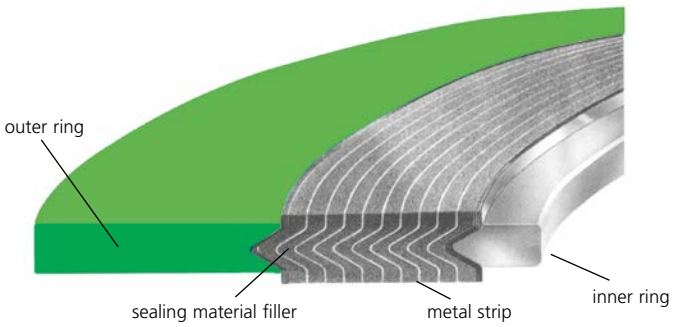
METALLIC / SEMI METALLIC

SPIRAL WOUND GASKETS OF SPIRATEM

General characteristics

The sealing element of the spiral wound gasket consists of a v-shaped metal strip spirallywound in combination with a soft sealing material filler. The metal strip provides outstanding resilience, while the flexible sealing filler guarantees excellent sealing. Due to the combination of materials the spiral wound gasket is suitable for sealing under severally fluctuating tempe-rature and pressure conditions. Depending on the application the spiral wound gasket can be specified with outer and/or inner rings.



- spiral wound gaskets are suitable for use across a wide pressure range, and therefore is general - purpose gasket universally applicable
- spiral wound gaskets can be used to seal fluid pressure up to 250 bar and cryogenic temperature as low as -200 °C and high temperature up to +550 °C / +1100 °C (on special request)
- due to its sturdy design the spiral wound gasket is simple to install without causing damage (although extra care should be taken during transportation and installation of large diameter gaskets without guide rings)
- outer guide rings serves to seat the spiral element centrally onto flange faces and prevent blow-out
- thanks to the combination of different winding materials and metals, gaskets can be tailor made to a wide variety of operating conditions
- due to its non-adhesive character the gasket is easy to remove after service
- gaskets does not cause any damage to the flange faces

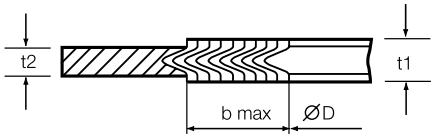
Standard sizes

Raised face, male-female, tongue-groove, oval and non-standard

- EN 1514-2 (1997)
- ASME/ANSI B 16.5 for flanges, 150 to 2500 lbs - 1/2" až 24", acc. to gasket standard ASME B 16.20 (1993)
- ASME B 16.47 serie A (MSS SP-44) for flanges, 150 to 900 lbs - 26" to 60" acc. to gasket standard ASME B 16.20 (1998)
- ASME B 16.47 serie B (API 605) for flanges, 150 to 900 lbs - 26" to 60" acc. gasket standard ASME B 16.20 (1998)
- BS 1560 ASME/ANSI B 16.5 for flanges, 150 to 2500 lbs - 1/2" to 24" acc. gasket standard BS 3381
- flanges acc. to DIN - for all types
- non-standard acc. to specifications like ÖMV, MIDER, GOST, upon request

Selection of gasket thickness

Sealing element t1 [mm]	Tolerance [mm]	D [mm]	b max [mm]	t2 [mm]	Recommended thickness after fitting [mm]
7,2	+0,35	100 – 2800	33	5	5,3 – 5,6
6,4	+0,3	100 – 1600 1601–3200	30 25	4	4,7 – 4,9
4,8 standard	+0,25	15 – 630 631 – 1600 1601 – 2000	35 30 20	3	3,2 – 3,4
3,5 3,2	+0,25 +0,25	15 – 1000 15 – 600	25 20	2	2,3 – 2,5
2,5	+0,25	15 – 500	10	1,5	1,8 – 2,0



t1 - sealing element thickness
t2 - outer ring thickness
D - inner diameter of sealing element
b max - sealing element width

Please contact our technical team in case of any doubt as regards sealing element thickness.

Standard metal materials

Material	CSN specification	DIN specification	DIN material No.	AISI/ASTM	B.S.	Temperature [°C] Min.	Max.
carbon steel	11 375	RSt. 37.2 CS	1.0038	238-C	40B	-40	+500
stainless steel	17 240	X5CrNi 18	1.4301	304	304S15/16/31	-250	+550
stainless steel	17 247	X10CrNiTi 189	1.4541	321	321S12/49/87	-250	+550
stainless steel	17 249	X2CrNi 189	1.4306	304L	304S11	-250	+550
stainless steel	17 251	X15CrNiSi 2012	1.4828	309	309S24	-100	+1000
stainless steel	17 346	X5CrNiMo 1810	1.4401	316	316S31/33	-100	+550
stainless steel	17 348	X10CrNiMoTi 1810	1.4571	316Ti	320S31	-100	+550
stainless steel	17 349	X2CrNiMo 1810	1.4404	316L	316S11/13	-100	+550

