

# FGR

## FRIAGRIP reducer

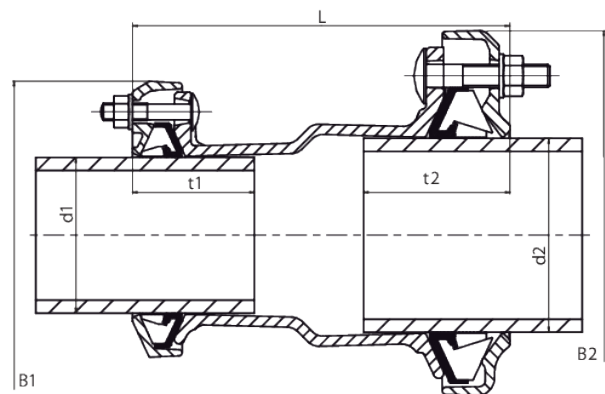
Restrained Reducer-coupling for connecting pipes of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE-HD/PEX).

- Body and bonnet are made of ductile iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250  $\mu\text{m}$  acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20 °C - +30 °C

### Note:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.

When used on asbestos cement pipes, restrained function cannot be ensured.



Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar

Reference	DN	d <sub>1</sub>	d <sub>2</sub>	PN	B1	B2	L	t <sub>1</sub> min	t <sub>1</sub> max	t <sub>2</sub> min	t <sub>2</sub> max	Screws (pc. / size)	Weight [kg]	BX	Pallet quantity
672401	32/40	36,0-46,0	43,5-63,5	16	153	168	226	65	95	65	95	3 x 670603 / 3 x 670603	4,640	5	90
672405	80/100	85,7-107,0	107,2-133,2	16	212	280	282	65	95	65	95	3 x 670603 / 3 x 670707	10,300	1	24

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672407	100/125	107,2-133,2	132,2-160,2	16	280	305	306	90	125	90	115	3 x 670707 / 3 x 670707	14,200	1	12
672408	100/150	107,2-133,2	158,2-192,2	16	280	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17,000	1	12
672409	125/150	132,2-160,2	158,2-192,2	16	305	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17,500	1	12
672411	150/175	158,2-192,2	192,2-226,9	16	339	403	347	90	125	90	135	4 x 670707 / 5 x 670707	24,800	1	12
672413	175/200	192,2-226,9	218,1-256,0	16	403	432	347	125	155	125	165	5 x 670707 / 5 x 670707	34,200	1	8
672415	200/250	218,1-256,0	266,2-310,2	16	432	476	436	125	165	125	165	5 x 670707 / 6 x 670717	42,600	1	8
672417	250/300	266,2-310,2	315,0-356,0	16	476	524	524	125	165	125	200	6 x 670717 / 8 x 670717	42,600	1	4
672423	400/400+	398,0-442,0	448,0-492,0	16	623	713	575	125	200	125	200	10 x 670717 / 12 x 670619	122,000	1	1
672427	500/500+	498,0-552,0	558,0-608,0	16	803	860	595	140	215	140	215	9 x 670619 / 10 x 670619	156,000	1	1
672431	600/600+	604,0-648,0	676,0-726,0	16	900	975	635	195	255	195	255	12 x 670619 / 14 x 670619	100,000	1	1

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar,

larger DN 300 = 10 bar

Reference	DN	d <sub>1</sub>	d <sub>2</sub>	PN	B1	B2	L	t <sub>1</sub> min	t <sub>1</sub> max	t <sub>2</sub> min	t <sub>2</sub> max	Screws (pc. / size)	Weight [kg]	BX	Pallet quantity
670401	32/40	36,0-46,0	43,5-63,5	5	153	168	226	65	95	65	95	3 x 670603 / 3 x 670603	4,640	5	90
670405	80/100	85,7-107,0	107,2-133,2	5	212	280	282	65	95	65	95	3 x 670603 / 3 x 670707	10,300	1	24
670407	100/125	107,2-133,2	132,2-160,2	5	280	305	306	90	125	90	115	3 x 670707 / 3 x 670707	14,200	1	12
670408	100/150	107,2-133,2	158,2-192,2	5	280	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17,000	1	12
670409	125/150	132,2-160,2	158,2-192,2	5	305	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17,500	1	12
670411	150/175	158,2-192,2	192,2-226,9	5	339	403	347	90	125	90	135	4 x 670707 / 5 x 670707	24,800	1	12

