Georg Fischer Waga N.V.

+GF+

Product Catalogue

Our solutions

With all of our products we put quality and simplicity first. With our reliable fittings a quick, easy and maintenance free connection can be made that will last for a long time. That is the strength of all our products and for the water and gas market an absolute need!

+ Wide range restraint fittings

MULTI/JOINT® 3000 Plus

Page 12

DN50 - DN400

Page 12

DN425 - DN600

Page 12

DN625 - DN825

NEW

IN 2023: DN900 - DN1025

+ Dedicated fittings

ST-System

Page 56

Up to DN2200

+ Repair clamps & tapping saddles

Multi/Clamp

Page 60

+ Drilling devices

W400 / W410

Page 88

Georg Fischer Waga N.V.

Georg Fischer Waga N.V. was founded in 1957 and has the main focus on the development, production and sales of high quality connection techniques. For many years now, our products are successfully used around the world in under and above ground water and gas applications for new construction, expansion and maintenance and repair.

Table of contents

The technical data are not binding and not expressly warranted characteristics of the goods. They are subject to change. Please consult our general conditions of supply.

For more information visit our website:

Water & gas

Maintenance & repair

Maintenance and repair in under and above ground piping systems for water and gas require no special efforts with the products from the Georg Fischer Waga N.V. program. We offer a wide range of products which can be used for transport lines, distribution lines, house connections and service lines.

We offer various solutions for a variety of maintenance and repair work. Whether the job is to connect, repair or drill, we have the right product. Quality and simplicity are always the most important characteristics of our products. With our reliable fittings it is easy to make a maintenance free and long lasting connection. That is the strength of all our products and an absolute must for the users in the water and gas market!

Transport lines

Transport lines carry water and gas from the source to the distribution lines. Distribution lines distribute the water and gas towards the end user. Transport lines, usually with large diameters, are repaired with large diameter fittings. Especially for these large diameter transport lines we developed products that can easily be used to connect and repair these pipelines from DN300 up to DN2200.

Distribution lines

Distribution lines ensure water and gas distribution to the end user. Through large diameter transport lines, via distribution and service lines, water and gas reaches the end user. Whether it concerns new construction or maintenance and repair applications, with products from the Georg Fischer Waga N.V. program distribution lines from DN50 up to DN825 can perfectly be installed.

House connections and service lines

The last stage of the distribution grid is through pipelines that supply water and gas to the meter. These pipelines are commonly known as house connections and service lines. Through these pipe lines, with sizes of up to and including DN50, the water and gas is brought into houses or buildings. We have developed products for connections to these smaller diameter pipe lines, such as saddles and drilling devices.

Around the world

Our reference cases

Whether it is connecting, repairing or tapping, our products can be used in a variety of applications. Our product programs are succesfully implemented in the water and gas market in various applications around the world.

A selection of MULTI/JOINT® reference cases:

The Premiere of a DN825 MULTI/JOINT® Flange Adaptor

Zürich, Switzerland

More and more utility companies around the world get acquainted with their very first MULTI/JOINT® big-sized fitting DN625 – DN825 (Big 5 family) for their water applications. Switzerland is no exception. Carmine Bencivenga, Product Manager, GF Switzerland, saw the big fitting being lifted into the trench and installed.

And Now for Something Completely Different

The Dutch armed forces

Customers only use MULTI/JOINT® within the water and gas business, right? Think again! For GF Waga, there was a customer from an unexpected quarter. It turns out none other than the Dutch army puts its trust in MULTI/JOINT® during their missions.

The Night Shift in Action

Selm, Germany

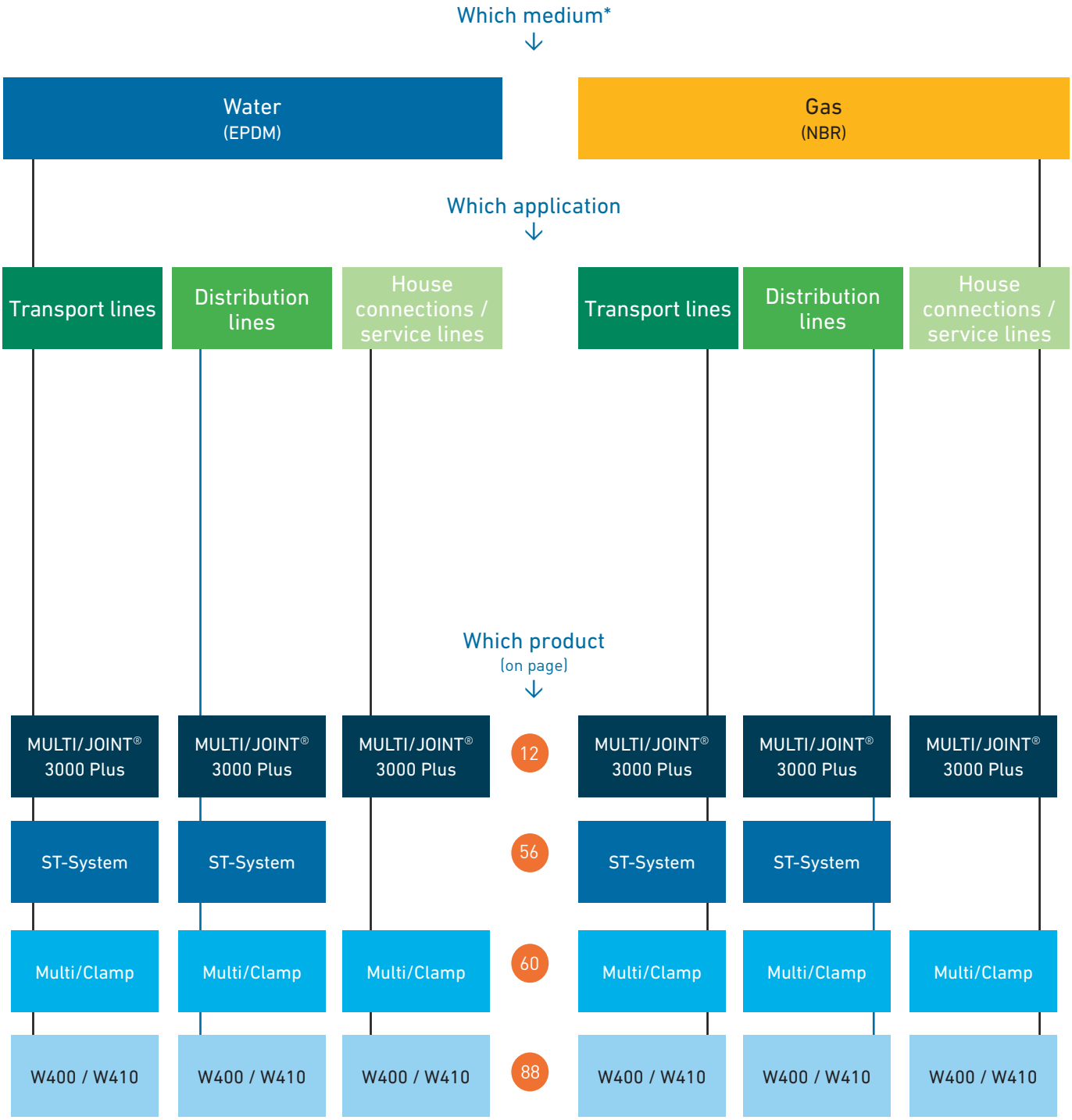
GELSENWASSER Energienetze GmbH specializes in distribution lines of electricity, gas, and water. From heating installations to street lighting, this multi-utility company is responsible for 5.500 kilometers of gas pipes, 1.000 kilometers of water pipes, and 184 kilometers of electricity lines for 51 cities and municipalities of North Rhine-Westphalia. The wide range fitting MULTI/JOINT® of GF Piping Systems was convincing as a repair solution for one of the water pipes that needed replacement.

Read all the Reference Cases on our Website


The right
choice

Which product do you need?

Our products can be used for various applications. Therefore we would like to help you make the right choice. In the below shown flow chart you can see which product is suitable for your application.



*** For other fluids than water and gas, please contact your supplier.**

MULTI/JOINT® 3000 Plus

Restraint gripping system

The gripping system consists of a Uni/Fiks ring which contains numerous stainless steel A4 (AISI 316) grippers: the Uni/Fiksers. Together with the Varioseal made of EPDM or NBR, the MULTI/JOINT® ensures a restraint and leak-proof connection.

Quick, safe and simple

The bolts, nuts and washers are made of stainless steel A2 (AISI 304) or A4 (AISI 316). The nuts are galvanized and passivated. The bolts are reversible and Lubo coated to prevent cold welding. They are perfect for re-use and make tightening very easy.

Corrosion free fitting

The body as well as the clamping rings are made of ductile iron in accordance with EN-GJS-450-10. These components are coated with Resicoat® epoxy powder coating, type RT 9000 R4, guaranteeing a corrosion free MULTI/JOINT®.

Hygiene protection

All MULTI/JOINT® fittings have hygiene protection caps, so the fitting will stay clean from production to point of use. Hygiene caps are made from recycled plastic. Recycle again after removal.

Hygiene cap
DN50 - DN400

Product range

MULTI/JOINT® 3000 Plus

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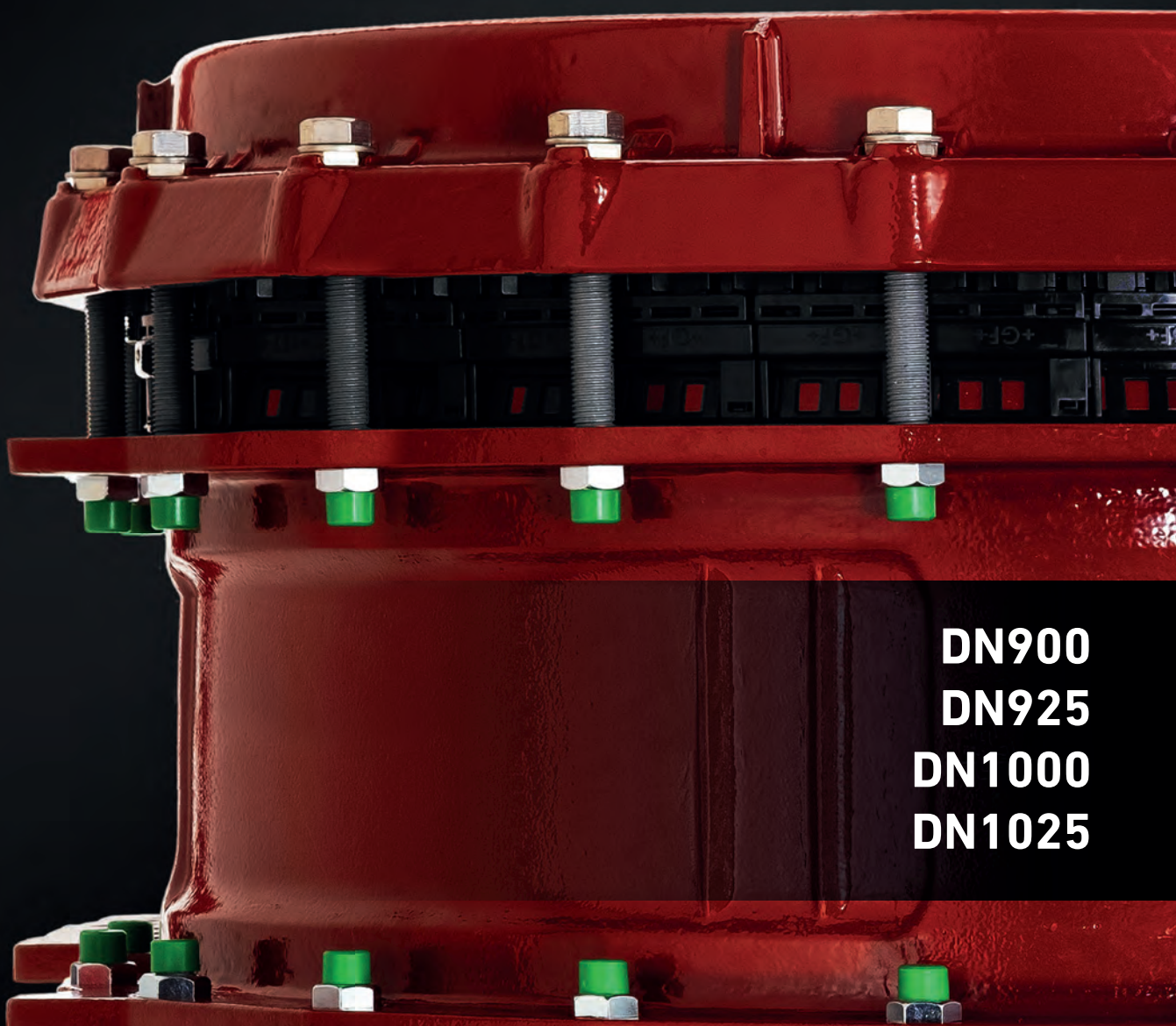
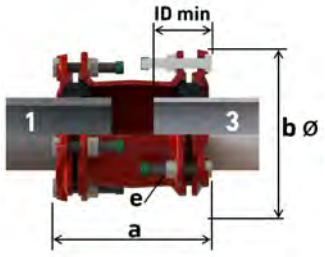
New Sizes!

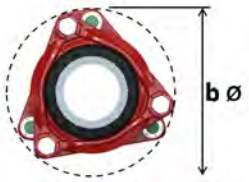


DN900
DN925
DN1000
DN1025

Table of contents		Page
	MULTI/JOINT® 3000 Plus (DN50 - DN825) Restraint	12
	MULTI/JOINT® 3000 Plus (DN50 - DN600) Non Restraint	37
	MULTI/JOINT® 3000 Plus Accessories	48
	ST-System Fittings	56
	Multi/Clamp	60
	W400/W410 Drilling Devices	88
	Technical Data	94
	Index	174

MULTI/JOINT® 3000 Plus (DN50 - DN825) Restraint





MULTI/JOINT® 3007 Plus Wide Range
Coupling, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Please note, when using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of the insert stiffener MJ DN625 - DN800 (see accessories) is mandatory
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth
DN625 - DN1025 for water applications only

DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	PF	EPDM / A2 Code	PF	Weight (kg)
50	46 - 71	46 - 71	**709 305 210**	1 54 323 061	**709 305 610**	1 54 323 061	5.100
65	63 - 90	63 - 90	**709 305 212**	1 54 323 061	**709 305 612**	1 54 323 061	6.100
80	84 - 105	84 - 105	**709 305 214**	1 54 323 061	**709 305 614**	1 54 323 061	7.300
100	104 - 132	104 - 132	**709 305 216**	1 54 323 061	**709 305 616**	1 54 323 061	9.200
125	132 - 155	132 - 155	**709 305 218**	1 54 323 061	**709 305 618**	1 54 323 061	12.300
150	154 - 192	154 - 192	**709 305 220**	1 54 323 061	**709 305 620**	1 54 323 061	16.500
200	192 - 232	192 - 232	**709 305 224**	1 54 323 061	**709 305 624**	1 54 323 061	26.900
225	230 - 268	230 - 268	**709 305 226**	1 54 323 061	**709 305 626**	1 54 323 061	39.500
250	267 - 310	267 - 310	**709 305 228**	1 54 323 061	**709 305 628**	1 54 323 061	41.100
300	315 - 356	315 - 356	**709 305 232**	1 54 323 061	**709 305 632**	1 54 323 061	53.700
350	352 - 393	352 - 393	**709 305 236**	1 54 323 061	**709 305 636**	1 54 323 061	68.100
400	392 - 433	392 - 433	**709 305 240**	1 54 323 061	**709 305 640**	1 54 323 061	68.700
425	432 - 464	432 - 464	**709 305 242**	1 54 323 071	**709 305 642**	1 54 323 071	92.300
450	450 - 482	450 - 482	**709 305 272**	1 54 323 071	**709 305 672**	1 54 323 071	96.800
475	481 - 513	481 - 513	**709 305 273**	1 54 323 071	**709 305 673**	1 54 323 071	100.200
500	500 - 532	500 - 532	**709 305 274**	1 54 323 071	**709 305 674**	1 54 323 071	105.700
550	548 - 580	548 - 580	**709 305 276**	1 54 323 071	**709 305 676**	1 54 323 071	117.300
600	605 - 637	605 - 637	**709 305 278**	1 54 323 071	**709 305 678**	1 54 323 071	137.500
625	630 - 662	630 - 662		1 54 323 071			
675	665 - 697	665 - 697		1 54 323 071			
700	709 - 741	709 - 741		1 54 323 071			
750	745 - 777	745 - 777		1 54 323 071			
800	799 - 831	799 - 831		1 54 323 071			
825	837 - 869	837 - 869		1 54 323 071			

DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
50	**709 305 010**	1 54 323 061	**709 305 310**	1 54 323 061	5.100
65	**709 305 012**	1 54 323 061	**709 305 312**	1 54 323 061	6.100
80	**709 305 014**	1 54 323 061	**709 305 314**	1 54 323 061	7.300
100	**709 305 016**	1 54 323 061	**709 305 316**	1 54 323 061	9.200
125	**709 305 018**	1 54 323 061	**709 305 318**	1 54 323 061	12.300
150	**709 305 020**	1 54 323 061	**709 305 320**	1 54 323 061	16.500

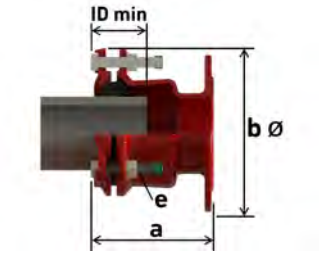
table continued on the next page

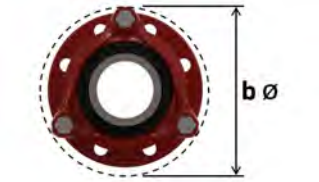
DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
200	**709 305 024**	1 54 323 061	**709 305 324**	1 54 323 061	26.900
225	**709 305 026**	1 54 323 061	**709 305 326**	1 54 323 061	39.500
250	**709 305 028**	1 54 323 061	**709 305 328**	1 54 323 061	41.100
300	**709 305 032**	1 54 323 061	**709 305 332**	1 54 323 061	53.700
350	**709 305 036**	1 54 323 061	**709 305 336**	1 54 323 061	68.100
400	**709 305 040**	1 54 323 061	**709 305 340**	1 54 323 061	68.700
425	**709 305 042**	1 54 323 071	**709 305 342**	1 54 323 071	92.300
450	**709 305 072**	1 54 323 071	**709 305 372**	1 54 323 071	96.800
475	**709 305 073**	1 54 323 071	**709 305 373**	1 54 323 071	100.200
500	**709 305 074**	1 54 323 071	**709 305 374**	1 54 323 071	105.700
550	**709 305 076**	1 54 323 071	**709 305 376**	1 54 323 071	117.300
600	**709 305 078**	1 54 323 071	**709 305 378**	1 54 323 071	137.500
625	**709 305 280**	1 54 323 071	**709 305 680**	1 54 323 071	226.700
675	**709 305 281**	1 54 323 071	**709 305 681**	1 54 323 071	235.500
700	**709 305 282**	1 54 323 071	**709 305 682**	1 54 323 071	251.000
750	**709 305 285**	1 54 323 071	**709 305 685**	1 54 323 071	264.700
800	**709 305 283**	1 54 323 071	**709 305 683**	1 54 323 071	282.200
825	**709 305 284**	1 54 323 071	**709 305 684**	1 54 323 071	292.700

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	206 - 250	170	84	3xM12	16	8
65	215 - 261	191	84	3xM12	16	8
80	218 - 262	210	84	3xM12	16	8
100	228 - 280	241	90	3xM16	16	8
125	240 - 286	270	90	4xM16	16	8
150	278 - 352	312	110	4xM16	16	8
200	303 - 377	371	110	6xM16	16	8
225	350 - 426	415	125	6xM20	16	8
250	377 - 462	445	130	6xM20	16	8
300	384 - 460	495	130	8xM20	16	8
350	380 - 470	534	130	8xM20	16*	8*
400	380 - 470	574	135	10xM20	16*	8*
425	460 - 535	623	160	10xM20	10	5
450	460 - 535	641	160	10xM20	10	5
475	460 - 535	672	160	10xM20	10	5
500	460 - 535	691	160	10xM20	10	5
550	460 - 535	739	160	12xM20	10	5
600	480 - 555	796	170	14xM20	10	5
625	657 - 717	860	210	14xM20	10	-
675	660 - 720	895	210	14xM20	10	-
700	667 - 727	940	210	16xM20	10	-
750	667 - 727	970	210	16xM20	10	-
800	667 - 727	1030	210	20xM20	10	-
825	667 - 727	1070	210	20xM20	10	-

DN900 - DN1025

New sizes will be added	Range	Code
DN900 x DN900 A4 EPDM	899 - 931	**709305679**
DN900 x DN900 A4 NBR	899 - 931	**709305279**
DN925 x DN925 A4 EPDM	939 - 971	**709305686**
DN925 x DN925 A4 NBR	939 - 971	**709305286**
DN1000 x DN1000 A4 EPDM	994 - 1026	**709305687**
DN1000 x DN1000 A4 NBR	994 - 1026	**709305287**
DN1025 x DN1025 A4 EPDM	1042 - 1074	**709305688**
DN1025 x DN1025 A4 NBR	1042 - 1074	**709305288**





MULTI/JOINT® 3057 Plus Wide Range
Flange adaptor, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Please note, when using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of the insert stiffener MJ DN625 - DN800 (see accessories) is mandatory
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minmum insertion depth
DN625 - DN1025 for water applications only

DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF
50	46 - 71	50	PN16	**709 355 210**	1 54 323 061
65	63 - 90	60/65	PN16	**709 355 212**	1 54 323 061
80	84 - 105	80	PN16	**709 355 214**	1 54 323 061
100	104 - 132	100	PN16	**709 355 216**	1 54 323 061
125	132 - 155	125	PN16	**709 355 218**	1 54 323 061
150	154 - 192	150	PN16	**709 355 220**	1 54 323 061
200	192 - 232	200	PN10/PN16	**709 355 224**	1 54 323 061
250	267 - 310	250	PN10/PN16	**709 355 228**	1 54 323 061
300	315 - 356	300	PN10/PN16	**709 355 232**	1 54 323 061
350	352 - 393	350	PN10/PN16	**709 355 236**	1 54 323 061
400	392 - 433	400	PN10/PN16	**709 355 238**	1 54 323 061
450	450 - 482	450	PN10/PN16	**709 355 272**	1 54 323 071
500	500 - 532	500	PN10/PN16	**709 355 274**	1 54 323 071
600	605 - 637	600	PN10/PN16	**709 355 278**	1 54 323 071
700	709 - 741	700	PN10/PN16		
800	799 - 831	800	PN10/PN16		

DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
50	**709 355 610**	1 54 323 061	4.700	**709 355 010**	1 54 323 061
65	**709 355 612**	1 54 323 061	5.700	**709 355 012**	1 54 323 061
80	**709 355 614**	1 54 323 061	6.800	**709 355 014**	1 54 323 061
100	**709 355 616**	1 54 323 061	8.000	**709 355 016**	1 54 323 061
125	**709 355 618**	1 54 323 061	10.200	**709 355 018**	1 54 323 061
150	**709 355 620**	1 54 323 061	14.200	**709 355 020**	1 54 323 061
200	**709 355 624**	1 54 323 061	21.600	**709 355 024**	1 54 323 061
250	**709 355 628**	1 54 323 061	31.600	**709 355 028**	1 54 323 061
300	**709 355 632**	1 54 323 061	44.100	**709 355 032**	1 54 323 061
350	**709 355 636**	1 54 323 061	51.000	**709 355 036**	1 54 323 061
400	**709 355 638**	1 54 323 061	62.100	**709 355 038**	1 54 323 061
450	**709 355 672**	1 54 323 071	77.300	**709 355 072**	1 54 323 071
500	**709 355 674**	1 54 323 071	91.600	**709 355 074**	1 54 323 071
600	**709 355 678**	1 54 323 071	118.200	**709 355 078**	1 54 323 071
700				**709 355 282**	1 54 323 071
800				**709 355 283**	1 54 323 071

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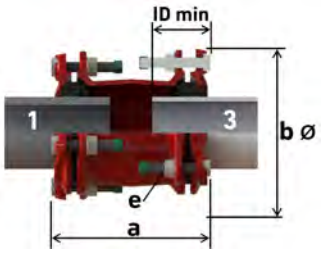
DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50	**709 355 310**	1 54 323 061	4.700
65	**709 355 312**	1 54 323 061	5.700
80	**709 355 314**	1 54 323 061	6.800
100	**709 355 316**	1 54 323 061	8.000
125	**709 355 318**	1 54 323 061	10.200
150	**709 355 320**	1 54 323 061	14.200
200	**709 355 324**	1 54 323 061	21.600
250	**709 355 328**	1 54 323 061	31.600
300	**709 355 332**	1 54 323 061	44.100
350	**709 355 336**	1 54 323 061	51.000
400	**709 355 338**	1 54 323 061	62.100
450	**709 355 372**	1 54 323 071	77.300
500	**709 355 374**	1 54 323 071	91.600
600	**709 355 378**	1 54 323 071	118.200
700	**709 355 682**	1 54 323 071	187.000
800	**709 355 683**	1 54 323 071	216.200

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50	165 - 187	170	84	3xM12	16	8	4
65	170 - 193	191	84	3xM12	16	8	4
80	170 - 192	210	84	3xM12	16	8	8
100	173 - 199	241	90	3xM16	16	8	8
125	192 - 215	270	90	4xM16	16	8	8
150	211 - 248	312	110	4xM16	16	8	8
200	221 - 258	371	110	6xM16	16	8	8/12
250	264 - 307	445	130	6xM20	16	8	12
300	293 - 331	495	130	8xM20	16	8	12
350	291 - 336	534	130	8xM20	16*	8*	16
400	297 - 342	580	135	10xM20	16*	8*	16
450	330 - 367	641	160	10xM20	10	5	20
500	332 - 369	715	160	10xM20	10	5	20
600	339 - 377	840	170	14xM20	10	5	20
700	434 - 464	940	210	16xM20	10	-	24
800	431 - 461	1030	210	20xM20	10	-	24

DN900 - DN1025

New sizes will be added	Range	Code
DN900 x DN900FL A4 EPDM	899 - 931	**709355684**
DN900 x DN900FL A4 NBR	899 - 931	**709355284**
DN1000 x DN1000FL A4 EPDM	994 - 1026	**709355685**
DN1000 x DN1000FL A4 NBR	994 - 1026	**709355285**



MULTI/JOINT® 3107 Plus
Wide range reduced coupling, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Please note, when using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of the insert stiffener MJ DN625 - DN800 (see accessories) is mandatory
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth

DN625 - DN1025 for water applications only

DN-DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	PF
50 - 65	46 - 71	63 - 90	**709 405 218**	1 54 323 061
65 - 80	63 - 90	84 - 105	**709 405 220**	1 54 323 061
80 - 100	84 - 105	104 - 132	**709 405 224**	1 54 323 061
100 - 125	104 - 132	132 - 155	**709 405 232**	1 54 323 061
100 - 150	104 - 132	154 - 192	**709 405 236**	1 54 323 061
125 - 150	132 - 155	154 - 192	**709 405 238**	1 54 323 061
150 - 200	154 - 192	192 - 232	**709 405 248**	1 54 323 061
200 - 225	192 - 232	230 - 268	**709 405 278**	1 54 323 061
200 - 250	192 - 232	267 - 310	**709 405 281**	1 54 323 061
225 - 250	230 - 268	267 - 310	**709 405 282**	1 54 323 061
250 - 300	267 - 310	315 - 356	**709 405 286**	1 54 323 061
300 - 350	315 - 356	352 - 393	**709 405 288**	1 54 323 061
300 - 400	315 - 356	392 - 433	**709 405 289**	1 54 323 061
350 - 400	352 - 393	392 - 433	**709 405 290**	1 54 323 061
400 - 425	392 - 433	432 - 464	**709 405 293**	1 54 323 071
400 - 450	392 - 433	450 - 482	**709 405 292**	1 54 323 071
425 - 475	432 - 464	481 - 513	**709 405 295**	1 54 323 071
450 - 500	450 - 482	500 - 532	**709 405 294**	1 54 323 071
500 - 550	500 - 532	548 - 580	**709 405 296**	1 54 323 071
550 - 600	548 - 580	605 - 637	**709 405 297**	1 54 323 071
600 - 625	605 - 637	630 - 662		
600 - 675	605 - 637	665 - 697		
600 - 700	605 - 637	709 - 741		
750 - 800	745 - 777	799 - 831		

DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
50 - 65	**709 405 618**	1 54 323 061	5.900	**709 405 018**	1 54 323 061
65 - 80	**709 405 620**	1 54 323 061	6.700	**709 405 020**	1 54 323 061
80 - 100	**709 405 624**	1 54 323 061	8.000	**709 405 024**	1 54 323 061
100 - 125	**709 405 632**	1 54 323 061	10.600	**709 405 032**	1 54 323 061
100 - 150	**709 405 636**	1 54 323 061	14.100	**709 405 036**	1 54 323 061
125 - 150	**709 405 638**	1 54 323 061	15.500	**709 405 038**	1 54 323 061
150 - 200	**709 405 648**	1 54 323 061	22.100	**709 405 048**	1 54 323 061
200 - 225	**709 405 678**	1 54 323 061	34.400	**709 405 078**	1 54 323 061
200 - 250	**709 405 681**	1 54 323 061	37.100	**709 405 081**	1 54 323 061
225 - 250	**709 405 682**	1 54 323 061	41.700	**709 405 082**	1 54 323 061
250 - 300	**709 405 686**	1 54 323 061	50.500	**709 405 086**	1 54 323 061
300 - 350	**709 405 688**	1 54 323 061	62.100	**709 405 088**	1 54 323 061

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DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
300 - 400	**709 405 689**	1 54 323 061	69.200	**709 405 089**	1 54 323 061
350 - 400	**709 405 690**	1 54 323 061	71.600	**709 405 090**	1 54 323 061
400 - 425	**709 405 693**	1 54 323 071	85.700	**709 405 093**	1 54 323 071
400 - 450	**709 405 692**	1 54 323 071	86.800	**709 405 092**	1 54 323 071
425 - 475	**709 405 695**	1 54 323 071	101.000	**709 405 095**	1 54 323 071
450 - 500	**709 405 694**	1 54 323 071	106.000	**709 405 094**	1 54 323 071
500 - 550	**709 405 696**	1 54 323 071	114.700	**709 405 096**	1 54 323 071
550 - 600	**709 405 697**	1 54 323 071	131.200	**709 405 097**	1 54 323 071
600 - 625				**709 405 298**	1 54 323 071
600 - 675				**709 405 299**	1 54 323 071
600 - 700				**709 405 300**	1 54 323 071
750 - 800				**709 405 291**	1 54 323 071

DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 65	**709 405 318**	1 54 323 061	5.900
65 - 80	**709 405 320**	1 54 323 061	6.700
80 - 100	**709 405 324**	1 54 323 061	8.000
100 - 125	**709 405 332**	1 54 323 061	10.600
100 - 150	**709 405 336**	1 54 323 061	14.100
125 - 150	**709 405 338**	1 54 323 061	15.500
150 - 200	**709 405 348**	1 54 323 061	22.100
200 - 225	**709 405 378**	1 54 323 061	34.400
200 - 250	**709 405 381**	1 54 323 061	37.100
225 - 250	**709 405 382**	1 54 323 061	41.700
250 - 300	**709 405 386**	1 54 323 061	50.500
300 - 350	**709 405 388**	1 54 323 061	62.100
300 - 400	**709 405 389**	1 54 323 061	69.200
350 - 400	**709 405 390**	1 54 323 061	71.600
400 - 425	**709 405 393**	1 54 323 071	85.700
400 - 450	**709 405 392**	1 54 323 071	86.800
425 - 475	**709 405 395**	1 54 323 071	101.000
450 - 500	**709 405 394**	1 54 323 071	106.000
500 - 550	**709 405 396**	1 54 323 071	114.700
550 - 600	**709 405 397**	1 54 323 071	131.200
600 - 625	**709 405 698**	1 54 323 071	196.300
600 - 675	**709 405 699**	1 54 323 071	195.600
600 - 700	**709 405 700**	1 54 323 071	218.000
750 - 800	**709 405 691**	1 54 323 071	267.000

DN-DN (mm)	a (mm)	b (mm)	ID min. side 1 (mm)	ID min. side 3 (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50 - 65	209 - 254	191	84	84	3xM12/3xM12	16	8
65 - 80	223 - 267	210	84	84	3xM12/3xM12	16	8
80 - 100	222 - 270	241	84	90	3xM12/3xM16	16	8
100 - 125	228 - 277	270	90	90	3xM16/4xM16	16	8
100 - 150	286 - 353	312	90	110	3xM16/4xM16	16	8
125 - 150	286 - 346	312	90	110	4xM16/4xM16	16	8
150 - 200	290 - 364	371	110	110	4xM16/6xM16	16	8
200 - 225	349 - 420	415	110	125	6xM16/6xM20	16	8
200 - 250	364 - 443	445	110	130	6xM16/6xM20	16	8
225 - 250	368 - 450	445	125	130	6xM20/6xM20	16	8
250 - 300	405 - 486	495	130	130	6xM20/8xM20	16	8
300 - 350	443 - 527	534	130	130	8xM20/8xM20	16*	8*
300 - 400	469 - 552	574	130	135	8xM20/10xM20	16*	8*
350 - 400	472 - 561	574	130	135	8xM20/10xM20	16*	8*
400 - 425	437 - 520	623	135	160	10xM20/10xM20	10	5
400 - 450	437 - 520	641	135	160	10xM20/10xM20	10	5
425 - 475	483 - 558	672	160	160	10xM20/10xM20	10	5
450 - 500	483 - 558	691	160	160	10xM20/10xM20	10	5
500 - 550	478 - 553	739	160	160	10xM20/12xM20	10	5
550 - 600	488 - 563	796	160	170	12xM20/14xM20	10	5