Standard fillers

Material	Temperature [°C] Min.	Max.	pH	Application	Colour coding
Graphite	-200	+550	0 – 14	agressive medium	grey
PTFE	-200	+250	0 – 14	agressive medium	white
Ceramic	-200	+1100	-	very high temperatures	light green
Mica	-200	+1000	-	high temperatures	pink

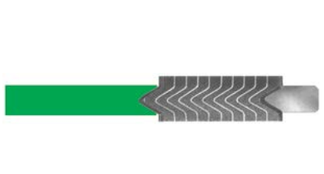
Seating stress range „Q“

Sealing element	Single-side enclosed „Q“(N/mm²) seating stress +20°C Min.	Recommended	Max.	Double-side enclosed „Q“(N/mm²) seating stress +20°C Min.	Recommended	Max.
Graphite	50	90	180	50	122	300
PTFE	50	80	130	50	110	250
Ceramic	60	90	150	70	120	300

Standard gasket profiles

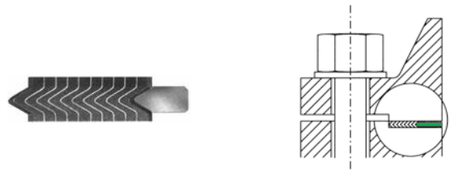
SPIRATEM 123

Spiral wound gasket consist of sealing element with outer and inner rings - complete gasket.



SPIRATEM 23

Identical to spiratem 123 but made and supplied without the outer ring (applied to male / female flanges).

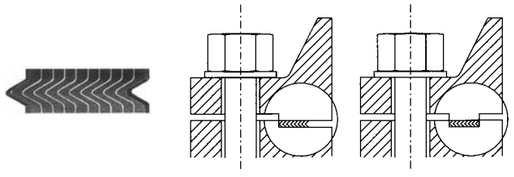


SPIRATEM 12

The standard spiral wound gasket format identical to Spiratem 2 but fitted with outer/centering ring (applied to raised face flanges).

SPIRATEM 2

The gasket consists of sealing element and V-shaped metal strip wound in combination.



Recommended flange surface finish

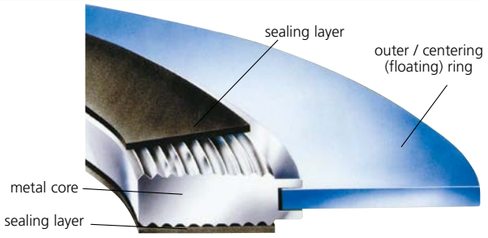
Ra= 3,2 to 12,5 (µm)

Spiral wound gaskets are also available in oval/eliptical shapes. Bars can be made upon the receipt of the drawing only. All of these are welded.

Camprofile gaskets

General characteristics

- camprofiles consist of the metal core, usually stainless steel with concentric grooves on either side, sealing layers are apllied on both sides
- camprofiles resist to pressures up to 250 bar, depending on the sealing layer gaskets can resist temperatures up to approx. +1000 °C.
- suitable for applications acc. to specification for flanges (DIN, ASTM, EN, CSN etc.), the very wide seating stress range (highly suitable for varying temperatures and pressures, less sensitive to assembly faults, suitable for light and heavy designed flanges)
- the gaskets do not damage the flange surface and can be easily removed

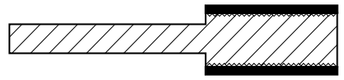


Standard gasket profiles

PARALLEL

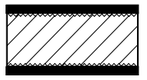
M18L

Parallel root core with integral centering ring and sealing layers.



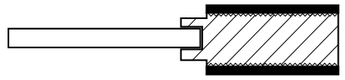
M20L

Parallel root core without centering ring, for male / female, tongue / groove and groove flanges.



M21LM

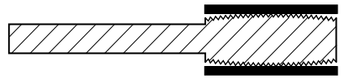
Parallel root core with floating centering ring attached outside the sealing area.



CONVEX

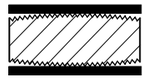
M38L

Convex root core with integral centering ring and sealing layers.



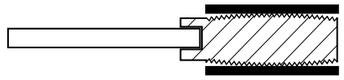
M40L

Convex root core for male/female, tongue/groove and grooved flanges.



M41LM

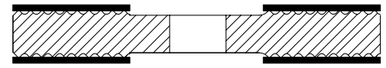
Convex root core with floating centering ring attached outside the sealing area.



SPECIAL

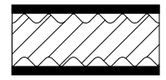
M20L Double

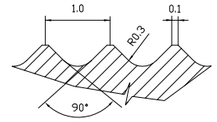
Parallel double core without centering ring with holes in the disk (for special application)



M50L

Parallel core with off centred groove (for male/female, tongue/groove of flanges).