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Reference	DN	d <sub>1</sub>	d <sub>2</sub>	PN	B1	B2	L	t <sub>1</sub> min	t <sub>1</sub> max	t <sub>2</sub> min	t <sub>2</sub> max	Screws (pc. / size)	Weight [kg]	BX	Pallet quantity
670413	175/200	192,2-226,9	218,1-256,0	5	403	432	347	125	155	125	165	5 x 670707 / 5 x 670707	37,200	1	8
670415	200/250	218,1-256,0	266,2-310,2	5	432	476	436	125	165	125	165	5 x 670707 / 6 x 670717	42,600	1	8
670417	250/300	266,2-310,2	315,0-356,0	5	476	524	524	125	165	125	200	6 x 670717 / 8 x 670717	42,600	1	4

## FRIAGRIP reducer

### Good reasons for FRIAGRIP

- Workload is reduced to a minimum (no abutments required for changes of direction)
- The components are supplied pre-assembled at the factory, so no conversion and replacement work is required on site
- One sealing package and one gripping segment for the pipe materials steel, cast iron, ductile cast iron, fiber cement, PVC, PE-HD/PEX
- The sealing and gripping systems work independently of each other. This ensures a secure seal under dynamic axial loads
- The waffle profile of the seal forms sealing chambers on the pipe surface, which support secure sealing on rough pipe surfaces
- Pipes can be angled up to 8° (coupling) or 4° (flange adapter). In the event of pipe fractures, a misalignment can be compensated for by installing two couplings. The couplings act like a joint and keep the pipe stress-free
- Simple installation with standard tools
- One torque for all pipe materials
- It is not necessary to check the tightening torque of the screws several times
- The tolerance range of up to 54 mm enables different pipe materials to be connected to one component. Reduced stock levels for suppliers and retailers

### Areas of application

FRIAGRIP reducing coupling FGR as a restrained connection element for pipes made of different materials (steel, cast iron, ductile cast iron, fiber cement\*\*, PVC\*\*\*\*, PE-HD\*\*\*). Available from DN 32 to DN 600+.

The clamping ranges up to DN 300 are designed so that a component can be used on all pipe materials of a nominal diameter. For components > DN 300, the outside pipe diameter must be taken into account.

FRIAGRIP can be used with the NBR seal for the media gas, water and waste water, in the drinking water distribution network with EPDM seal (DVGW-W270 [11.2007], KTW). Screws and nuts made of stainless steel (V2A / V4A).

FRIAGRIP components can only be used in civil engineering!

### Processing instructions

FRIAGRIP can be used to produce restrained joints without abutments (exception: fiber cement pipes).

The pipe ends must be prepared in accordance with the general installation requirements (see FRIAGRIP installation instructions). The insertion depths  $t_{min.}/t_{max.}$  must be observed.

\*Water:  $\leq$  DN 300 PN 16,  $>$  DN 300 PN 10 / Gas:  $\leq$  DN 400 PN 5 The information on the type plate must be observed!

\*\* For fiber cement pipes, the longitudinal force locking cannot be guaranteed.

\*\*\* When using with PE-HD/PEX pipes, the FRIAGRIP support sleeve (type FRIATEC Mod. SHVA, see current FRIAGRIP price list) must be used (see FRIAGRIP Info No. HI409).

\*\*\*\* For use on PVC gas pipes, see FRIAGRIP Info No. HI410. For PVC pipes with wall thicknesses DIN 8061/62 - PN10, the FRIAGRIP support sleeve (type FRIATEC Mod. SHVA, see current FRIAGRIP price list) must be used.