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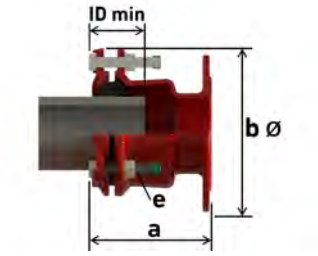
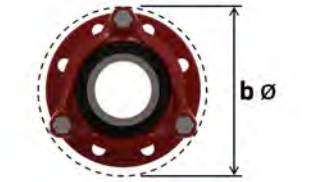
DN-DN (mm)	a (mm)	b (mm)	ID min. side 1 (mm)	ID min. side 3 (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
600 - 625	576 - 644	860	170	210	14xM20/14xM20	10	-
600 - 675	582 - 650	895	170	210	14xM20/14xM20	10	-
600 - 700	594 - 662	940	170	210	14xM20/16xM20	10	-
750 - 800	667 - 727	1030	210	210	16xM20/20xM20	10	-

New sizes will be added	Range	Code
DN900 x DN925 A4 EPDM	899 - 931 x 939 - 971	**709405701**
DN900 x DN925 A4 NBR	899 - 931 x 939 - 971	**709405301**
DN1000 x DN1025 A4 EPDM	994 - 1026 x 1042 - 1074	**709405702**
DN1000 x DN1025 A4 NBR	994 - 1026 x 1042 - 1074	**709405302**





MULTI/JOINT® 3157 Plus Wide Range Reduced flange adaptor, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Please note, when using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of the insert stiffener MJ DN625 - DN800 (see accessories) is mandatory
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth

DN625 - DN1025 for water applications only

DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF
50 - 40	46 - 71	40	PN16	**709 455 208**	1 54 323 061
65 - 80	63 - 90	80	PN16	**709 455 218**	1 54 323 061
100 - 80	104 - 132	80	PN16	**709 455 224**	1 54 323 061
125 - 100	132 - 155	100	PN16	**709 455 232**	1 54 323 061
125 - 150	132 - 155	150	PN16	**709 455 238**	1 54 323 061
150 - 100	154 - 192	100	PN16	**709 455 236**	1 54 323 061
200 - 150	192 - 232	150	PN16	**709 455 239**	1 54 323 061
225 - 200	230 - 268	200	PN10/PN16	**709 455 278**	1 54 323 061
225 - 250	230 - 268	250	PN10/PN16	**709 455 280**	1 54 323 061
300 - 250	315 - 356	250	PN10/PN16	**709 455 286**	1 54 323 061
350 - 300	352 - 393	300	PN10/PN16	**709 455 284**	1 54 323 061
425 - 400	432 - 464	400	PN10/PN16	**709 455 288**	1 54 323 071
450 - 400	450 - 482	400	PN10/PN16	**709 455 292**	1 54 323 071
475 - 400	481 - 513	400	PN10/PN16	**709 455 290**	1 54 323 071
550 - 500	548 - 580	500	PN10/PN16	**709 355 276**	1 54 323 071
625 - 600	630 - 662	600	PN10/PN16		
675 - 600	665 - 697	600	PN10/PN16		
825 - 800	837 - 869	800	PN10/PN16		

DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
50 - 40	**709 455 608**	1 54 323 061	4.400	**709 455 008**	1 54 323 061
65 - 80	**709 455 618**	1 54 323 061	5.900	**709 455 018**	1 54 323 061
100 - 80	**709 455 624**	1 54 323 061	7.800	**709 455 024**	1 54 323 061
125 - 100	**709 455 632**	1 54 323 061	9.800	**709 455 032**	1 54 323 061
125 - 150	**709 455 638**	1 54 323 061	11.600	**709 455 038**	1 54 323 061
150 - 100	**709 455 636**	1 54 323 061	12.800	**709 455 036**	1 54 323 061
200 - 150	**709 455 639**	1 54 323 061	20.500	**709 455 039**	1 54 323 061
225 - 200	**709 455 678**	1 54 323 061	27.800	**709 455 078**	1 54 323 061
225 - 250	**709 455 680**	1 54 323 061	26.500	**709 455 080**	1 54 323 061
300 - 250	**709 455 686**	1 54 323 061	42.100	**709 455 086**	1 54 323 061
350 - 300	**709 455 684**	1 54 323 061	48.000	**709 455 084**	1 54 323 061
425 - 400	**709 455 688**	1 54 323 071	72.200	**709 455 088**	1 54 323 071
450 - 400	**709 455 692**	1 54 323 071	75.900	**709 455 092**	1 54 323 071
475 - 400	**709 455 690**	1 54 323 071	81.000	**709 455 090**	1 54 323 071

table continued on the next page

DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
550 - 500	**709 355 676**	1 54 323 071	99.000	**709 355 076**	1 54 323 071
625 - 600				**709 455 295**	1 54 323 071
675 - 600				**709 455 296**	1 54 323 071
825 - 800				**709 455 297**	1 54 323 071

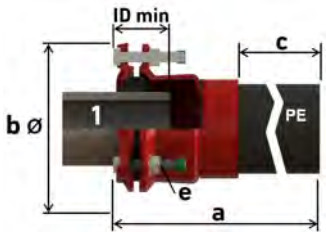
DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 40	**709 455 308**	1 54 323 061	4.400
65 - 80	**709 455 318**	1 54 323 061	5.900
100 - 80	**709 455 324**	1 54 323 061	7.800
125 - 100	**709 455 332**	1 54 323 061	9.800
125 - 150	**709 455 338**	1 54 323 061	11.600
150 - 100	**709 455 336**	1 54 323 061	12.800
200 - 150	**709 455 339**	1 54 323 061	20.500
225 - 200	**709 455 378**	1 54 323 061	27.800
225 - 250	**709 455 380**	1 54 323 061	26.500
300 - 250	**709 455 386**	1 54 323 061	42.100
350 - 300	**709 455 384**	1 54 323 061	48.000
425 - 400	**709 455 388**	1 54 323 071	72.200
450 - 400	**709 455 392**	1 54 323 071	75.900
475 - 400	**709 455 390**	1 54 323 071	81.000
550 - 500	**709 355 376**	1 54 323 071	99.000
625 - 600	**709 455 695**	1 54 323 071	174.100
675 - 600	**709 455 696**	1 54 323 071	189.500
825 - 800	**709 455 697**	1 54 323 071	228.200

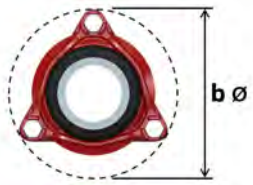
DN-DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50 - 40	176 - 198	170	84	3xM12	16	8	4
65 - 80	170 - 193	200	84	3xM12	16	8	8
100 - 80	182 - 208	241	90	3xM16	16	8	8
125 - 100	187 - 210	270	90	4xM16	16	8	8
125 - 150	187 - 210	285	90	4xM16	16	8	8
150 - 100	236 - 273	312	110	4xM16	16	8	8
200 - 150	246 - 283	371	110	6xM16	16	8	8
225 - 200	250 - 288	415	125	6xM20	16	8	8
225 - 250	216 - 254	415	125	6xM20	16	8	12
300 - 250	330 - 368	495	130	8xM20	16	8	12
350 - 300	302 - 347	580	130	8xM20	16*	8*	12
425 - 400	330 - 367	623	160	10xM20	10	5	16
450 - 400	330 - 367	641	160	10xM20	10	5	16
475 - 400	360 - 397	672	160	10xM20	10	5	16
550 - 500	330 - 367	739	160	12xM20	10	5	20
625 - 600	446 - 476	860	210	14xM20	10	-	20
675 - 600	509 - 539	895	210	14xM20	10	-	20
825 - 800	455 - 485	1070	210	20xM20	10	-	24

DN900 - DN1025

New sizes will be added	Range	Code
DN925 x DN900FL A4 EPDM	939 - 971	**709455698**
DN925 x DN900FL A4 NBR	939 - 971	**709455298**
DN1025 x DN1000FL A4 EPDM	1042 - 1074	**709455699**
DN1025 x DN1000FL A4 NBR	1042 - 1074	**709455299**

PF 1 54 323 061





MULTI/JOINT® 3067 Plus Wide Range
PE adaptor, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material (MULTI/JOINT® 3067 part)
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- PE: PE100 SDR11
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

Note:

ID min. = minimum insertion depth

DN (mm)	Range 1 (mm)	PE outlet (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
50	46 - 71	50	**709 365 209**	**709 365 609**	3.400
50	46 - 71	63	**709 365 210**	**709 365 610**	3.700
65	63 - 90	63	**709 365 211**	**709 365 611**	4.700
65	63 - 90	75	**709 365 212**	**709 365 612**	4.900
80	84 - 105	90	**709 365 214**	**709 365 614**	6.000
80	84 - 105	110	**709 365 215**	**709 365 615**	6.500
100	104 - 132	90	**709 465 216**	**709 465 616**	6.900
100	104 - 132	110	**709 365 216**	**709 365 616**	7.900
100	104 - 132	125	**709 465 217**	**709 465 617**	8.800
125	132 - 155	110	**709 465 218**	**709 465 618**	10.700
125	132 - 155	125	**709 365 218**	**709 365 618**	11.000
125	132 - 155	140	**709 465 219**	**709 465 619**	11.400
125	132 - 155	160	**709 465 221**	**709 465 621**	13.000
150	154 - 192	160	**709 365 220**	**709 365 620**	15.900
150	154 - 192	180	**709 465 220**	**709 465 620**	17.000
200	192 - 232	200	**709 365 224**	**709 365 624**	22.500
200	192 - 232	225	**709 465 224**	**709 465 624**	27.100
225	230 - 268	250	**709 365 225**	**709 365 625**	36.600
250	267 - 310	250	**709 365 228**	**709 365 628**	40.500
250	267 - 310	280	**709 465 228**	**709 465 628**	43.000
300	315 - 356	315	**709 365 232**	**709 365 632**	58.400

DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	**709 365 009**	**709 365 309**	3.400
50	**709 365 010**	**709 365 310**	3.700
65	**709 365 011**	**709 365 311**	4.700
65	**709 365 012**	**709 365 312**	4.900
80	**709 365 014**	**709 365 314**	6.000
80	**709 365 015**	**709 365 315**	6.500
100	**709 465 016**	**709 465 316**	6.900
100	**709 365 016**	**709 365 316**	7.900
100	**709 465 017**	**709 465 317**	8.800
125	**709 465 018**	**709 465 318**	10.700
125	**709 365 018**	**709 365 318**	11.000
125	**709 465 019**	**709 465 319**	11.400
125	**709 465 021**	**709 465 321**	13.000
150	**709 365 020**	**709 365 320**	15.900
150	**709 465 020**	**709 465 320**	17.000
200	**709 365 024**	**709 365 324**	22.500
200	**709 465 024**	**709 465 324**	27.100

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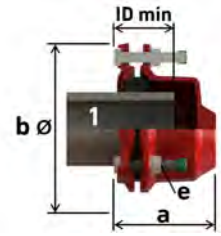
PF 1 54 323 061

DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
225	**709 365 025**	**709 365 325**	36.600
250	**709 365 028**	**709 365 328**	40.500
250	**709 465 028**	**709 465 328**	43.000
300	**709 365 032**	**709 365 332**	58.400

DN (mm)	a (mm)	b (mm)	c (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	615 - 637	170	470.0	84	3xM12	16	8
50	615 - 637	170	470.0	84	3xM12	16	8
65	621 - 644	191	468.0	84	3xM12	16	8
65	621 - 644	191	468.0	84	3xM12	16	8
80	622 - 644	210	463.0	84	3xM12	16	8
80	622 - 644	210	463.0	84	3xM12	16	8
100	624 - 650	241	452.0	90	3xM16	16	8
100	624 - 650	241	461.0	90	3xM16	16	8
100	628 - 654	241	451.0	90	3xM16	16	8
125	637 - 660	270	452.0	90	4xM16	16	8
125	637 - 660	270	452.0	90	4xM16	16	8
125	635 - 658	270	450.0	90	4xM16	16	8
125	507 - 530	270	321.0	90	4xM16	16	8
150	657 - 694	312	445.0	110	4xM16	16	8
150	655 - 692	312	438.0	110	4xM16	16	8
200	671 - 708	371	434.0	110	6xM16	16	8
200	671 - 708	371	431.0	110	6xM16	16	8
225	692 - 730	415	420.0	125	6xM20	16	8
250	720 - 763	445	420.0	130	6xM20	16	8
250	716 - 759	445	417.0	130	6xM20	16	8
300	747 - 785	495	410.0	130	8xM20	16	8

PF 1 54 323 061



MULTI/JOINT® 3207 Plus Wide Range end cap blind, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

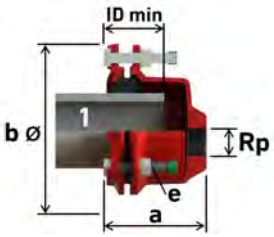
ID min. = minimum insertion depth

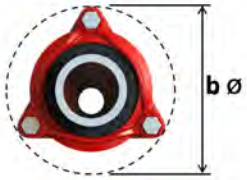
DN (mm)	Range 1 (mm)	NBR / A2 Code	Weight (kg)	EPDM / A2 Code	Weight (kg)
50	46 - 71	**709 375 210**	3.200	**709 375 610**	3.200
65	63 - 90	**709 375 212**	4.400	**709 375 612**	4.400
80	84 - 105	**709 375 214**	5.000	**709 375 614**	5.000
100	104 - 132	**709 375 216**	5.900	**709 375 616**	5.900
125	132 - 155	**709 375 218**	7.900	**709 375 618**	7.900
150	154 - 192	**709 375 220**	10.900	**709 375 620**	10.900
200	192 - 232	**709 375 224**	17.500	**709 375 624**	17.500
225	230 - 268	**709 375 226**	23.100	**709 375 626**	23.100
250	267 - 310	**709 375 228**	27.700	**709 375 628**	27.700
300	315 - 356	**709 375 232**	34.100	**709 375 632**	34.100
400	392 - 433	**709 375 234**	45.100	**709 375 634**	45.100

DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	**709 375 010**	**709 375 310**	3.200
65	**709 375 012**	**709 375 312**	4.400
80	**709 375 014**	**709 375 314**	5.000
100	**709 375 016**	**709 375 316**	5.900
125	**709 375 018**	**709 375 318**	7.900
150	**709 375 020**	**709 375 320**	10.900
200	**709 375 024**	**709 375 324**	17.500
225	**709 375 026**	**709 375 326**	23.100
250	**709 375 028**	**709 375 328**	27.700
300	**709 375 032**	**709 375 332**	34.100
400	**709 375 034**	**709 375 334**	45.100

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	125 - 147	170	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
100	143 - 169	241	90	3xM16	16	8
125	149 - 172	270	90	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
200	183 - 220	371	110	6xM16	16	8
225	216 - 254	415	125	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
300	238 - 276	495	130	8xM20	16	8
400	261 - 303	580	135	10xM20	16*	8*