Standard core materials

CSN	AISI ASTM	DIN material No.	DIN specification	Hardness HB	Temperature [°C] Min.	Max.	Density [g/cm³]
11 373, 11 375	Carbon steel	1.0038	RSt.37.2 CS	100 – 130	-40	+500	7,85
17 247	321	1.4541	X10CrNiTi 189	130 – 190	-250	+550	7,9
17 249	304L	1.4306	X2CrNi 189	130 – 190	-250	+550	7,9
17 251	309	1.4828	X15CrNiSi 2012	130 – 190	-100	+1000	7,9
17 348	316Ti	1.4571	X10CrNiMoTi 1810	130 – 190	-100	+550	7,8
17 349	316L	1.4404	X2CrNiMo 1810	130 – 190	-100	+550	7,9
monel 400	N04400	2.4360	NiCu 30 Fe	110 – 150	-125	+600	8,8

Recommended core thickness

3 mm and for new systems 4 mm

Recommended sealing layer thickness: 2 x 0,5 mm, or 2 x 1,0 mm

Graphite	-200	+550	Ceramic	-200	+1100
PTFE	-200	+250	CSF	-40	+250

Recommended flange surface finish

Ra= 3,2 to 6,3 (µm)

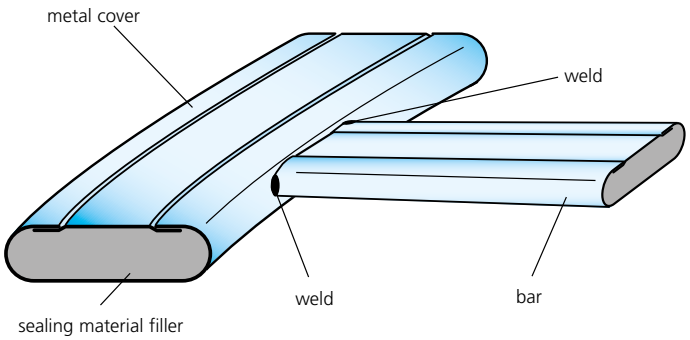
Seating stress range „Q“

Sealing element	Seating stress „Q“ (N/mm²) +20 °C Min.	Recommended	Max.
Graphite	20	90	400
PTFE	20	90	400
Ceramic	20	80	400

Double jacketed gaskets

General characteristics

- metal jacketed gaskets consist of a metal cover and soft sealing material filler
- the sealing filler provides outstanding resilience while the metal jacket guarantees excellent sealing and protects the filler against high pressure conditions, fluctuating temperatures and corrosion
- a wide variety of materials is available to guarantee excellent sealing under specific conditions



Standard gasket profiles

Standard metal materials

Material	CSN	AISI ASTM	DIN material No.	DIN specification	Hardness HB	Temp. [°C] Min.	Temp. [°C] Max.	Density [g/cm³]
carbon steel	11 375	238-C	1.0038	RSt.37.2. CS	100 – 130	-40	+500	7,85
stainless steel	17 247	321	1.4541	X10CrNiTi 189	130 – 190	-250	+550	7,9
stainless steel	17 249	304L	1.4306	X2CrNi 189	130 – 190	-250	+550	7,9
stainless steel	17 348	316Ti	1.4571	X10CrNiMoTi 1810	130 – 190	-100	+550	7,8
stainless steel	17 349	316L	1.4404	X2CrNiMo 1810	130 – 190	-100	+550	7,9
monel 400	-	N04400	2.4360	NiCu 30 Fe	110 – 150	-125	+600	8,8
copper	-	-	2.0090	-	50 – 80	-250	+400	8,9

Standard sealing filler

Graphite	-200	+550
CSF	-100	+250

Dimensions

from 250 to 3000 mm
bars are welded (if applicable)

RTJ - ring type joints

General characteristics

- RTJ are metallic sealing rings suitable for high pressure (up to 1500 bar) and high temperature (up to 1000 °C) applications
- RTJ are supplied in two basic profiles: oval (M8) or octagonal (M9)
- RTJ are always used in combination with special flanges which ensure good and reliable sealing with the correct choice of material and profile

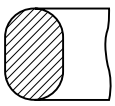
Recommended flange surface finish

Profile R, RX: 1,6 (µm)
Profile BX: 0,8 (µm)

Standard gasket profiles

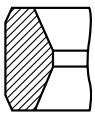
M8-R oval

Model M8 is a standard RTJ of the oval type and designed for flanges with standard ring joint grooves.



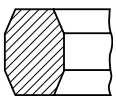
M12-RX

Model M12-RX is for pressures up tu 750 bar. The RX series RTJ are interchangeable with the standard R models. The bolt lenghts must be extended because of the RX series additional height.



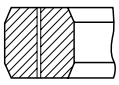
M9-R octagonal

Model M9 is standard RTJ of the octagonal type and designed for flanges with standard ring joint grooves.



M11-BX

M11-BX is RTJ for very high pressures - up to 1500bar. This RTJ is suited only for API-type BX flanges and grooves. Model BX incorporates a pressure balance hole to ensure equalisation of pressure.



Contact

TEMAC, a.s., 289 13 Zvěřínek, Czech Republic
www.temac.cz

Tel. Sales:	+420 325 550 246	Fax:	+420 325 550 104	e-mail:	export@temac.cz
	+420 325 550 283		+420 325 550 104		export@temac.cz
	+420 325 550 107		+420 325 550 250		export@temac.cz
Technical Dept.					
Tel.:	+420 325 550 181	Fax:	+420 325 550 284	e-mail:	tech.help@temac.cz

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