Pipeline Accessories

Rubber Steel gasket 4 pipes

Flange gaskets - Type RSG 4 pipes

DVGW Registriernr.:
NG-5113CQ0574

Product Information

RSG 4 pipes Rubber-Steel-Flange-Gaskets are manufactured of form-vulcanized elastomer with an inner steel ring.
Highest quality elastomeric body for safe and efficient sealing in pipeline flange connections. The special shape with the elliptic ring on the inside provides a first sealing line and a plus in operating safety. This special shape works like an additional "O-ring".
The inner steel ring provides a high level of physical stability, long term functionality and operating safety.
According to standards the printing with colour marking provides safety against misuse and misassembling.

Material qualities, approvals and technical datas

RSG-TW for drinking water and sewage water networks: EPDM

Operating temperature:	-25°C to +120°
Hardness degree:	70+/-5 Shore A
Approvals:	**DVGW W270, Elastomer guide line of UBA/KTW, WRAS and ACS**
Specifications:	DIN-EN 681-1, Type WA/WC/70

RSG-G for Gas Systems: NBR

Operating temperature:	-25°C to 90°C
Hardness degree:	80+/-5 Shore A
Approval:	**DVGW-EN 682** (Installation for transport and distribution of gases or liquid hydrocarbons)
Specifications:	DIN-EN 682, Type GBL/80; **DIN-EN 30690-1**/EN 13555/VDI 2200 **Possible field of application up to incl. PN40 (DP40) - tested, certified**

RSG-FKM for the chemical Industry

Operating temperature:	-25°C bis 200°C
Hardness degree:	70 ± 5 Shore A

FKM has from all elastomers qualities the best resistance against thermal, chemical and areas of solvents.

Other Materials on request.

Application

Rubber-Steel-Flange-Gaskets dedicated to be assembled in:
- drinking water pipelines and systems
- sewage water pipelines and systems
- gas pipeline systems
- all iron-, stainless steel-, cast iron- and plastic flange connections

The elastomers offers a wide range of resistancy.
EPDM provides excellent resistance against several media like different chemicals, industrial water, aqueous salt solutions and is **DVGW approved for drinking water application**.
Very good Ozone- and UV-resistance!

NBR provides excellent resistance against several media like mineral oils, fuels, greases and is **DVGW approved for gas application**.

FKM is very resistant to alkalis, acids and high temperatures.

Chemical resistance table available: www.4pipes.de

Advantages

- printing and colour markings according to standards
- self centering (Inner Bolt Circle layout)
- easy assembling
- high tightening value at low bolt forces due to special shape (elliptic ring)
- best performance for safe tightening in plastic flanges
- high physical stability in assembling and operating process
- high operating safety
- no retorquing required
- no leakage
- cost efficient

RSG flange gaskets - Types

RSG-TW **RSG-FKM** **RSG-G**	Manufactured acc. to DIN EN 1514-1 (formerly DIN 2690) type IBC for flanges acc. to DIN EN 1092-1 and -2
RSG-TW-K **RSG-G-K** **RSG-FKM-K** 	Manufactured for **PE/PP/PVC/PVDF pressure pipe** Flanges with **plastic welding necks, lap-joint flanges with welding stab or flanged bush** simular to DIN 16962-4 (PP)/DIN 16963-4 (PE)/ DIN EN 1092-1 (DIN 2501 PN 10/16) Type IBC
RSG- ANSI	Manufactured for ANSI/ASME B16.5 type IBC flanges
For all available dimensions and pressure ratings, please see our pricelist or feel free to ask for what is required.	

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Flange gaskets - Type RSG-V 4 pipes

Product Information

RSG-V rubber steel flange gasket is a two-piece construction, made from elastomeric material vulcanized over steel rings.

RSG-V offers the possibility of adjustment of the angle of the sealing surfaces.

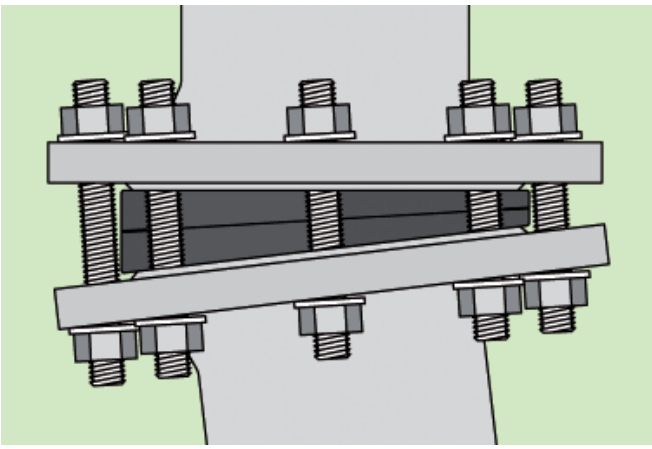
Elastomeric elements provide safe sealing against fluids on flange connections with **non-parallel flange surfaces**. The two-piece construction of conical elements combines sealing as well as compensation of angular misalignment by allowing **adjustment up to 8°**.
Steel rings, vulcanizes into the elastomeric elements, ensure mechanical stability and long term functionality.