MULTI/JOINT® 3207 Plus Wide Range
end cap threaded, restraint, Uni/Fiksers/A2





Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth

DN (mm)	Thread Type	Size (inch)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
50	Rp	¾	46 - 71	**709 385 204**	**709 385 604**	3.100
50	Rp	1	46 - 71	**709 385 205**	**709 385 605**	3.100
50	Rp	1 ¼	46 - 71	**709 385 206**	**709 385 606**	3.100
50	Rp	1 ½	46 - 71	**709 385 207**	**709 385 607**	3.100
50	Rp	2	46 - 71	**709 385 208**	**709 385 608**	3.100
65	Rp	¾	63 - 90	**709 385 209**	**709 385 609**	4.800
65	Rp	1	63 - 90	**709 385 210**	**709 385 610**	4.800
65	Rp	1 ¼	63 - 90	**709 385 211**	**709 385 611**	4.800
65	Rp	1 ½	63 - 90	**709 385 212**	**709 385 612**	4.800
65	Rp	2	63 - 90	**709 385 213**	**709 385 613**	4.800
80	Rp	¾	84 - 105	**709 385 214**	**709 385 614**	6.500
80	Rp	1	84 - 105	**709 385 215**	**709 385 615**	6.500
80	Rp	1 ¼	84 - 105	**709 385 216**	**709 385 616**	6.500
80	Rp	1 ½	84 - 105	**709 385 217**	**709 385 617**	6.500
80	Rp	2	84 - 105	**709 385 218**	**709 385 618**	6.500
100	Rp	¾	104 - 132	**709 385 219**	**709 385 619**	8.000
100	Rp	1	104 - 132	**709 385 220**	**709 385 620**	8.000
100	Rp	1 ¼	104 - 132	**709 385 221**	**709 385 621**	8.000
100	Rp	1 ½	104 - 132	**709 385 222**	**709 385 622**	8.000
100	Rp	2	104 - 132	**709 385 223**	**709 385 623**	8.000
125	Rp	¾	132 - 155	**709 385 224**	**709 385 624**	7.900
125	Rp	1	132 - 155	**709 385 225**	**709 385 625**	7.900
125	Rp	1 ¼	132 - 155	**709 385 226**	**709 385 626**	7.900
125	Rp	1 ½	132 - 155	**709 385 227**	**709 385 627**	7.900
125	Rp	2	132 - 155	**709 385 228**	**709 385 628**	7.900
150	Rp	¾	154 - 192	**709 385 229**	**709 385 629**	10.700
150	Rp	1	154 - 192	**709 385 230**	**709 385 630**	10.700
150	Rp	1 ¼	154 - 192	**709 385 231**	**709 385 631**	10.700
150	Rp	1 ½	154 - 192	**709 385 232**	**709 385 632**	10.700
150	Rp	2	154 - 192	**709 385 233**	**709 385 633**	10.700
200	Rp	¾	192 - 232	**709 385 234**	**709 385 634**	16.800
200	Rp	1	192 - 232	**709 385 235**	**709 385 635**	16.800
200	Rp	1 ¼	192 - 232	**709 385 236**	**709 385 636**	16.800
200	Rp	1 ½	192 - 232	**709 385 237**	**709 385 637**	16.800
200	Rp	2	192 - 232	**709 385 238**	**709 385 638**	16.800
225	Rp	¾	230 - 268	**709 385 249**	**709 385 649**	27.100
225	Rp	1	230 - 268	**709 385 250**	**709 385 650**	27.100
225	Rp	1 ¼	230 - 268	**709 385 251**	**709 385 651**	27.100
225	Rp	1 ½	230 - 268	**709 385 252**	**709 385 652**	27.100
225	Rp	2	230 - 268	**709 385 253**	**709 385 653**	27.100
250	Rp	¾	267 - 310	**709 385 239**	**709 385 639**	37.600
250	Rp	1	267 - 310	**709 385 240**	**709 385 640**	37.600

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PF 1 54 323 061

DN (mm)	Thread Type	Size (inch)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
250	Rp	1 ¼	267 - 310	**709 385 241**	**709 385 641**	37.600
250	Rp	1 ½	267 - 310	**709 385 242**	**709 385 642**	37.600
250	Rp	2	267 - 310	**709 385 243**	**709 385 643**	37.600
300	Rp	¾	315 - 356	**709 385 244**	**709 385 644**	47.700
300	Rp	1	315 - 356	**709 385 245**	**709 385 645**	47.700
300	Rp	1 ¼	315 - 356	**709 385 246**	**709 385 646**	47.700
300	Rp	1 ½	315 - 356	**709 385 247**	**709 385 647**	47.700
300	Rp	2	315 - 356	**709 385 248**	**709 385 648**	47.700
400	Rp	¾	392 - 433	**709 385 254**	**709 385 654**	45.100
400	Rp	1	392 - 433	**709 385 255**	**709 385 655**	45.100
400	Rp	1 ¼	392 - 433	**709 385 256**	**709 385 656**	45.100
400	Rp	1 ½	392 - 433	**709 385 257**	**709 385 657**	45.100
400	Rp	2	392 - 433	**709 385 258**	**709 385 658**	45.100

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8

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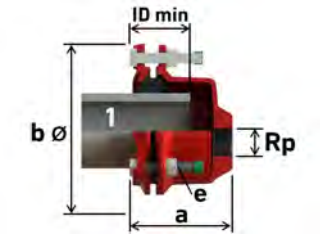
PF 1 54 323 061

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*

PF 1 54 323 061

MULTI/JOINT® 3207 Plus Wide Range
end cap threaded, restraint, Uni/Fiksers/A4



Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth

DN (mm)	Thread Type	Size (inch)	Range 1 (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	Rp	¾	46 - 71	**709 385 004**	**709 385 304**	3.100
50	Rp	1	46 - 71	**709 385 005**	**709 385 305**	3.100
50	Rp	1 ¼	46 - 71	**709 385 006**	**709 385 306**	3.100
50	Rp	1 ½	46 - 71	**709 385 007**	**709 385 307**	3.100
50	Rp	2	46 - 71	**709 385 008**	**709 385 308**	3.100
65	Rp	¾	63 - 90	**709 385 009**	**709 385 309**	4.800
65	Rp	1	63 - 90	**709 385 010**	**709 385 310**	4.800
65	Rp	1 ¼	63 - 90	**709 385 011**	**709 385 311**	4.800
65	Rp	1 ½	63 - 90	**709 385 012**	**709 385 312**	4.800
65	Rp	2	63 - 90	**709 385 013**	**709 385 313**	4.800
80	Rp	¾	84 - 105	**709 385 014**	**709 385 314**	6.500
80	Rp	1	84 - 105	**709 385 015**	**709 385 315**	6.500
80	Rp	1 ¼	84 - 105	**709 385 016**	**709 385 316**	6.500
80	Rp	1 ½	84 - 105	**709 385 017**	**709 385 317**	6.500
80	Rp	2	84 - 105	**709 385 018**	**709 385 318**	6.500
100	Rp	¾	104 - 132	**709 385 019**	**709 385 319**	8.000
100	Rp	1	104 - 132	**709 385 020**	**709 385 320**	8.000
100	Rp	1 ¼	104 - 132	**709 385 021**	**709 385 321**	8.000
100	Rp	1 ½	104 - 132	**709 385 022**	**709 385 322**	8.000
100	Rp	2	104 - 132	**709 385 023**	**709 385 323**	8.000
125	Rp	¾	132 - 155	**709 385 024**	**709 385 324**	7.900
125	Rp	1	132 - 155	**709 385 025**	**709 385 325**	7.900
125	Rp	1 ¼	132 - 155	**709 385 026**	**709 385 326**	7.900
125	Rp	1 ½	132 - 155	**709 385 027**	**709 385 327**	7.900
125	Rp	2	132 - 155	**709 385 028**	**709 385 328**	7.900
150	Rp	¾	154 - 192	**709 385 029**	**709 385 329**	10.700
150	Rp	1	154 - 192	**709 385 030**	**709 385 330**	10.700
150	Rp	1 ¼	154 - 192	**709 385 031**	**709 385 331**	10.700
150	Rp	1 ½	154 - 192	**709 385 032**	**709 385 332**	10.700
150	Rp	2	154 - 192	**709 385 033**	**709 385 333**	10.700
200	Rp	¾	192 - 232	**709 385 034**	**709 385 334**	16.800
200	Rp	1	192 - 232	**709 385 035**	**709 385 335**	16.800
200	Rp	1 ¼	192 - 232	**709 385 036**	**709 385 336**	16.800
200	Rp	1 ½	192 - 232	**709 385 037**	**709 385 337**	16.800
200	Rp	2	192 - 232	**709 385 038**	**709 385 338**	16.800
225	Rp	¾	230 - 268	**709 385 049**	**709 385 349**	27.100
225	Rp	1	230 - 268	**709 385 050**	**709 385 350**	27.100
225	Rp	1 ¼	230 - 268	**709 385 051**	**709 385 351**	27.100
225	Rp	1 ½	230 - 268	**709 385 052**	**709 385 352**	27.100
225	Rp	2	230 - 268	**709 385 053**	**709 385 353**	27.100
250	Rp	¾	267 - 310	**709 385 039**	**709 385 339**	37.600
250	Rp	1	267 - 310	**709 385 040**	**709 385 340**	37.600

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PF 1 54 323 061

DN (mm)	Thread Type	Size (inch)	Range 1 (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
250	Rp	1 ¼	267 - 310	**709 385 041**	**709 385 341**	37.600
250	Rp	1 ½	267 - 310	**709 385 042**	**709 385 342**	37.600
250	Rp	2	267 - 310	**709 385 043**	**709 385 343**	37.600
300	Rp	¾	315 - 356	**709 385 044**	**709 385 344**	47.700
300	Rp	1	315 - 356	**709 385 045**	**709 385 345**	47.700
300	Rp	1 ¼	315 - 356	**709 385 046**	**709 385 346**	47.700
300	Rp	1 ½	315 - 356	**709 385 047**	**709 385 347**	47.700
300	Rp	2	315 - 356	**709 385 048**	**709 385 348**	47.700
400	Rp	¾	392 - 433	**709 385 054**	**709 385 354**	45.100
400	Rp	1	392 - 433	**709 385 055**	**709 385 355**	45.100
400	Rp	1 ¼	392 - 433	**709 385 056**	**709 385 356**	45.100
400	Rp	1 ½	392 - 433	**709 385 057**	**709 385 357**	45.100
400	Rp	2	392 - 433	**709 385 058**	**709 385 358**	45.100

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
50	125 - 147	170	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
65	133 - 156	191	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
80	135 - 157	210	84	3xM12	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
100	143 - 169	241	90	3xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
125	149 - 172	270	90	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
150	169 - 206	312	110	4xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
200	183 - 220	371	110	6xM16	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
225	216 - 254	415	125	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
250	225 - 268	445	130	6xM20	16	8
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8

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PF 1 54 323 061

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8
300	238 - 276	495	130	8xM20	16	8
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*
400	261 - 303	580	135	10xM20	16*	8*

PF 1 54 323 061

MULTI/JOINT® 3087 Plus Wide Range
Spigot end, restraint, Uni/Fiksers

Model:

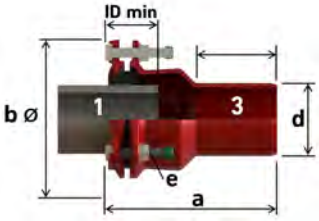
- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

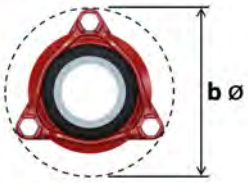
Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

Note:

ID min. = minimum insertion depth

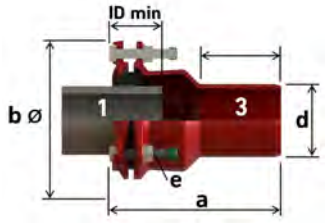




DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	63	46 - 71	**709 335 210**	**709 335 610**	3.600	**709 335 010**	**709 335 310**	3.600
100	110	104 - 132	**709 335 216**	**709 335 616**	5.900	**709 335 016**	**709 335 316**	5.900
150	160	154 - 192	**709 335 220**	**709 335 620**	10.100	**709 335 020**	**709 335 320**	10.100
200	200	192 - 232	**709 335 229**	**709 335 629**	19.600	**709 335 029**	**709 335 329**	19.600

DN (mm)	d3 (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	L (mm)	PN Water (bar)	MOP Gas (bar)
50	63	225 - 247	170	84	3xM12	75	16	8
100	110	257 - 283	241	90	3xM16	120	16	8
150	160	307 - 344	312	110	4xM16	135	16	8
200	200	333 - 370	371	110	6xM16	145	16	8

PF 1 54 323 061



MULTI/JOINT® 3187 Plus Wide Range
Reduced spigot end, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

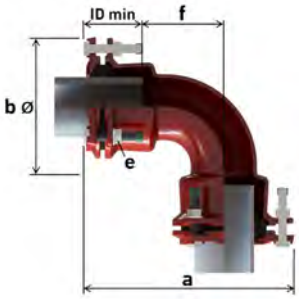
Note:

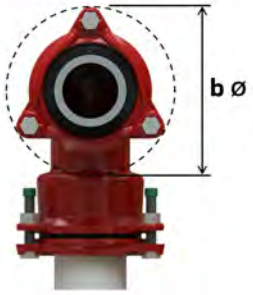
ID min. = minimum insertion depth

DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	110	84 - 105	**709 345 224**	**709 345 624**	5.900	**709 345 024**	**709 345 324**	5.900

DN (mm)	d3 (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	l (mm)	PN Water (bar)	MOP Gas (bar)
80	110	242 - 264	210	84	3xM12	120	16	8

PF 1 54 323 061





MULTI/JOINT® 3407 Plus Wide Range
Bend, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

Note:

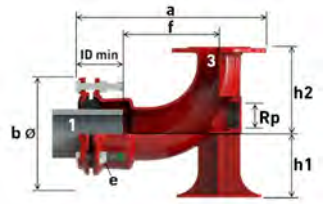
ID min. = minimum insertion depth

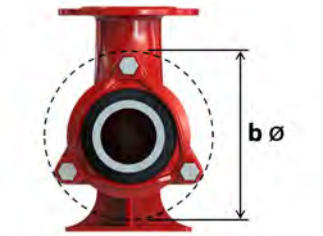
DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
80	84 - 105	84 - 105	**709 475 214**	**709 475 614**	10.000
100	104 - 132	104 - 132	**709 475 216**	**709 475 616**	13.400
150	154 - 192	154 - 192	**709 475 220**	**709 475 620**	25.600

DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	**709 475 014**	**709 475 314**	10.000
100	**709 475 016**	**709 475 316**	13.400
150	**709 475 020**	**709 475 320**	25.600

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	f (mm)	PN Water (bar)	MOP Gas (bar)
80	300 - 322	210	84	3xM12	100	16	8
100	359 - 385	241	90	3xM16	125	16	8
150	441 - 478	312	110	4xM16	175	16	8

PF 1 54 323 061





MULTI/JOINT® 3557 Plus Wide Range
Reduced duckfoot, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Threaded outlet 2 inch
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

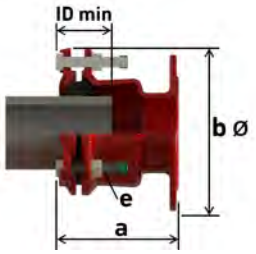
Note:

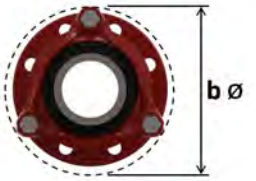
ID min. = minimum insertion depth

Thread Type	Size (inch)	DN (mm)	DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern
Rp	2	65	65 - 80	63 - 90	80	PN10
Rp	2	65	65 - 80	63 - 90	80	PN16
Rp	2	100	100 - 80	104 - 132	80	PN16
Rp	2	125	125 - 80	132 - 155	80	PN10
Rp	2	125	125 - 80	132 - 155	80	PN16
Rp	2	150	150 - 80	154 - 192	80	PN10
Rp	2	150	150 - 80	154 - 192	80	PN16

NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
709 495 236	**709 495 636**	14.600	**709 495 036**	**709 495 336**	14.600
709 495 230	**709 495 630**	14.600	**709 495 030**	**709 495 330**	14.600
709 495 223	**709 495 623**	15.800	**709 495 023**	**709 495 323**	15.800
709 495 261	**709 495 661**	19.400	**709 495 061**	**709 495 361**	19.400
709 495 248	**709 495 648**	19.400	**709 495 048**	**709 495 348**	19.400
709 495 273	**709 495 673**	19.800	**709 495 073**	**709 495 373**	19.800
709 495 267	**709 495 667**	19.800	**709 495 067**	**709 495 367**	19.800

a (mm)	b (mm)	ID min. (mm)	e (mm)	f (mm)	h1 (mm)	h2 (mm)	PN Water (bar)	No. of bolt holes flange
386 - 408	191	84	3xM12	170	90	180	16	4
386 - 408	191	84	3xM12	170	90	180	16	8
404 - 430	241	90	3xM16	190	135	184	16	8
389 - 412	270	90	4xM16	170	135	184	16	4
389 - 412	270	90	4xM16	170	135	184	16	8
418 - 455	312	110	4xM16	180	160	184	16	4
418 - 455	312	110	4xM16	180	160	184	16	8





MULTI/JOINT® 3057 / 3157 Plus Wide Range Flange adaptor acc. to AWWA C110, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

Note:

