessive compression due to high seating stress in high-pressure service and if is also used to reduce turbulence in the flange area. It is normally made of the some material as the gasket metallic strip.

DIMENSIONS

Manufacturing sizes
This limitations are general and can vary according to the special customer requirements.

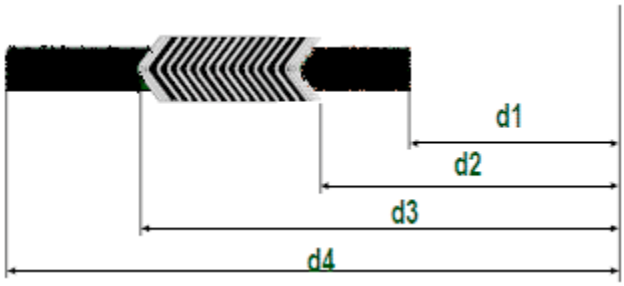
Thickness	Max Diameter D3 [mm]	Maximum width winding MM	Maximum width Winding MM
		Graphite	PTFE
2.5	300	16	13
3.2	700	22	19
4.5	1500	30	24
6.5	3000	35	24
7.2	3000	30	24

Thickness

The standard manufacturing thicknesses for spiral wound gaskets are: 3.2 mm; 4.5 mm; 6.5 mm (measured across metallic strip not including the filler, which protrudes 0.2-0.3mm beyond the metal).
Manufacturing tolerances
The tolerance of the gasket diameters (dl d2, d3, d4, s, sl) are stipulated by ASME B 16.20 and EN 1514-2 standards. The gaskets designed for non-standard flanges meet the recommendations by the ASME B 16.20.

Dimensions

The dimensions of the standard SWG meet the ASME, BS and EN (DIN) standards.



d1 – Inside Diameter of Inner Ring
d2 – Inside Diameter of Sealing Element
d3 – Outside Diameter of Sealing Element
d4 – Outside Diameter of Outer Ring

SWG for BS 1560 and ASME B 16.5 flanges

Dimensions for (ASME B 16.20) Spiral-Wound Gaskets used with ASME/ANSI B 16.5 Flanges

