

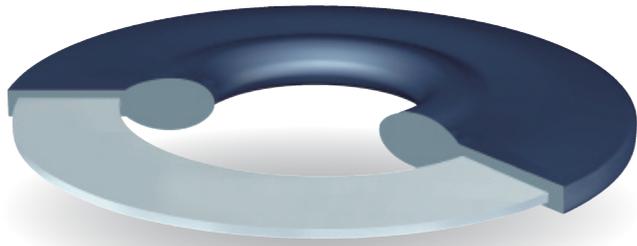


Pipeline Accessories

Rubber Steel Gaskets
4 pipes



Flange Gaskets - Type RSG 4 pipes



DVGW Registration
number: NG-5113DM0218

Product Information

RSG 4 pipes Rubber-Steel-Flange-Gaskets are manufactured of friction-locked vulcanised elastomer with an inner steel ring. The elastomer body provides secure sealing of the flange connection. The special shape with the elliptic ring on the inside provides an in-built seal with additional, functional sealing potential. This special shape works like an additional "O-ring". The inner steel ring provides a high level of physical stability and long-term functionality. Clear identification marking in different colours prevents any mismatching or mix-ups.

Material qualities, approvals and technical data

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,**
DVGW certificate of conformity hygiene

Specifications: DIN-EN 681-1, Type WAWC/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, hydrogen resistant)

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

Out of all the elastomer qualities, FKM has the best resistance to heat, chemicals and solvents.

Other materials on request.

Application

Rubber-steel-flange gaskets are intended for:

- 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 to several substances, including 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 to several substances, including different mineral oils, fuels, greases, other hydrocarbons and **100% H₂ hydrogen.** **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-centring (inner-bolt-circle layout)
- easy assembling
- high tightening value at low bolt forces due to special shape (elliptic ring)
- best performance for secure 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 rod or flanged bush similar 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 price list or feel free to ask for what is required.	

The 4 pipes warranty only applies to faulty material. Checking the suitability of the product for the individual application is solely the responsibility of the user. 4 pipes does not grant any warranty for pre-installed or reused flange gaskets.

Flange Gaskets - Type RSG-TW-V 4 pipes



Drinking-water
KTW/W270

Product Information

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

With its twist and plug mechanism, the RSG-TW-V can be adjusted to the angle of the sealing surface.

Elastomeric elements provide secure sealing against fluids on flange connections with **non-parallel flange surfaces**. The two-piece construction of conical elements not only forms the seal, but also compensates for angular misalignment by allowing **adjustment up to 8°**.

Steel rings, vulcanized into the elastomeric elements, ensure mechanical stability and long term functionality.

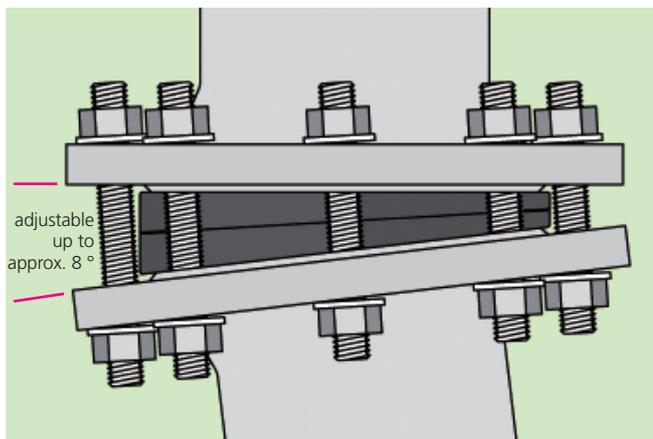
Material qualities and technical data

RSG-TW-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
Approvals:	DVGW W270, Elastomer guideline of UBA/KTW, WRAS and ACS, DVGW certificate of conformity hygiene

Specifications: DIN-EN 681-1, Type WA/WC/70

Other material qualities and certificates are available on request.



Application

RSG-TW-V flange gaskets are intended for:

- flange connections with sealing surfaces not parallel to each other
- hydrants with misaligned connection tee / duckfoot bend
- pipes for firefighting
- buried pipeline systems

Elastomer EPDM provides excellent resistance to several substances, including 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 adjustment of sealing surfaces
- excellent resistance to substances in pipes
- vulcanized steel rings provide long term stability
- high tightening value at low bolt forces
- no retightening of bolts
- excellent operational reliability
- no leakage
- cost effective because follow-up costs are avoided

Dimensions and pressure rates

RSG-TW-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.

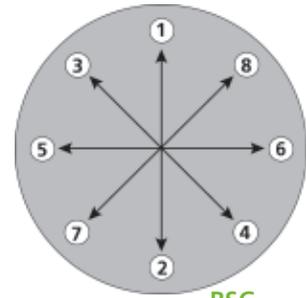
The 4 pipes warranty only applies to faulty material. Checking the suitability of the product for the individual application is solely the responsibility of the user. 4 pipes does not grant any warranty for preinstalled or reused flange gaskets.

Flange Gasket - Type RSG and RSG-TW-V 4 pipes



Installation RSG

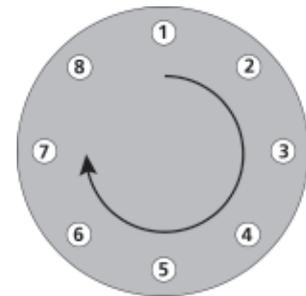
- the sealing line of flange surfaces needs to be clean, free of grooves and edges
 - insert the gasket carefully between the flanges
 - lubricate bolts
 - insert bolts into bolt holes
 - tighten bolts evenly (in three steps 30% + 40% + 30%) with a torque wrench according to the tightening torque table specification below
 - tighten bolts in a diagonally opposite sequence as shown in the picture on the right
- For any other installation or operation situation please contact our customer service.