ID min. = minimum insertion depth

	DN (mm)	DN (inch)	Range 1 (mm)	Range 1 (inch)	Flange 3 (mm)	Flange 3 (inch)	NBR / A2 Code	PF
	50	2	46 - 71	1.811 - 2.795	50	2	**709 355 211**	1 54 323 061
	65	2 ½	63 - 90	2.480 - 3.543	65	2 ½	**709 355 213**	1 54 323 061
	80	3	84 - 105	3.307 - 4.133	80	3	**709 355 240**	1 54 323 061
	100	4	104 - 132	4.094 - 5.196	100	4	**709 355 242**	1 54 323 061
	150	6	154 - 192	6.062 - 7.559	150	6	**709 355 244**	1 54 323 061
	200	8	192 - 232	7.559 - 9.133	200	8	**709 355 246**	1 54 323 061
	250	10	267 - 310	10.500 - 12.204	250	10	**709 355 248**	1 54 323 061
	300	12	315 - 356	12.401 - 14.015	300	12	**709 355 250**	1 54 323 061
	400	16	392 - 433	15.433 - 17.047	400	16	**709 455 294**	1 54 323 071
reduced	425	17	432 - 464	17.000 - 18.267	400	16	**709 455 289**	1 54 323 071
reduced	475	19	481 - 513	18.937 - 20.196	400	16	**709 455 291**	1 54 323 071

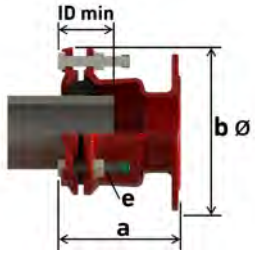
	EPDM / A2 Code	PF	NBR / A4 Code	PF
	709 355 611	1 54 323 061	**709 355 011**	1 54 323 061
	709 355 613	1 54 323 061	**709 355 013**	1 54 323 061
	709 355 640	1 54 323 061	**709 355 040**	1 54 323 061
	709 355 642	1 54 323 061	**709 355 042**	1 54 323 061
	709 355 644	1 54 323 061	**709 355 044**	1 54 323 061
	709 355 646	1 54 323 061	**709 355 046**	1 54 323 061
	709 355 648	1 54 323 061	**709 355 048**	1 54 323 061
	709 355 650	1 54 323 061	**709 355 050**	1 54 323 061
	709 455 694	1 54 323 061	**709 455 094**	1 54 323 061
reduced	**709 455 689**	1 54 323 071	**709 455 089**	1 54 323 071
reduced	**709 455 691**	1 54 323 071	**709 455 091**	1 54 323 071

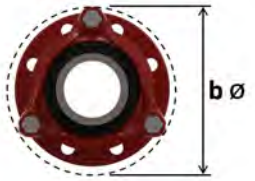
	EPDM / A4 Code	PF	Weight (kg)
	709 355 311	1 54 323 061	4.700
	709 355 313	1 54 323 061	5.700
	709 355 340	1 54 323 061	6.700
	709 355 342	1 54 323 061	8.400
	709 355 344	1 54 323 061	14.200
	709 355 346	1 54 323 061	22.100
	709 355 348	1 54 323 061	32.600
	709 355 350	1 54 323 061	42.400
	709 455 394	1 54 323 061	86.900
reduced	**709 455 389**	1 54 323 071	72.200
reduced	**709 455 391**	1 54 323 071	81.000

table continued on the next page

	a (inch)	b (inch)	ID min. (inch)	e (inch)	PSI Water (psi)	No. of bolt holes flange
	6.496 - 7.362	6.457	3.307	3xM12	232	4
	6.693 - 7.598	7.323	3.307	3xM12	232	4
	6.693 - 7.559	8.031	3.307	3xM12	232	4
	6.811 - 7.835	9.291	3.543	3xM16	232	8
	8.307 - 9.764	11.969	4.331	4xM16	232	8
	8.700 - 10.157	13.937	4.331	6xM16	232	8
	10.394 - 12.087	17.008	5.118	6xM20	232	12
	11.535 - 13.032	19.488	5.118	8xM20	232	12
	11.693 - 13.465	20.630	5.315	10xM20	150	16
reduced	12.992 - 14.449	24.528	6.229	10xM20	150	16
reduced	14.173 - 15.630	26.457	6.229	10xM20	150	16

PF 1 54 323 061





MULTI/JOINT® 3057 / 3157 Plus Wide Range (reduced) Flange adaptor acc. to Table D, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information

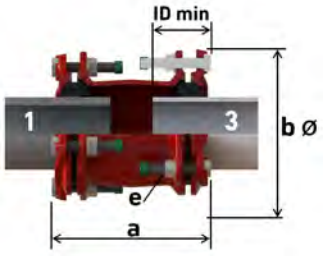
Note:

ID min. = minimum insertion depth

	DN (mm)	Range 1 (mm)	Flange 3 (mm)	EPDM / A4 Code	Weight (kg)
	50	46 - 71	50	**709 355 510**	4.700
	65	63 - 90	65	**709 355 512**	5.700
	80	84 - 105	80	**709 355 514**	6.600
	100	104 - 132	100	**709 355 517**	8.000
	150	154 - 192	150	**709 355 521**	14.200
	200	192 - 232	200	**709 355 526**	22.100
	250	267 - 310	250	**709 355 529**	32.600
	300	315 - 356	300	**709 355 533**	45.600
reduced	125	132 - 155	100	**709 455 533**	9.800
reduced	125	132 - 155	150	**709 455 539**	11.500
reduced	225	230 - 268	200	**709 455 559**	29.300
reduced	225	230 - 268	250	**709 455 581**	45.300

	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
	165 - 187	170	84	3xM12	16	8	4
	170 - 193	191	84	3xM12	16	8	4
	170 - 192	210	84	3xM12	16	8	4
	173 - 199	241	90	3xM16	16	8	4
	211 - 248	312	110	4xM16	16	8	8
	221 - 258	371	110	6xM16	16	8	8
	264 - 307	445	130	6xM20	16	8	8
	293 - 331	495	130	8xM20	16	8	12
reduced	187 - 210	270	90	4xM16	16	8	4
reduced	187 - 210	285	90	4xM16	16	8	8
reduced	250 - 288	415	125	6xM20	16	8	8
reduced	216 - 254	415	125	6xM20	16	8	8

MULTI/JOINT® 3000 Plus (DN50 - DN600) Non Restraint



MULTI/JOINT® 3000 Plus Wide Range
Coupling, non restraint

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

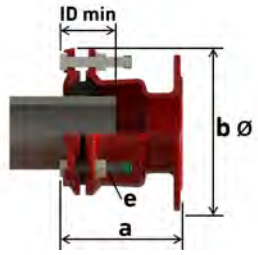
DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	PF	EPDM / A2 Code	PF
50	46 - 71	46 - 71	**709 301 210**	1 54 323 060	**709 301 610**	1 54 323 060
65	63 - 90	63 - 90	**709 301 212**	1 54 323 060	**709 301 612**	1 54 323 060
80	84 - 105	84 - 105	**709 301 214**	1 54 323 060	**709 301 614**	1 54 323 060
100	104 - 132	104 - 132	**709 301 216**	1 54 323 060	**709 301 616**	1 54 323 060
125	132 - 155	132 - 155	**709 301 218**	1 54 323 060	**709 301 618**	1 54 323 060
150	154 - 192	154 - 192	**709 301 220**	1 54 323 060	**709 301 620**	1 54 323 060
200	192 - 232	192 - 232	**709 301 224**	1 54 323 060	**709 301 624**	1 54 323 060
225	230 - 268	230 - 268	**709 301 226**	1 54 323 060	**709 301 626**	1 54 323 060
250	267 - 310	267 - 310	**709 301 228**	1 54 323 060	**709 301 628**	1 54 323 060
300	315 - 356	315 - 356	**709 301 232**	1 54 323 060	**709 301 632**	1 54 323 060
350	352 - 393	352 - 393	**709 301 236**	1 54 323 060	**709 301 636**	1 54 323 060
400	392 - 433	392 - 433	**709 301 240**	1 54 323 060	**709 301 640**	1 54 323 060
425	432 - 464	432 - 464	**709 301 242**	1 54 323 070	**709 301 642**	1 54 323 070
450	450 - 482	450 - 482	**709 301 272**	1 54 323 070	**709 301 672**	1 54 323 070
475	481 - 513	481 - 513	**709 301 273**	1 54 323 070	**709 301 673**	1 54 323 070
500	500 - 532	500 - 532	**709 301 274**	1 54 323 070	**709 301 674**	1 54 323 070
550	548 - 580	548 - 580	**709 301 276**	1 54 323 070	**709 301 676**	1 54 323 070
600	605 - 637	605 - 637	**709 301 278**	1 54 323 070	**709 301 678**	1 54 323 070

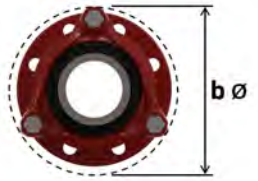
DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
50	**709 301 010**	1 54 323 060	**709 301 310**	1 54 323 060	5.000
65	**709 301 012**	1 54 323 060	**709 301 312**	1 54 323 060	6.000
80	**709 301 014**	1 54 323 060	**709 301 314**	1 54 323 060	7.200
100	**709 301 016**	1 54 323 060	**709 301 316**	1 54 323 060	9.100
125	**709 301 018**	1 54 323 060	**709 301 318**	1 54 323 060	12.200
150	**709 301 020**	1 54 323 060	**709 301 320**	1 54 323 060	16.400
200	**709 301 024**	1 54 323 060	**709 301 324**	1 54 323 060	26.700
225	**709 301 026**	1 54 323 060	**709 301 326**	1 54 323 060	39.200
250	**709 301 028**	1 54 323 060	**709 301 328**	1 54 323 060	40.800
300	**709 301 032**	1 54 323 060	**709 301 332**	1 54 323 060	53.300
350	**709 301 036**	1 54 323 060	**709 301 336**	1 54 323 060	67.700
400	**709 301 040**	1 54 323 060	**709 301 340**	1 54 323 060	68.300
425	**709 301 042**	1 54 323 070	**709 301 342**	1 54 323 070	91.800
450	**709 301 072**	1 54 323 070	**709 301 372**	1 54 323 070	96.300

table continued on the next page

DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
475	**709 301 073**	1 54 323 070	**709 301 373**	1 54 323 070	99.700
500	**709 301 074**	1 54 323 070	**709 301 374**	1 54 323 070	105.100
550	**709 301 076**	1 54 323 070	**709 301 376**	1 54 323 070	116.700
600	**709 301 078**	1 54 323 070	**709 301 378**	1 54 323 070	136.900

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	206 - 250	170	84	3xM12	25	8
65	215 - 261	191	84	3xM12	25	8
80	218 - 262	210	84	3xM12	25	8
100	228 - 280	241	90	3xM16	25	8
125	240 - 286	270	90	4xM16	25	8
150	278 - 352	312	110	4xM16	25	8
200	303 - 377	371	110	6xM16	25	8
225	350 - 426	415	125	6xM20	25	8
250	377 - 462	445	130	6xM20	25	8
300	384 - 460	495	130	8xM20	25	8
350	380 - 470	534	130	8xM20	25	8
400	380 - 470	574	135	10xM20	25	8
425	460 - 535	623	160	10xM20	16	8
450	460 - 535	641	160	10xM20	16	8
475	460 - 535	672	160	10xM20	16	8
500	460 - 535	691	160	10xM20	16	8
550	460 - 535	739	160	12xM20	16	8
600	480 - 555	796	170	14xM20	16	8





MULTI/JOINT® 3050 Plus Wide Range
Flange adaptor, non restraint

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF
50	46 - 71	50	PN16	**709 351 210**	1 54 323 060
65	63 - 90	60/65	PN16	**709 351 212**	1 54 323 060
80	84 - 105	80	PN16	**709 351 214**	1 54 323 060
100	104 - 132	100	PN16	**709 351 216**	1 54 323 060
125	132 - 155	125	PN16	**709 351 218**	1 54 323 060
150	154 - 192	150	PN16	**709 351 220**	1 54 323 060
200	192 - 232	200	PN10/PN16	**709 351 224**	1 54 323 060
250	267 - 310	250	PN10/PN16	**709 351 228**	1 54 323 060
300	315 - 356	300	PN10/PN16	**709 351 232**	1 54 323 060
350	352 - 393	350	PN10/PN16	**709 351 236**	1 54 323 060
400	392 - 433	400	PN10/PN16	**709 351 238**	1 54 323 060
450	450 - 482	450	PN10/PN16	**709 351 272**	1 54 323 070
500	500 - 532	500	PN10/PN16	**709 351 274**	1 54 323 070
600	605 - 637	600	PN10/PN16	**709 351 278**	1 54 323 070

DN (mm)	EPDM / A2 Code	PF	NBR / A4 Code	PF
50	**709 351 610**	1 54 323 060	**709 351 010**	1 54 323 060
65	**709 351 612**	1 54 323 060	**709 351 012**	1 54 323 060
80	**709 351 614**	1 54 323 060	**709 351 014**	1 54 323 060
100	**709 351 616**	1 54 323 060	**709 351 016**	1 54 323 060
125	**709 351 618**	1 54 323 060	**709 351 018**	1 54 323 060
150	**709 351 620**	1 54 323 060	**709 351 020**	1 54 323 060
200	**709 351 624**	1 54 323 060	**709 351 024**	1 54 323 060
250	**709 351 628**	1 54 323 060	**709 351 028**	1 54 323 060
300	**709 351 632**	1 54 323 060	**709 351 032**	1 54 323 060
350	**709 351 636**	1 54 323 060	**709 351 036**	1 54 323 060
400	**709 351 638**	1 54 323 060	**709 351 038**	1 54 323 060
450	**709 351 672**	1 54 323 070	**709 351 072**	1 54 323 070
500	**709 351 674**	1 54 323 070	**709 351 074**	1 54 323 070
600	**709 351 678**	1 54 323 070	**709 351 078**	1 54 323 070

DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50	**709 351 310**	1 54 323 060	4.700
65	**709 351 312**	1 54 323 060	5.600
80	**709 351 314**	1 54 323 060	6.700
100	**709 351 316**	1 54 323 060	7.900
125	**709 351 318**	1 54 323 060	10.200
150	**709 351 320**	1 54 323 060	14.100
200	**709 351 324**	1 54 323 060	21.500
250	**709 351 328**	1 54 323 060	31.400
300	**709 351 332**	1 54 323 060	43.900
350	**709 351 336**	1 54 323 060	50.900

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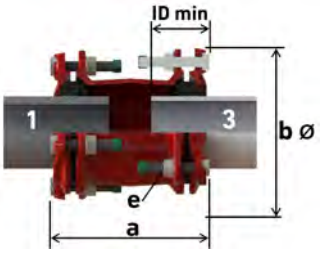
DN (mm)	EPDM / A4 Code	PF	Weight (kg)
400	**709 351 338**	1 54 323 060	61.900
450	**709 351 372**	1 54 323 070	77.000
500	**709 351 374**	1 54 323 070	91.400
600	**709 351 378**	1 54 323 070	117.900

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50	165 - 187	170	84	3xM12	25	8	4
65	170 - 193	191	84	3xM12	25	8	4
80	170 - 192	210	84	3xM12	25	8	8
100	173 - 199	241	90	3xM16	25	8	8
125	192 - 215	270	90	4xM16	25	8	8
150	211 - 248	312	110	4xM16	25	8	8
200	221 - 258	371	110	6xM16	25	8	8/12
250	264 - 307	445	130	6xM20	25	8	12
300	293 - 331	495	130	8xM20	25	8	12
350	291 - 336	534	130	8xM20	25	8	16
400	297 - 342	580	135	10xM20	25	8	16
450	330 - 367	641	160	10xM20	16	8	20
500	332 - 369	715	160	10xM20	16	8	20
600	339 - 377	840	170	14xM20	16	8	20