Material qualities and technical data

RSG-V for water, various other fluids, industrial applications and waste water: **EPDM**

Operating temperature:	-25° C up to +120° C
Hardness:	70 ±5 Shore A

Other material qualities and certificates are available on request.



Application

RSG-V flange gaskets dedicated to be used in:
- flange connections with sealing surfaces not parallel to each other
- hydrants with misaligned connection tee / duckfoot bend
- firefighting pipelines
- buried pipeline systems

Elastomer EPDM provides excellent resistance against several media like different chemicals, industrial water, aqueous salt solutions and is **DVGW approved for drinking water application**. Very good Ozone and UV resistance!

Chemical resistance table available: www.4pipes.de

Unique advantages

- Easy and cost effective installation due to of adjustment of sealing surfaces
- excellent medium resistance
- vulcanized steel rings provide long term stability
- high tightening value at low bolt forces
- no retightening of screws
- high operation safety
- no leakage
- cost efficient by avoiding follow-up costs

Dimensions and pressure rates

RSG-V flange gaskets are manufactured according to DIN-EN 1514-1 (comparable to old DIN 2690), form IBC, self-centering in flanges according to DIN-EN 1092-1, DIN-EN 1092-2.

Please find available dimensions and pressure rates in our price list or contact us.

Gasket dimensions suitable for plastic and ANSI flanges are available on request.

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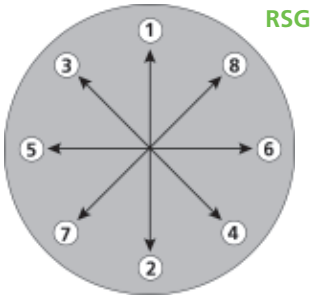
Flange gasket - Type RSG and RSG-V 4 pipes

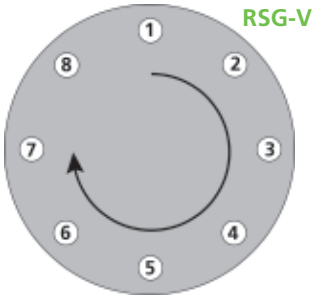
Installation RSG



- the sealing line of flange surfaces needs to be clean, free of grooves and edges
- insert the gasket carefully between the flanges
- lubricate bolts
- insert bolts into bolt holes
- tighten screws evenly (in three steps 30% + 40% + 30%) with a torque wrench according to the tightening torque table specification below
- tighten screws crosswise according to picture on right side

For any other installation or operation situation please contact our customer service.

Installation RSG-V



- sealing lines of flanges must be **clean and free of grooves and edges**
- extra long screws with smaller diameter might be necessary
- adjust angle of RSG-V according to misalignment of flanges by twisting sealing elements against each other
- IBC form ensures self-centering of gasket
- insert the gasket carefully between the flanges
- lubricate bolts
- insert bolts into bolt holes
- tighten screws evenly (in three steps 30% / 40% / 30%) **in circular direction (see picture)** with a **torque wrench** according to table below

For any other installation or operation situation please contact our customer service.

Important advice

Assemble gaskets just once! Don´t assemble double layed gaskets!
Don´t use lubricants, greases or glues for assembling gaskets!
Please ensure that producers assembling advices and personal qualifications requirements acc. DIN-EN 1591are always respected!

Torques values for flange gaskets type RSG and RSG-V Values in Newtonmeter (Nm)					
DN	**PN 6**	**PN 10**	**PN 16**	**PN 25**	**PN 40**
15	15	30	20	25	25
20	25	30	40	25	40
25	25	30	40	25	40
32	40	100	100	100	100
40	40	100	100	100	100
50	70	100	100	100	100
65	70	100	100	100	100
80	100	100	100	100	100
100	150	100	100	200	200
125	100	100	100	310	310
150	100	200	200	310	310
200	100	200	200	310	450
250	100	200	310	450	720
300	200	200	310	450	720
350	200	200	310	720	980
400	200	290	450	820	1200
450	-	290	-	-	-
500	200	290	550	820	-
600	300	420	750	1200	-
700	300	420	750	1300	-
800	350	610	960	1850	-
900	400	610	960	1850	-
1000	400	800	1300	2600	-
1200	550	1100	1200	-	-
1400	-	1400			
1600	-	1930			
1800	-	1930			
2000	-	1930			

Calculated for flanges on the basis of EN 1591-1, considering the specific gasket values acc. to DIN EN 13555.

Values based on friction μ = 0,14 (screws lubricated).
Screw quality 5.6 or higher. Surface stress level 15 N/mm².

For PE flanges please note:
The torque value must be adjusted to the grade of the PE Flange. The torque values are approximate values, they can change under influence of various parameters such as temperature, lubrication, e.g.
Every application case has to be clarified for material by own response.