RSG

Installation RSG-TW-V

- sealing lines of flanges must be **clean and free of grooves and edges**
 - extra long bolts with smaller diameter might be necessary
 - adjust angle of RSG-V according to misalignment of flanges by plugging and twisting sealing elements into each other
 - IBC form ensures self-centering of gasket
 - insert the gasket carefully between the flanges
 - lubricate bolts
 - insert bolts into bolt holes
 - tighten bolts evenly (in three steps 30% / 40% / 30%) **in a clockwise direction (see picture to the right)** with a **torque wrench** according to table below
- For any other installation or operation situation please contact our customer service.

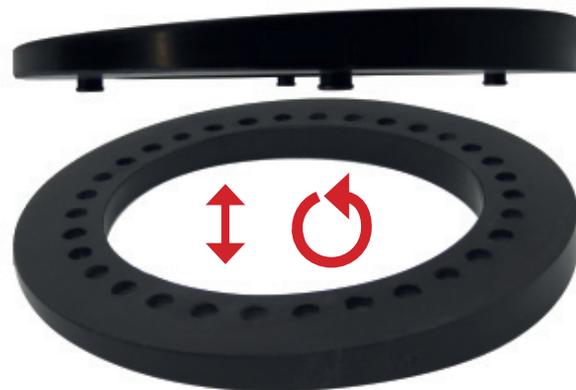


RSG-TW-V

Important advice

Gaskets should only be installed once. Don't apply any additional sealant, lubricant or glue on the installed gasket. Never install more gaskets on top of the first one. Please adhere to the installation instructions/regulations and requirements for qualified fitters, in accordance with DIN-EN 1591.

Torques values for flange gaskets type RSG and RSG-TW-V					
Values for steel flanges 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	100	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			



RSG-TW-V (twist and plug tmechanism)

The RSG gasket was tested and calculated by the laboratory company amtec Messtechnischer Service GmbH.

Calculated for flanges on the basis of EN 1591-1, considering the specific gasket values acc. to DIN EN 13555 and VDI 2200.

Values based on friction $\mu = 0.14$ (bolts lubricated). Bolts quality 5.6 or higher. Flange quality: 1.0460 (C22.8)

For PE flanges please note:

The torque value must be adjusted to the grade of the PE flange. All informations on tightening torques can be obtained from the flange manufacturer.

Also note DVS2210-1 B3.

Checking the suitability of the product for the individual application is solely the responsibility of the user. 4 pipes does not grant any warranty for preinstalled or reused flange gaskets.

Flange Gaskets - Type RFG 4 pipes



Product information

Rubber Flexible Gasket RFG 4 pipes made of elastomer material with fixing eyelets to be fitted in pipeline flanges. Mould-vulcanised elastomer ring with eyelets for easy positioning and fixing on the bolts of pipeline flange connections.

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 intended for:

- water pipeline systems
- sewage water pipeline systems
- all iron, stainless steel, cast iron and plastic flange connections as well as coated flanges.

The elastomer provides excellent resistance to many substances in pipes. **EPDM** is highly resistant to a variety of different salts, acids, alkalis and aqueous solutions.

Very high resistance to UV and ozone!

Substance resistance table available: www.4pipes.de

Advantages

- low-cost gasket
- easy installation using fixing eyelets
- low-torque installation

Dimensions and pressure ratings

RFG flange gaskets are suitable for steel flanges, stainless steel, cast iron (with or without coating) and plastic, with the option of pre-fixing to flange bolts.

Please refer to the available dimensions in our price list and the table on the left.

RFG flange gaskets are suitable for PN6, PN10 and PN16 pressure ratings.

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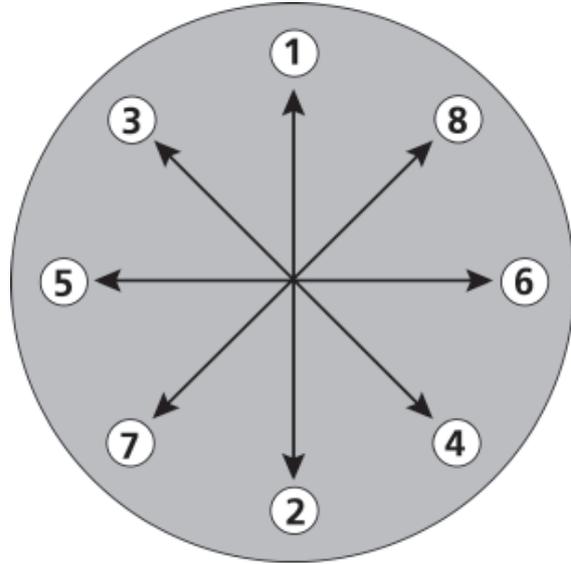
Flange Gaskets Type RFG 4 pipes

Installation instructions

- 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 the remaining bolts in the holes
- tighten bolt evenly (in three steps 30%-40%-30%) with a torque wrench according to the tightening torque table spec. below
- tighten bolt in a diagonally opposite sequence as shown in the picture on the right

Important to know

- only install gaskets once!
- don't install more gaskets on top of the first one!
- only use quality gaskets!
- don't apply any lubricant, sealant or glue to the installed gasket!
- please adhere to the installation instructions/regulations and requirements for qualified fitters, in accordance with DIN-EN 1591!



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 $\mu = 0.14$ (bolt lubricated).
Bolt quality 5.6 or higher.

For PE flanges please note:
The torque value must be adjusted to the grade of the PE flange.
All informations on tightening torques can be obtained from the flange manufacturer. Also note DVS2210-1B3.

Checking the suitability of the product for the individual application is solely the responsibility of the user. 4 pipes does not grant any warranty for preinstalled or reused flange gaskets.