MULTI/JOINT® 3100 Plus
Wide range, reduced coupling, non restraint

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

DN-DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	PF	EPDM / A2 Code	PF
50 - 65	46 - 71	63 - 90	**709 401 218**	1 54 323 060	**709 401 618**	1 54 323 060
65 - 80	63 - 90	84 - 105	**709 401 220**	1 54 323 060	**709 401 620**	1 54 323 060
80 - 100	84 - 105	104 - 132	**709 401 224**	1 54 323 060	**709 401 624**	1 54 323 060
100 - 125	104 - 132	132 - 155	**709 401 232**	1 54 323 060	**709 401 632**	1 54 323 060
100 - 150	104 - 132	154 - 192	**709 401 236**	1 54 323 060	**709 401 636**	1 54 323 060
125 - 150	132 - 155	154 - 192	**709 401 238**	1 54 323 060	**709 401 638**	1 54 323 060
150 - 200	154 - 192	192 - 232	**709 401 248**	1 54 323 060	**709 401 648**	1 54 323 060
200 - 225	192 - 232	230 - 268	**709 401 278**	1 54 323 060	**709 401 678**	1 54 323 060
200 - 250	192 - 232	267 - 310	**709 401 281**	1 54 323 060	**709 401 681**	1 54 323 060
225 - 250	230 - 268	267 - 310	**709 401 282**	1 54 323 060	**709 401 682**	1 54 323 060
250 - 300	267 - 310	315 - 356	**709 401 286**	1 54 323 060	**709 401 686**	1 54 323 060
300 - 350	315 - 356	352 - 393	**709 401 288**	1 54 323 060	**709 401 688**	1 54 323 060
300 - 400	315 - 356	392 - 433	**709 401 289**	1 54 323 060	**709 401 689**	1 54 323 060
350 - 400	352 - 393	392 - 433	**709 401 290**	1 54 323 060	**709 401 690**	1 54 323 060
400 - 425	392 - 433	432 - 464	**709 401 293**	1 54 323 070	**709 401 693**	1 54 323 070
400 - 450	392 - 433	450 - 482	**709 401 292**	1 54 323 070	**709 401 692**	1 54 323 070
425 - 475	432 - 464	481 - 513	**709 401 295**	1 54 323 070	**709 401 695**	1 54 323 070
450 - 500	450 - 482	500 - 532	**709 401 294**	1 54 323 070	**709 401 694**	1 54 323 070
500 - 550	500 - 532	548 - 580	**709 401 296**	1 54 323 070	**709 401 696**	1 54 323 070
550 - 600	548 - 580	605 - 637	**709 401 297**	1 54 323 070	**709 401 697**	1 54 323 070

DN-DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
50 - 65	**709 401 018**	1 54 323 060	**709 401 318**	1 54 323 060	5.800
65 - 80	**709 401 020**	1 54 323 060	**709 401 320**	1 54 323 060	6.700
80 - 100	**709 401 024**	1 54 323 060	**709 401 324**	1 54 323 060	8.100
100 - 125	**709 401 032**	1 54 323 060	**709 401 332**	1 54 323 060	10.600
100 - 150	**709 401 036**	1 54 323 060	**709 401 336**	1 54 323 060	14.200
125 - 150	**709 401 038**	1 54 323 060	**709 401 338**	1 54 323 060	15.500
150 - 200	**709 401 048**	1 54 323 060	**709 401 348**	1 54 323 060	22.000
200 - 225	**709 401 078**	1 54 323 060	**709 401 378**	1 54 323 060	34.200
200 - 250	**709 401 081**		**709 401 381**	1 54 323 060	36.900
225 - 250	**709 401 082**	1 54 323 060	**709 401 382**	1 54 323 060	39.600
250 - 300	**709 401 086**	1 54 323 060	**709 401 386**	1 54 323 060	50.200
300 - 350	**709 401 088**	1 54 323 060	**709 401 388**	1 54 323 060	61.800
300 - 400	**709 401 089**	1 54 323 060	**709 401 389**	1 54 323 060	68.800
350 - 400	**709 401 090**	1 54 323 060	**709 401 390**	1 54 323 060	71.200
400 - 425	**709 401 093**	1 54 323 070	**709 401 393**	1 54 323 070	85.300
400 - 450	**709 401 092**	1 54 323 070	**709 401 392**	1 54 323 070	86.400

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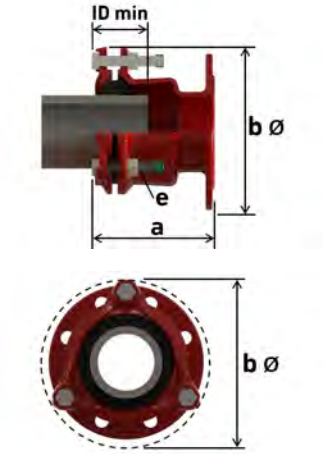
DN-DN (mm)	NBR / A4 Code	PF	EPDM / A4 Code	PF	Weight (kg)
425 - 475	**709 401 095**	1 54 323 070	**709 401 395**	1 54 323 070	100.300
450 - 500	**709 401 094**	1 54 323 070	**709 401 394**	1 54 323 070	105.500
500 - 550	**709 401 096**	1 54 323 070	**709 401 396**	1 54 323 070	114.100
550 - 600	**709 401 097**	1 54 323 070	**709 401 397**	1 54 323 070	130.500

DN-DN (mm)	a (mm)	b (mm)	ID min. side 1 (mm)	ID min. side 3 (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50 - 65	209 - 254	191	84	84	3xM12/3xM12	25	8
65 - 80	223 - 267	210	84	84	3xM12/3xM12	25	8
80 - 100	222 - 270	241	84	90	3xM12/3xM16	25	8
100 - 125	228 - 277	270	90	90	3xM16/4xM16	25	8
100 - 150	286 - 353	312	90	110	4xM16/4xM16	25	8
125 - 150	286 - 346	312	90	110	4xM16/4xM16	25	8
150 - 200	290 - 364	371	110	110	4xM16/6xM16	25	8
200 - 225	349 - 420	415	110	125	6xM16/6xM20	25	8
200 - 250	364 - 443	445	110	130	6xM16/6xM20	25	8
225 - 250	368 - 450	445	125	130	6xM20/6xM20	25	8
250 - 300	405 - 486	495	130	130	6xM20/8xM20	25	8
300 - 350	443 - 527	534	130	130	8xM20/8xM20	25	8
300 - 400	469 - 552	574	130	135	8xM20/10xM20	25	8
350 - 400	472 - 561	574	130	135	8xM20/10xM20	25	8
400 - 425	437 - 520	623	135	160	10xM20/10xM20	16	8
400 - 450	437 - 520	641	135	160	10xM20/10xM20	16	8
425 - 475	483 - 558	672	160	160	10xM20/10xM20	16	8
450 - 500	483 - 558	691	160	160	10xM20/10xM20	16	8
500 - 550	478 - 553	739	160	160	10xM20/12xM20	16	8
550 - 600	488 - 563	796	160	170	12xM20/14xM20	16	8



MULTI/JOINT® 3150 Plus Wide Range
Reduced flange adaptor, non restraint

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF
50 - 40	46 - 71	40	PN16	**709 451 208**	1 54 323 060
65 - 80	63 - 90	80	PN16	**709 451 218**	1 54 323 060
100 - 80	104 - 132	80	PN16	**709 451 224**	1 54 323 060
125 - 100	132 - 155	100	PN16	**709 451 232**	1 54 323 060
125 - 150	132 - 155	150	PN16	**709 451 238**	1 54 323 060
150 - 100	154 - 192	100	PN16	**709 451 236**	1 54 323 060
200 - 150	192 - 232	150	PN16	**709 451 239**	1 54 323 060
225 - 200	230 - 268	200	PN10/PN16	**709 451 278**	1 54 323 060
225 - 250	230 - 268	250	PN10/PN16	**709 451 280**	1 54 323 060
300 - 250	315 - 356	250	PN10/PN16	**709 451 286**	1 54 323 060
350 - 300	352 - 393	300	PN10/PN16	**709 451 284**	1 54 323 060
425 - 400	432 - 464	400	PN10/PN16	**709 451 288**	1 54 323 070
450 - 400	450 - 482	400	PN10/PN16	**709 451 292**	1 54 323 070
475 - 400	481 - 513	400	PN10/PN16	**709 451 290**	1 54 323 070
550 - 500	548 - 580	500	PN10/PN16	**709 351 276**	1 54 323 070

DN-DN (mm)	EPDM / A2 Code	PF	NBR / A4 Code	PF
50 - 40	**709 451 608**	1 54 323 060	**709 451 008**	1 54 323 060
65 - 80	**709 451 618**	1 54 323 060	**709 451 018**	1 54 323 060
100 - 80	**709 451 624**	1 54 323 060	**709 451 024**	1 54 323 060
125 - 100	**709 451 632**	1 54 323 060	**709 451 032**	1 54 323 060
125 - 150	**709 451 638**	1 54 323 060	**709 451 038**	1 54 323 060
150 - 100	**709 451 636**	1 54 323 060	**709 451 036**	1 54 323 060
200 - 150	**709 451 639**	1 54 323 060	**709 451 039**	1 54 323 060
225 - 200	**709 451 678**	1 54 323 060	**709 451 078**	1 54 323 060
225 - 250	**709 451 680**	1 54 323 060	**709 451 080**	1 54 323 060
300 - 250	**709 451 686**	1 54 323 060	**709 451 086**	1 54 323 060
350 - 300	**709 451 684**	1 54 323 060	**709 451 084**	1 54 323 060
425 - 400	**709 451 688**	1 54 323 070	**709 451 088**	1 54 323 070
450 - 400	**709 451 692**	1 54 323 070	**709 451 092**	1 54 323 070
475 - 400	**709 451 690**	1 54 323 070	**709 451 090**	1 54 323 070
550 - 500	**709 351 676**	1 54 323 070	**709 351 076**	1 54 323 070

DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 40	**709 451 308**	1 54 323 060	4.400
65 - 80	**709 451 318**	1 54 323 060	5.800
100 - 80	**709 451 324**	1 54 323 060	7.700
125 - 100	**709 451 332**	1 54 323 060	9.800
125 - 150	**709 451 338**	1 54 323 060	11.600
150 - 100	**709 451 336**	1 54 323 060	12.700
200 - 150	**709 451 339**	1 54 323 060	20.400
225 - 200	**709 451 378**	1 54 323 060	27.600

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DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
225 - 250	**709 451 380**	1 54 323 060	26.300
300 - 250	**709 451 386**	1 54 323 060	41.900
350 - 300	**709 451 384**	1 54 323 060	47.900
425 - 400	**709 451 388**	1 54 323 070	71.900
450 - 400	**709 451 392**	1 54 323 070	75.000
475 - 400	**709 451 390**	1 54 323 070	80.800
550 - 500	**709 351 376**	1 54 323 070	98.700

DN-DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50 - 40	176 - 198	170	84	3xM12	25	8	4
65 - 80	170 - 193	200	84	3xM12	25	8	8
100 - 80	182 - 208	241	90	3xM16	25	8	8
125 - 100	187 - 210	270	90	4xM16	25	8	8
125 - 150	187 - 210	285	90	4xM16	25	8	8
150 - 100	236 - 273	312	110	4xM16	25	8	8
200 - 150	246 - 283	371	110	6xM16	25	8	8
225 - 200	250 - 288	415	125	6xM20	25	8	8
225 - 250	216 - 254	415	125	6xM20	25	8	12
300 - 250	330 - 368	495	130	8xM20	25	8	12
350 - 300	302 - 347	580	130	8xM20	25	8	12
425 - 400	330 - 367	623	160	10xM20	16	8	16
450 - 400	330 - 367	641	160	10xM20	16	8	16
475 - 400	360 - 397	672	160	10xM20	16	8	16
550 - 500	330 - 367	739	160	12xM20	16	8	20

PF 1 54 323 060

MULTI/JOINT® 3400 Plus Wide Range
Bend, non restraint

Model:

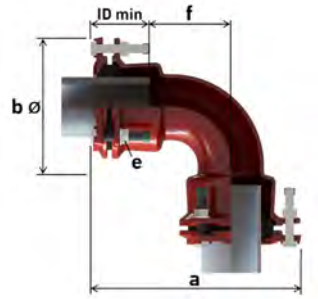
- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

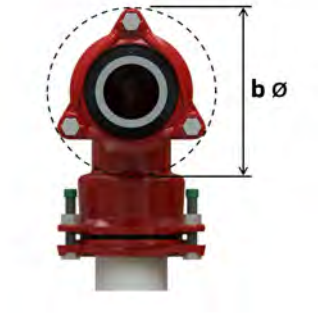
Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth





DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	EPDM / A2 Code	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	84 - 105	84 - 105	**709 471 214**	**709 471 614**	**709 471 014**	**709 471 314**	10.000
100	104 - 132	104 - 132	**709 471 216**	**709 471 616**	**709 471 016**	**709 471 316**	13.300
150	154 - 192	154 - 192	**709 471 220**	**709 471 620**	**709 471 020**	**709 471 320**	25.500

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	f (mm)	PN Water (bar)	MOP Gas (bar)
80	300 - 322	210	84	3xM12	100	25	8
100	359 - 385	241	90	3xM16	125	25	8
150	441 - 478	312	110	4xM16	175	25	8

PF 1 54 323 060

MULTI/JOINT® 3080 Plus Wide Range
Spigot end, non restraint

Model:

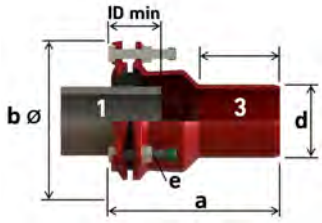
- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

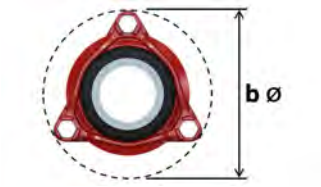
- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

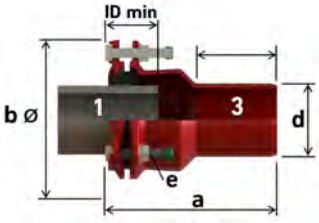


DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	63	46 - 71	**709 331 210**	**709 331 610**	3.600	**709 331 010**	**709 331 310**	3.600
100	110	104 - 132	**709 331 216**	**709 331 616**	5.900	**709 331 016**	**709 331 316**	5.900
150	160	154 - 192	**709 331 220**	**709 331 620**	10.000	**709 331 020**	**709 331 320**	10.000
200	200	192 - 232	**709 331 229**	**709 331 629**	14.070	**709 331 029**	**709 331 329**	19.500



DN (mm)	d3 (mm)	a (mm)	b (mm)	ID min. (mm)	d (mm)	e (mm)	L (mm)	PN Water (bar)	MOP Gas (bar)
50	63	225 - 247	170	84	100	3xM12	75	25	8
100	110	257 - 283	241	90	110	3xM16	120	25	8
150	160	307 - 344	312	110	120	4xM16	135	25	8
200	200	333 - 370	371	110	140	6xM16	145	25	8

PF 1 54 323 060



MULTI/JOINT® 3180 Plus Wide Range
Reduced spigot end, non restraint

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825

Installation instruction:

- Read the user manual
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

Note:

ID min. = minimum insertion depth

DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	110	84 - 105	**709 341 224**	**709 341 624**	5.900	**709 341 024**	**709 341 324**	5.900

DN (mm)	d3 (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	l (mm)	PN Water (bar)	MOP Gas (bar)
80	110	242 - 264	210	84	3xM12	120	25	8

MULTI/JOINT® 3000 Plus Accessories

MULTI/JOINT® Accessories

Insert Stiffeners

PF 1 54 323 064

Insert stiffener Economy 50 x 2.4

Model:

- Suitable for PE and PVC pipes
- Stainless steel A2 quality (AISI 304), optional A4 quality (AISI 316)
- For pipe sizes > d355 use an insert stiffener with wedge
- Other pipe sizes < d355 available on request

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
40 x 3,7	11.0	100	**709 026 391**	0.100
40 x 2,3	17.6 / 17.0	100	**709 026 392**	0.100
50 x 2,4	21	100	**709 026 207**	0.130
50 x 4,6	11.0	100	**709 026 203**	0.130
50 x 2,9	17.6 / 17.0	100	**709 026 206**	0.130
63 x 5,8	11.0	100	**709 026 211**	0.160
63 x 3,6	17.6 / 17.0	100	**709 026 214**	0.160
63 x 2,0	33	100	**709 026 217**	0.160
63 x 1,5	41	100	**709 026 415**	0.160
75 x 6,8	11.0	100	**709 026 220**	0.190
75 x 4,3	17.6 / 17.0	100	**709 026 223**	0.190
75 x 1,9	41	100	**709 026 227**	0.190
90 x 8,2	11.0	120	**709 026 230**	0.270
90 x 5,2	17.6 / 17.0	120	**709 026 233**	0.270
90 x 2,8	33	120	**709 026 236**	0.270
90 x 2,2	41	120	**709 026 238**	0.270
110 x 10,0	11.0	120	**709 026 242**	0.330
110 x 6,3	17.6 / 17.0	120	**709 026 245**	0.330
110 x 3,4	33	120	**709 026 248**	0.330
110 x 2,7	41	120	**709 026 250**	0.330
125 x 11,4	11.0	120	**709 026 254**	0.380
125 x 7,2	17.6 / 17.0	120	**709 026 257**	0.380
140 x 12,7	11.0	140	**709 026 266**	0.490
140 x 8,0	17.6 / 17.0	140	**709 026 269**	0.490
160 x 14,6	11.0	140	**709 026 278**	0.850
160 x 9,1	17.6 / 17.0	140	**709 026 281**	0.850
160 x 4,9	33	140	**709 026 284**	0.850
160 x 4,0	41	140	**709 026 286**	0.850
180 x 16,4	11.0	140	**709 026 290**	0.950
180 x 10,7	17.0	140	**709 026 408**	0.950
180 x 10,3	17.6	140	**709 026 293**	0.950
200 x 18,2	11.0	160	**709 026 302**	1.210
200 x 11,9	17.0	160	**709 026 409**	1.210
200 x 11,4	17.6	160	**709 026 305**	1.210
200 x 6,1	33	160	**709 026 308**	1.210
200 x 4,9	41	160	**709 026 310**	1.210
225 x 20,5	11.0	160	**709 026 314**	1.360
225 x 13,4	17.0	160	**709 026 410**	1.360
225 x 12,8	17.6	160	**709 026 317**	1.360
250 x 22,8	11.0	160	**709 026 326**	2.010
250 x 14,8	17.0	160	**709 026 411**	2.010
250 x 14,3	17.6	160	**709 026 329**	2.010
250 x 7,6	33	160	**709 026 332**	2.010
250 x 6,1	41	160	**709 026 334**	2.010
280 x 25,5	11.0	160	**709 026 338**	2.250
280 x 16,6	17.0	160	**709 026 340**	2.250
280 x 16,0	17.6	160	**709 026 341**	2.250

table continued on the next page

PF 1 54 323 064

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
315 x 28,7	11.0	160	**709 026 350**	2.530
315 x 18,7	17.0	160	**709 026 413**	2.530
315 x 17,9	17.6	160	**709 026 353**	2.530
315 x 9,6	33	160	**709 026 356**	2.530
315 x 7,7	41	160	**709 026 358**	2.530
355 x 32,3	11.0	160	**709 026 362**	2.850
355 x 21,1	17.0	160	**709 026 414**	2.850
355 x 20,2	17.6	160	**709 026 365**	2.850