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Flange gaskets - Type RFG 4 pipes

Product information

Rubber Flexible Gasket RFG 4 pipes made of elastomer material with fixing eyelets to be assembled in pipeline flanges.
Form special eyelets to be prefixed on flange bolts.

Material qualities, technical data

RFG for water and sewage water: EPDM

Operating temperature:	-25°C to +120°C
Hardness:	70 ±5 Shore A acc. ISO 48
Standard:	DIN-EN 681-1 Type WC/70

DN Pipe	suitable for PN	RFG ID mm	RFG OD mm	thickness mm
32	6/10/16	40	71,5	3
40	6/10/16	50	83	3
50	6/10/16	60	97	3
65	6/10/16	75	121	3
80	6/10/16	80	130	3
100	6/10/16	100	154	3
125	6/10/16	125	183	3
150	6/10/16	150	209	3
175	6/10/16	175	223	4
200	6/10/16	200	263	4
250	6/10/16	250	313	4
300	6/10/16	300	364	4
350	6/10/16	350	425	4
400	6/10/16	400	476	4
450	6/10/16	450	545	4
500	6/10/16	500	576	5
600	6/10/16	600	676	5
700	6/10/16	700	790	6
800	6/10/16	800	890	6
900	6/10/16	900	990	6

Application

RFG-Rubber-Flange-Gaskets are dedicated to be assembled in:
- water pipeline systems
- sewage water pipeline systems
- all iron-, stainless-, cast iron- and plastic flange connections as well as coated flanges.

The elastomer offers a large range of good media resistance. **EPDM** provides an excellent resistance against several media like different chemicals, industrial water, aqueous salt solutions. **Very good resistance against UV and Ozone!**

Media resistance table available: www.4pipes.de

Advantages

- low cost gasket
- easy assembling due to fixing eyelets
- low torque assembling

Dimensions and pressure ratings

RFG flange gaskets fit, with the possibility of pre-fixing to flange bolts, in steel flanges, stainless steel, cast iron with or without coating, as well as plastic.
Please refer to the available dimensions of our pricelist and beside table.
RFG flange gaskets are suitable for PN6, PN10 and PN16 pressure ratings.

The 4 pipes warranty is limited to the replacement of faulty material. The usability of the product for the individual application is fully under the user's responsibility.

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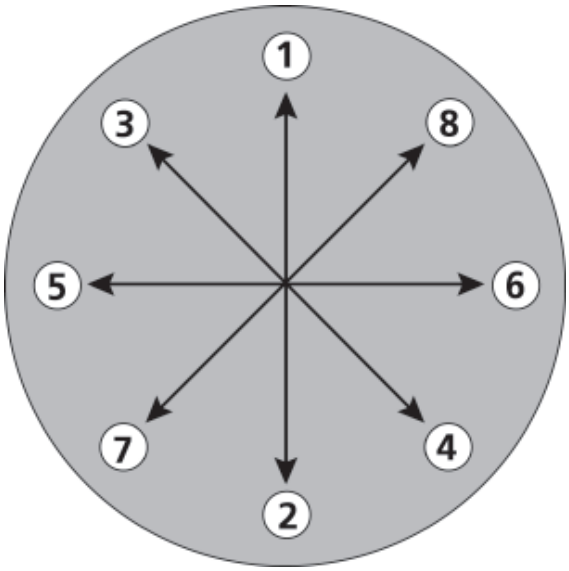
Flange Gaskets Type RFG 4 pipes

Assembling advice

- the sealing line of the flange surface needs to be clean, free of grooves and free of edges
- the flange surfaces need to be aligned
- insert 2 bolts in bolt holes for eyelets
- insert the gasket carefully between the flanges and fix the eyelets on the bolts
- lubricate bolts
- insert rest of bolts in the holes
- tighten screws evenly (in three steps 30%-40%-30%) with a torque wrench according to the tightening torque table spec. below
- tighten screws crosswise according to picture on the right hand side



Important to know

- assemble gaskets just once!
- don´t assamble double layed gaskets!
- use only quality gaskets!
- don´t use any lubricants, greases or glues to assemble gaskets!
- Please ensure that producers assembling advices and personal qualifications according DIN-EN 1591 are always respected!

Torques values for flange gaskets type RFG Values in Newtonmeter (Nm)	
DN	**RFG**
15	15 Nm
20	20 Nm
25	25 Nm
32	40 Nm
40	50 Nm
50	60 Nm
65	50 Nm
80	60 Nm
100	65 Nm
125	70 Nm
150	100 Nm
200	140 Nm
250	120 Nm
300	140 Nm
350	190 Nm
400	280 Nm
500	280 Nm
600	360 Nm
700	400 Nm
800	550 Nm
900	650 Nm

Values based on friction μ = 0,14 (screws lubricated).
Screw quality 5.6 or higher. Surface stress level 15 N/mm².

For PE flanges please note:
The torque value must be adjusted to the grade of the PE Flange.
The torque values are approximate values, they can change under influence of various parameters such as temperature, lubrication, e.g.

Every application case has to be clarified for the material by own response of the user.

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