Flange Size (NPS)	Outside Diameter of Gasket: Classes 150, 300, 400, 600	Outside Diameter of Gasket: Classes 900, 1500, 2500	Inside Diameter of Gasket By Class: 150	300	400	600	900	1500	2500	Outside Diameter of Outer Ring by Class: 150	300	400	600	900	1500	2500
1/2	1.25	1.25	.75	.75	(2)	.75	(2)	.75	.75	1.88	2.13	(2)	2.13	(2)	2.50	2.75
3/4	1.56	1.56	1.00	1.00	(2)	1.00	(2)	1.00	1.00	2.25	2.63	(2)	2.63	(2)	2.75	3.00
1	1.88	1.88	1.25	1.25	(2)	1.25	(2)	1.25	1.25	2.63	2.88	(2)	2.88	(2)	3.13	3.38
1 1/4	2.38	2.38	1.88	1.88	(2)	1.88	(2)	1.56	1.56	3.00	3.25	(2)	3.25	(2)	3.50	4.13
1 1/2	2.75	2.75	2.13	2.13	(2)	2.13	(2)	1.88	1.88	3.38	3.75	(2)	3.75	(2)	3.88	4.63
2	3.38	3.38	2.75	2.75	(2)	2.75	(2)	2.31	2.31	4.13	4.38	(2)	4.38	(2)	5.63	5.75
2 1/2	3.88	3.88	3.25	3.25	(2)	3.25	(2)	2.75	2.75	4.88	5.13	(2)	5.13	(2)	6.50	6.63
3	4.75	4.75	4.00	4.00	(2)	4.00	3.75	3.63	3.63	5.38	5.88	(2)	5.88	6.63	6.88	7.75
4	5.88	5.88	5.00	5.00	4.75	4.75	4.75	4.63	4.63 (1)	6.88	7.13	7.00	7.63	8.13	8.25	9.25
5	7.00	7.00	6.13	6.13	5.81	5.81	5.81	5.63	5.63 (1)	7.75	8.50	8.38	9.50	9.75	10.00	11.00
6	8.25	8.25	7.19	7.19	6.88	6.88	6.88	6.75	6.75 (1)	8.75	9.88	9.75	10.50	11.38	11.13	12.50
8	10.38	10.13	9.19	9.19	8.88	8.88	8.75	8.50	8.50 (1)	11.00	12.13	12.00	12.63	14.13	13.88	15.25
10	12.50	12.25	11.31	11.31	10.81	10.81	10.88	10.50	10.63 (1)	13.38	14.25	14.13	15.75	17.13	17.13	18.75
12	14.75	14.50	13.38	13.38	12.88	12.88	12.75	12.75 (1)	12.50 (1)	16.13	16.63	16.50	18.00	19.63	20.50	21.63
14	16.00	15.75	14.63	14.63	14.25	14.25	14.00	14.25 (1)	(2)	17.75	19.13	19.00	19.38	20.50	22.75	(2)
16	18.25	18.00	16.63	16.63	16.25	16.25	16.25	16.00 (1)	(2)	20.25	21.25	21.13	22.25	22.63	25.25	(2)
18	20.75	20.50	18.69	18.69	18.50	18.50	18.25	18.25 (1)	(2)	21.63	23.50	23.38	24.13	25.13	27.75	(2)
20	22.75	22.50	20.69	20.69	20.50	20.50	20.50	20.25 (1)	(2)	23.88	25.75	25.50	26.88	27.50	29.75	(2)
24	27.00	26.75	24.75	24.75	24.75	24.75	24.75 (1)	24.25 (1)	(2)	28.25	30.50	30.25	31.13	33.00	35.50	(2)

Notes: (1)Inner rings are required for all PTFE filled gaskets and for Class 900 gaskets, NPS 24; Class 1500 gaskets, NPS 12 through NPS 24; and Class 2500 gaskets, NPS 4 through NPS 12. (2)There are no Class 400 flanges in NPS 1/2 through NPS 3 (use Class 600), Class 900 flanges in NPS 1/2 through NPS 2 1/2 (use Class 1500), or Class 2500 flanges NPS 14 and larger.

All standard and non-standard types can be delivered in non-standard dimensions according to customer request.

EN 1092 and ASME B 16.5 TONGUE and GROOVE flanges meet SWG dimensions according to ASME B 16.21 or other costumer request.
Insert Picture Here
EN 1092 and ASME B 16.5 MALE and FEMALE flanges meet SWG dimensions according to ASME B 16.21 or other costumer request.

NON-STANDARD SWG

Gaskets for Boilers Handholes and Manholes:
Gaskets can be manufactured in other shapes like oval and oblong (stadium). There is no specific standard for this type of gasket. When ordering it providing complete specifications is required: inside dimensions (AxB), width (b) and thickness (s) or a drawing.

GASKET ORDERING EXAMPLE

Spiral wound gasket MS 10,
AxBxbxs,
Winding: AISI 316,
Filler: Graphite 98%

Phone: (714) 361 1435 Fax: (714) 593-9701
sales@aspseal.com **www.aspseal.com**

Spiral wound gasket MS 16,
ASME B 16.20 for ASME B16.5, 2"-150lbs, Winding, inner ring: AISI 316,
Filler: Graphite 98%,
Centering ring: CS
Oval shape
Dim.:AxBxbxs (mm)
Oblong (stadion) shape
Dim :AxBxbxs (mm)

DN (mm)	NPS (in)
15	½
20	¾
25	1
32	11/4
40	11/2
50	2
65	2 ½
80	3
90	3 ½
100	4
125	5
150	6
200	8
250	10
300	12
350	14
400	16
450	18
500	20
550	22
600	24

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