Insert stiffener with Wedge

Model:

- Suitable for PE and PVC pipes
- Stainless steel A2 quality (AISI 304), optional A4 quality (AISI 316)
- Other pipe sizes available on request
- For MULTI/JOINT® DN625 till DN800 please see MJ DN625 - DN800 insert stiffeners

d x e (mm)	SDR	L (mm)	Code	PF	Weight (kg)
50 x 2.4	21	175	**709 026 207**	1 54 323 064	0.130
63 x 3.0	21	175	**709 026 019**	1 54 323 065	0.500
63 x 3.6	17.6 / 17.0	175	**709 026 012**	1 54 323 065	0.220
63 x 4.7	13.5	175	**709 026 015**	1 54 323 065	0.210
63 x 5.8	11.0	175	**709 026 016**	1 54 323 065	0.210
63 x 8.7	7.5	175	**709 026 018**	1 54 323 065	0.190
75 x 3.6	21	175	**709 026 027**	1 54 323 065	0.260
75 x 4.3	17.6 / 17.0	175	**709 026 022**	1 54 323 065	0.260
75 x 5.6	13.5	175	**709 026 024**	1 54 323 065	0.250
75 x 6.9	11.0	175	**709 026 026**	1 54 323 065	0.240
90 x 4.3	21	175	**709 026 039**	1 54 323 065	1.100
90 x 5.1	17.6 / 17.0	175	**709 026 032**	1 54 323 065	0.310
90 x 6.7	13.5	175	**709 026 035**	1 54 323 065	0.300
90 x 8.2	11.0	175	**709 026 036**	1 54 323 065	0.290
90 x 12.5	7.5	175	**709 026 038**	1 54 323 065	0.260
110 x 5.3	21	175	**709 026 049**	1 54 323 065	0.460
110 x 6.3	17.6 / 17.0	175	**709 026 042**	1 54 323 065	0.450
110 x 8.2	13.5	175	**709 026 045**	1 54 323 065	0.430
110 x 10.0	11.0	175	**709 026 046**	1 54 323 065	0.420
110 x 15.2	7.5	175	**709 026 048**	1 54 323 065	0.370
125 x 6.0	21	175	**709 026 058**	1 54 323 065	1.200
125 x 7.1	17.6 / 17.0	175	**709 026 052**	1 54 323 065	0.510
125 x 9.3	13.5	175	**709 026 054**	1 54 323 065	0.490
125 x 11.4	11.0	175	**709 026 056**	1 54 323 065	0.470
140 x 6.7	21	175	**709 026 067**	1 54 323 065	1.300
140 x 8.0	17.6 / 17.0	175	**709 026 062**	1 54 323 065	0.560
140 x 10.4	13.5	175	**709 026 063**	1 54 323 065	0.550
140 x 12.8	11.0	175	**709 026 066**	1 54 323 065	0.520
160 x 4.8	33.0	200	**709 026 070**	1 54 323 065	0.920
160 x 7.7	21	200	**709 026 079**	1 54 323 065	0.880
160 x 9.1	17.6 / 17.0	200	**709 026 072**	1 54 323 065	0.870
160 x 11.9	13.5	200	**709 026 074**	1 54 323 065	0.830
160 x 14.6	11.0	200	**709 026 076**	1 54 323 065	0.800
180 x 8.6	21	200	**709 026 088**	1 54 323 065	1.400
180 x 10.2	17.6 / 17.0	200	**709 026 082**	1 54 323 065	0.980
180 x 16.4	11.0	200	**709 026 086**	1 54 323 065	0.900
200 x 9.6	21	200	**709 026 094**	1 54 323 065	1.400
200 x 11.4	17.6 / 17.0	200	**709 026 092**	1 54 323 065	1.150
200 x 18.2	11.0	200	**709 026 096**	1 54 323 065	1.020
225 x 10.8	21	225	**709 026 101**	1 54 323 065	1.700
225 x 12.8	17.6 / 17.0	225	**709 026 102**	1 54 323 065	1.660
225 x 20.5	11.0	225	**709 026 106**	1 54 323 065	1.530
250 x 11.9	21	225	**709 026 105**	1 54 323 065	1.500

table continued on the next page

d x e (mm)	SDR	L (mm)	Code	PF	Weight (kg)
250 x 14.2	17.6 / 17.0	225	**709 026 115**	1 54 323 065	1.850
250 x 22.8	11.0	225	**709 026 116**	1 54 323 065	1.700
280 x 13.4	21	225	**709 026 145**	1 54 323 065	2.000
280 x 16.6	17.6 / 17.0	225	**709 026 127**	1 54 323 065	2.070
280 x 25.5	11.0	225	**709 026 126**	1 54 323 065	1.920
315 x 18.5	17.0	225	**709 026 910**	1 54 323 065	2.320
315 x 17.9	17.6	225	**709 026 125**	1 54 323 065	2.340
315 x 15.0	21	225	**709 026 123**	1 54 323 065	2.390
315 x 28.7	11.0	225	**709 026 124**	1 54 323 065	2.160
355 x 10.8	33.0	225	**709 026 132**	1 54 323 065	3.760
355 x 20.1	17.6	225	**709 026 129**	1 54 323 065	2.710
355 x 20.9	17.0	225	**709 026 131**	1 54 323 065	2.690
355 x 32.3	11.0	225	**709 026 128**	1 54 323 065	2.510
400 x 15.4	26.0	225	**709 026 140**	1 54 323 065	3.170
400 x 22.7	17.6	225	**709 026 139**	1 54 323 065	3.050
400 x 36.4	11.0	225	**709 026 138**	1 54 323 065	2.820
450 x 25.5	17.6	225	**709 026 149**	1 54 323 065	4.200
450 x 26.5	17.0	225	**709 026 147**	1 54 323 065	4.200
450 x 41.0	11.0	225	**709 026 148**	1 54 323 065	4.200
500 x 28.3	17.6	225	**709 026 159**	1 54 323 065	4.660
500 x 29.4	17.0	225	**709 026 021**	1 54 323 065	4.660
500 x 45.5	11.0	225	**709 026 158**	1 54 323 065	4.660
560 x 31.7	17.6	225	**709 026 169**	1 54 323 065	5.230
560 x 32.9	17.0	225	**709 026 172**	1 54 323 065	5.230
560 x 51.0	11.0	225	**709 026 168**	1 54 323 065	5.230
630 x 35.7	17.6	225	**709 026 179**	1 54 323 065	5.870
630 x 57.3	11.0	225	**709 026 178**	1 54 323 065	5.870
710 x 40.2	17.6	225	**709 026 189**	1 54 323 065	6.620
710 x 64.5	11.0	225	**709 026 188**	1 54 323 065	6.620
800 x 45.3	17.6	225	**709 026 199**	1 54 323 065	7.460
800 x 72.7	11.0	225	**709 026 198**	1 54 323 065	7.460
900 x 51.2	17.6	225	**709 026 183**	1 54 323 065	8.390
900 x 81.8	11.0	225	**709 026 182**	1 54 323 065	8.390
1000 x 56.8	17.6	225	**709 026 191**	1 54 323 065	9.330
1000 x 90.9	11.0	225	**709 026 192**	1 54 323 065	9.330
1200 x 109.1	11.0	225	**709 026 184**	1 54 323 065	11.190
1400 x 79.6	17.6	225	**709 026 187**	1 54 323 065	13.060
1400 x 127.3	11.0	225	**709 026 186**	1 54 323 065	13.060
1600 x 90.9	17.6	225	**709 026 196**	1 54 323 065	14.920
1600 x 145.5	11.0	225	**709 026 195**	1 54 323 065	14.920

PF 1 54 323 065

Insert stiffener with wedge MJ DN625 - DN800 (DN900 - DN1025 will be added)

Model:

- Suitable for PE and PVC pipes
- Stainless steel A2 quality (AISI 304), optional A4 quality (AISI 316)
- Other pipe sizes available on request (DN900 - DN1025 will be added in 2023)

	d x e (mm)	SDR	L (mm)	Code	Weight (kg)
	630 x 57.3	11	300	**709 026 450**	17.000
316	630 x 57.3	11	300	**709 026 472**	17.000
	630 x 37.1	17	300	**709 026 451**	18.500
316	630 x 37.1	17	300	**709 026 473**	18.500
	630 x 35.7	17.6	300	**709 026 452**	18.500
316	630 x 35.7	17.6	300	**709 026 474**	18.500
	630 x 24.1	26	300	**709 026 453**	19.000
316	630 x 24.1	26	300	**709 026 475**	19.000
	710 x 64.5	11	300	**709 026 455**	19.000
316	710 x 64.5	11	300	**709 026 477**	19.000
	710 x 41.8	17	300	**709 026 456**	21.000
316	710 x 41.8	17	300	**709 026 478**	21.000

table continued on the next page

PF 1 54 323 065

	d x e (mm)	SDR	L (mm)	Code	Weight (kg)
	710 x 40.2	17.6	300	**709 026 457**	21.000
316	710 x 40.2	17.6	300	**709 026 479**	21.000
	710 x 33.8	21	300	**709 026 458**	23.000
316	710 x 33.8	21	300	**709 026 480**	23.000
	710 x 27.3	26	300	**709 026 459**	23.000
316	710 x 27.3	26	300	**709 026 481**	23.000
	710 x 21.5	33	300	**709 026 460**	24.000
316	710 x 21.5	33	300	**709 026 482**	24.000
	800 x 72.7	11	300	**709 026 465**	22.000
316	800 x 72.7	11	300	**709 026 487**	22.000
	800 x 47.0	17	300	**709 026 466**	23.000
316	800 x 47.0	17	300	**709 026 488**	23.000
	800 x 45.3	17.6	300	**709 026 467**	23.000
316	800 x 45.3	17.6	300	**709 026 489**	23.000
	800 x 38.1	21	300	**709 026 468**	24.000
316	800 x 38.1	21	300	**709 026 490**	24.000
	800 x 30.7	26	300	**709 026 469**	24.000
316	800 x 30.7	26	300	**709 026 491**	24.000
	800 x 24.2	33	300	**709 026 470**	25.000
316	800 x 24.2	33	300	**709 026 492**	25.000

PF 1 54 323 064

Insert stiffener Economy - A4 (316)

Model:

- Suitable for PE and PVC pipes
- Stainless Steel A4 Quality (AISI 316)
- For pipe sizes > d355 use an insert stiffener with wedge
- Other dimensions available on request

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
50 x 4,6	11.0	100	**709 026 503**	0.130
50 x 2,9	17.6 / 17.0	100	**709 026 506**	0.130
63 x 5,8	11.0	100	**709 026 511**	0.160
63 x 3,6	17.6 / 17.0	100	**709 026 514**	0.160
75 x 6,8	11.0	100	**709 026 520**	0.190
75 x 4,3	17.6 / 17.0	100	**709 026 523**	0.190
90 x 8,2	11.0	120	**709 026 530**	0.270
90 x 5,2	17.6 / 17.0	120	**709 026 533**	0.270
110 x 10,0	11.0	120	**709 026 542**	0.330
110 x 6,3	17.6 / 17.0	120	**709 026 545**	0.330
125 x 11,4	11.0	120	**709 026 554**	0.380
125 x 7,2	17.6 / 17.0	120	**709 026 557**	0.380
140 x 12,7	11.0	140	**709 026 566**	0.490
140 x 8,0	17.6 / 17.0	140	**709 026 569**	0.490
160 x 14,6	11.0	140	**709 026 578**	0.850
160 x 9,1	17.6 / 17.0	140	**709 026 581**	0.850
180 x 16,4	11.0	140	**709 026 590**	0.950
180 x 10,3	17.0	140	**709 026 708**	0.950
180 x 10,7	17.6	140	**709 026 593**	0.950
200 x 18,2	11.0	140	**709 026 602**	1.210
200 x 11,9	17.6	160	**709 026 605**	1.210
225 x 20,5	11.0	160	**709 026 614**	1.360
225 x 13,4	17.0	160	**709 026 710**	1.360
225 x 12,8	17.6	160	**709 026 617**	1.360
250 x 22,8	11.0	160	**709 026 626**	2.010
250 x 14,8	17.0	160	**709 026 711**	2.010
250 x 14,3	17.6	160	**709 026 629**	2.010
280 x 25,5	11.0	160	**709 026 638**	2.250
280 x 16,6	17.0	160	**709 026 712**	2.250
280 x 16,0	17.6	160	**709 026 641**	2.250
315 x 28,7	11.0	160	**709 026 650**	2.530

table continued on the next page

PF 1 54 323 064

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
315 x 18,7	17.0	160	**709 026 713**	2.530
315 x 17,9	17.6	160	**709 026 653**	2.530
355 x 32,3	11.0	160	**709 026 662**	2.850
355 x 21,1	17.0	160	**709 026 714**	2.850
355 x 20,2	17.6	160	**709 026 655**	2.530

PF 1 54 323 065

Insert Stiffener with Wedge - A4

Model:

- Stainless Steel A4 Quality (AISI 316)
- Suitable for PE and PVC pipes
- Other dimensions available on request

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
110 x 6.3	17.6 / 17.0	175	**709 026 043**	0.450
125 x 7.1	17.6 / 17.0	175	**709 026 912**	0.510
140 x 8.0	17.6 / 17.0	175	**709 026 913**	0.560
160 x 9.1	17.6 / 17.0	200	**709 026 801**	0.870
180 x 10.2	17.6 / 17.0	200	**709 026 802**	0.980
200 x 11.4	17.6 / 17.0	200	**709 026 804**	1.150
225 x 12.8	17.6 / 17.0	225	**709 026 806**	1.660
250 x 14.2	17.6 / 17.0	225	**709 026 914**	1.850
280 x 16.6	17.6 / 17.0	225	**709 026 915**	2.070
315 x 18.5	17.0	225	**709 026 916**	2.320
355 x 20.9	17.0	225	**709 026 917**	2.690
400 x 23.7	17.0	225	**709 026 144**	3.030
450 x 26.5	17.0	225	**709 026 918**	4.200
500 x 29.4	17.0	225	**709 026 919**	4.660
560 x 32.9	17.0	225	**709 026 920**	5.230
630 x 37.1	17.0	225	**709 026 921**	5.870
710 x 41.8	17.0	225	**709 026 922**	6.620

PF 1 54 323 063

Uni/Fleks ring

Model:

- Consists of a segmented plastic ring and Varioseal (gasket)
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- non restraint

DN (mm)	Range (mm)	NBR Code	EPDM Code	Weight (kg)
50	46 - 71	**709 390 030**	**709 390 130**	0.192
65	63 - 90	**709 390 032**	**709 390 132**	3.840
80	84 - 105	**709 390 034**	**709 390 134**	0.267
100	104 - 132	**709 390 036**	**709 390 136**	0.001
125	132 - 155	**709 390 038**	**709 390 138**	0.627
150	154 - 192	**709 390 040**	**709 390 140**	0.838
200	192 - 232	**709 390 043**	**709 390 143**	0.987
225	230 - 268	**709 390 046**	**709 390 146**	1.100
250	267 - 310	**709 390 048**	**709 390 148**	1.300
300	315 - 356	**709 390 053**	**709 390 153**	1.700
350	352 - 393	**709 390 054**	**709 390 154**	2.000
400	392 - 433	**709 390 056**	**709 390 156**	2.200
425	432 - 464	**709 390 082**	**709 390 182**	4.000
450	450 - 482	**709 390 078**	**709 390 178**	2.400

table continued on the next page

PF 1 54 323 063

DN (mm)	Range (mm)	NBR Code	EPDM Code	Weight (kg)
475	481 - 513	**709 390 083**	**709 390 183**	4.400
500	500 - 532	**709 390 079**	**709 390 179**	2.600
550	548 - 580	**709 390 080**	**709 390 180**	2.800
600	605 - 637	**709 390 081**	**709 390 181**	3.000

PF 1 54 323 063

Uni/Fiks ring with Uni/Fiksers

Model:

- Consists of a segmented plastic ring and Varioseal (gasket) + Uni/Fiksers
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Restraint on all pipe materials
- For AC and GRP pipes please contact us

Note:

DN625 - DN825 for water applications only

DN (mm)	Range (mm)	NBR Code	EPDM Code	Weight (kg)
50	46 - 71	**709 597 230**	**709 597 630**	0.200
65	63 - 90	**709 597 232**	**709 597 632**	3.840
80	84 - 105	**709 597 234**	**709 597 634**	0.027
100	104 - 132	**709 597 236**	**709 597 636**	0.036
125	132 - 155	**709 597 238**	**709 597 638**	0.627
150	154 - 192	**709 597 240**	**709 597 640**	0.894
200	192 - 232	**709 597 243**	**709 597 643**	1.054
225	230 - 268	**709 597 246**	**709 597 646**	1.300
250	267 - 310	**709 597 248**	**709 597 648**	1.500
300	315 - 356	**709 597 253**	**709 597 653**	1.700
350	352 - 393	**709 597 254**	**709 597 654**	2.000
400	392 - 433	**709 597 256**	**709 597 656**	2.200
425	432 - 464	**709 597 282**	**709 597 682**	4.000
450	450 - 482	**709 597 278**	**709 597 678**	2.400
475	481 - 513	**709 597 283**	**709 597 683**	4.200
500	500 - 532	**709 597 279**	**709 597 679**	2.600
550	548 - 580	**709 597 280**	**709 597 680**	2.800
600	605 - 637	**709 597 281**	**709 597 681**	3.000
625	630 - 662	**709 597 290**	**709 597 690**	9.900
675	665 - 697	**709 597 291**	**709 597 691**	10.660
700	709 - 741	**709 597 292**	**709 597 692**	11.400
750	745 - 777	**709 597 277**	**709 597 677**	12.150
800	799 - 831	**709 597 293**	**709 597 693**	12.470
825	837 - 869	**709 597 294**	**709 597 694**	13.330

PF 1 54 323 063

Uni/Fikser set MULTI/JOINT® 3000 Plus

Model:

- For each MULTI/JOINT® 3000 Plus Uni/Fiks ring / socket, 1 set is needed
- Stainless steel A4 quality (AISI 316) Fiksers

Type	Range (mm)	Fiksers (qty)	Code	Weight (kg)
A	DN50 - DN80	22	**709 597 260**	0.048
B	DN100 - DN125	18	**709 597 262**	0.048
C	DN150 - DN200	48	**709 597 264**	0.224
D	DN225 - DN400	74	**709 597 276**	0.240
D	DN425 - DN600	115	**709 597 287**	0.348
E	DN625 - DN825	77	**709 597 299**	0.770

PF 1 54 323 063

Bolts set Hexagon MULTI/JOINT® 3000 Plus - A4 quality

Model:

- Set consisting of bolts, nuts and washers
- For each MULTI/JOINT® 3000 socket, 1 set is needed
- Stainless steel A4 quality (AISI 316) bolts, nuts and washers

DN (mm)	DN-DN (mm)	M	Code	Weight (kg)
	50 - 80	3xM12	**700 618 923**	0.290
100		3xM16	**700 618 924**	0.600
	125 - 150	4xM16	**700 618 925**	0.840
200		6xM16	**700 618 926**	1.270
	225 - 250	6xM20	**700 618 927**	2.230
	300 - 350	8xM20	**700 618 928**	2.970
400		10xM20	**700 618 929**	3.710
	425 - 500	10xM20	**700 618 933**	4.330
550		12xM20	**700 618 934**	5.200
600		14xM20	**700 618 935**	6.060
	625 - 675	14xM20	**700 618 963**	7.130
	700 - 750	16xM20	**700 618 964**	8.140
	800 - 825	20xM20	**700 618 965**	10.180

PF 1 54 323 063

Bolts set Hexagon MULTI/JOINT® 3000 Plus - A2 quality

Model:

- Set consisting of bolts, nuts and washers
- For each MULTI/JOINT® 3000 socket, 1 set is needed
- Stainless steel A2 quality (AISI 304) bolts, nuts and washers

DN (mm)	DN-DN (mm)	M	Code	Weight (kg)
	50 - 80	3xM12	**700 618 953**	0.290
100		3xM16	**700 618 954**	0.600
	125 - 150	4xM16	**700 618 955**	0.840
200		6xM16	**700 618 956**	1.270
	225 - 250	6xM20	**700 618 957**	2.230
	300 - 350	8xM20	**700 618 958**	2.970
400		10xM20	**700 618 959**	3.710
	425 - 500	10xM20	**700 618 960**	4.330
550		12xM20	**700 618 961**	5.200
600		14xM20	**700 618 962**	6.060

PF 1 54 329 012

RESICOAT® repair set

Model:

- To repair the coating of the fitting

Contents	Code	Weight (kg)
30cc	**709 900 000**	1.000

ST-System Fittings

ST-System

Coupling, non restraint

Model:

- Body and clamping ring(s): steel (ST 37-2)
- Bolts and nuts: standard stainless steel A2 (AISI 304), others on request
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- Gaskets NBR or EPDM
- Working pressures: Water: 10 bar, 16 bar or 25 bar; Gas: 4
- Ranges: DN40 - DN80 (+2 / -1), DN100 - DN200 (+2 / -1,5), DN250 - DN500 (+4 / -3), DN600 - DN1100 (+5 / -4), DN1200 - DN1600 (+5,5 / -5)
- Angular deflection of max. 4° per socket at installation (based on the middle of the range)
- All kinds of dimensions from DN40 up to DN2200 are possible on request and different lengths and pressure classes are also possible by mentioning exact outside diameter

Installation instruction:

- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

DN (mm)	Length (mm)	Code
40	300	**DN40C-N**
50	300	**DN50C-N**
65	300	**DN65C-N**
80	300	**DN80C-N**
100	300	**DN100C-N**
200	300	**DN200C-N**
250	300	**DN250C-N**
300	300	**DN300C-N**
350	300	**DN350C-N**
400	300	**DN400C-N**
450	300	**DN450C-N**
500	300	**DN500C-N**
550	300	**DN550C-N**
600	300	**DN600C-N**
650	300	**DN650C-N**
700	300	**DN700C-N**
800	300	**DN800C-N**
900	300	**DN900C-N**
1000	300	**DN1000C-N**
1100	300	**DN1100C-N**
1200	300	**DN1200C-N**
1300	300	**DN1300C-N**
1400	300	**DN1400C-N**
1500	300	**DN1500C-N**
1600	300	**DN1600C-N**
1700	300	**DN1700C-N**
1800	300	**DN1800C-N**
1900	300	**DN1900C-N**
2000	300	**DN2000C-N**
2100	300	**DN2100C-N**
2200	300	**DN2200C-N**

Flange Adaptor, non restraint

Model:

- Body and clamping ring(s): steel (ST 37-2)
- Bolts and nuts: standard stainless steel A2 (AISI 304), others on request
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- Gaskets NBR or EPDM
- Working pressures: Water: 10 bar, 16 bar or 25 bar; Gas: 4
- Ranges: DN40 - DN80 (+2 / -1), DN100 - DN200 (+2 / -1,5), DN250 - DN500 (+4 / -3), DN600 - DN1100 (+5 / -4), DN1200 - DN1600 (+5,5 / -5)
- Angular deflection of max. 4° per socket at installation (based on the middle of the range)
- All kinds of dimensions from DN40 up to DN2200 are possible on request and different lengths and pressure classes are also possible by mentioning exact outside diameter
- Flange drilling: PN10, PN16, PN25; others on request

Installation instruction:

- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

DN (mm)	DN flange (mm)	Length (mm)	Code
40	40	300	**DN40F-N**
50	50	300	**DN50F-N**
65	65	300	**DN65F-N**
80	80	300	**DN80F-N**
100	100	300	**DN100F-N**
200	200	300	**DN200F-N**
250	250	300	**DN250F-N**
300	300	300	**DN300F-N**
350	350	300	**DN350F-N**
400	400	300	**DN400F-N**
450	450	300	**DN450F-N**
500	500	300	**DN500F-N**
550	550	300	**DN550F-N**
600	600	300	**DN600F-N**
650	650	300	**DN650F-N**
700	700	300	**DN700F-N**
800	800	300	**DN800F-N**
900	900	300	**DN900F-N**
1000	1000	300	**DN1000F-N**
1100	1100	300	**DN1100F-N**
1200	1200	300	**DN1200F-N**
1300	1300	300	**DN1300F-N**
1400	1400	300	**DN1400F-N**
1500	1500	300	**DN1500F-N**
1600	1600	300	**DN1600F-N**
1700	1700	300	**DN1700F-N**
1800	1800	300	**DN1800F-N**
1900	1900	300	**DN1900F-N**
2000	2000	300	**DN2000F-N**
2100	2100	300	**DN2100F-N**
2200	2200	300	**DN2200F-N**

Reduction Coupling, non restraint

Model:

- Body and clamping ring(s): steel (ST 37-2)
- Bolts and nuts: standard stainless steel A2 (AISI 304), others on request
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- Gaskets NBR or EPDM
- Working pressures: Water: 10 bar, 16 bar or 25 bar; Gas: 4
- Ranges: DN40 - DN80 (+2 / -1), DN100 - DN200 (+2 / -1,5), DN250 - DN500 (+4 / -3), DN600 - DN1100 (+5 / -4), DN1200 - DN1600 (+5,5 / -5)
- Angular deflection of max. 4° per socket at installation (based on the middle of the range)
- All kinds of dimensions from DN40 up to DN2200 are possible on request and different lengths and pressure classes are also possible by mentioning exact outside diameter

Installation instruction:

- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

DN (mm)	Length (mm)	Code
40	300	**DN40RC-N**
50	300	**DN50RC-N**
65	300	**DN65RC-N**
80	300	**DN80RC-N**
100	300	**DN100RC-N**
200	300	**DN200RC-N**
250	300	**DN250RC-N**
300	300	**DN300RC-N**
350	300	**DN350RC-N**
400	300	**DN400RC-N**
450	300	**DN450RC-N**
500	300	**DN500RC-N**
550	300	**DN550RC-N**
600	300	**DN600RC-N**
650	300	**DN650RC-N**
700	300	**DN700RC-N**
800	300	**DN800RC-N**
900	300	**DN900RC-N**
1000	300	**DN1000RC-N**
1100	300	**DN1100RC-N**
1200	300	**DN1200RC-N**
1300	300	**DN1300RC-N**
1400	300	**DN1400RC-N**
1500	300	**DN1500RC-N**
1600	300	**DN1600RC-N**
1700	300	**DN1700RC-N**
1800	300	**DN1800RC-N**
1900	300	**DN1900RC-N**
2000	300	**DN2000RC-N**
2100	300	**DN2100RC-N**
2200	300	**DN2200RC-N**

Reduction Flange Adaptor, non restraint

Model:

- Body and clamping ring(s): steel (ST 37-2)
- Bolts and nuts: standard stainless steel A2 (AISI 304), others on request
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- Gaskets NBR or EPDM
- Working pressures: Water: 10 bar, 16 bar or 25 bar; Gas: 4
- Ranges: DN40 - DN80 (+2 / -1), DN100 - DN200 (+2 / -1,5), DN250 - DN500 (+4 / -3), DN600 - DN1100 (+5 / -4), DN1200 - DN1600 (+5,5 / -5)
- Angular deflection of max. 4° per socket at installation (based on the middle of the range)
- All kinds of dimensions from DN40 up to DN2200 are possible on request and different lengths and pressure classes are also possible by mentioning exact outside diameter
- Flange drilling: PN10, PN16, PN25; others on request

Installation instruction:

- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.

DN (mm)	DN flange (mm)	Length (mm)	Code
40	80 - 40	300	**DN40RF-N**
50	80 - 50	300	**DN50RF-N**
65	80 - 65	300	**DN65RF-N**
80	80 - 2200	300	**DN80RF-N**
100	80 - 2200	300	**DN100RF-N**
200	80 - 2200	300	**DN200RF-N**
250	80 - 2200	300	**DN250RF-N**
300	80 - 2200	300	**DN300RF-N**
350	80 - 2200	300	**DN350RF-N**
400	80 - 2200	300	**DN400RF-N**
450	80 - 2200	300	**DN450RF-N**
500	80 - 2200	300	**DN500RF-N**
550	80 - 2200	300	**DN550RF-N**
600	80 - 2200	300	**DN600RF-N**
650	80 - 2200	300	**DN650RF-N**
700	80 - 2200	300	**DN700RF-N**
800	80 - 2200	300	**DN800RF-N**
900	80 - 2200	300	**DN900RF-N**
1000	80 - 2200	300	**DN1000RF-N**
1100	80 - 2200	300	**DN1100RF-N**
1200	80 - 2200	300	**DN1200RF-N**
1300	80 - 2200	300	**DN1300RF-N**
1400	80 - 2200	300	**DN1400RF-N**
1500	80 - 2200	300	**DN1500RF-N**
1600	80 - 2200	300	**DN1600RF-N**
1700	80 - 2200	300	**DN1700RF-N**
1800	80 - 2200	300	**DN1800RF-N**
1900	80 - 2200	300	**DN1900RF-N**
2000	80 - 2200	300	**DN2000RF-N**
2100	80 - 2200	300	**DN2100RF-N**
2200	80 - 2200	300	**DN2200RF-N**

Multi/Clamp

Multi/Clamp

PF 1 54 325 010

Multi/Clamp Snap length 75 mm

Model:

- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- Lugs are made of ductile iron
- The rubber gasket is available in NBR (EPDM on request)
- The rubber gasket is clamped and partially covers the inside of the band
- The Multi/Clamp Snap is only suitable for above ground use
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- Suitable for use on steel, (ductile) cast iron and copper pipes
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
15 - 22	16.0	**724 208 010**	1.000
21 - 25	16.0	**724 208 019**	0.245
26 - 30	16.0	**724 208 028**	1.000
33 - 37	16.0	**724 208 037**	1.000
37 - 41	16.0	**724 208 046**	1.000
42 - 45	16.0	**724 208 055**	0.318
48 - 51	16.0	**724 208 064**	1.000
50 - 54	16.0	**724 208 073**	1.000
55 - 58	16.0	**724 208 082**	1.000
60 - 64	16.0	**724 208 091**	0.365
62 - 66	16.0	**724 208 100**	1.000
65 - 69	16.0	**724 208 109**	1.000
69 - 73	16.0	**724 208 118**	1.000
71 - 76	16.0	**724 208 127**	1.000
74 - 80	16.0	**724 208 136**	1.000
87 - 93	16.0	**724 208 145**	0.500
94 - 100	16.0	**724 208 154**	1.000
99 - 104	16.0	**724 208 163**	1.000
105 - 111	16.0	**724 208 172**	1.000
112 - 117	10.0	**724 208 181**	1.000
115 - 121	10.0	**724 208 190**	1.000
120 - 126	10.0	**724 208 199**	1.000
126 - 131	10.0	**724 208 208**	1.000
131 - 136	10.0	**724 208 217**	1.000
139 - 145	10.0	**724 208 226**	1.000
149 - 155	10.0	**724 208 235**	1.000
156 - 162	10.0	**724 208 244**	1.000
167 - 173	10.0	**724 208 253**	1.000
173 - 179	10.0	**724 208 262**	1.000
200 - 206	10.0	**724 208 271**	1.000
217 - 223	10.0	**724 208 280**	1.000
223 - 229	10.0	**724 208 289**	1.000
272 - 278	6.0	**724 208 298**	1.000
323 - 329	6.0	**724 208 307**	1.000

PF 1 54 325 010

Multi/Clamp Snap
length 150 mm

Model:

- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- Lugs are made of ductile iron
- The rubber gasket is available in NBR (EPDM on request)
- The rubber gasket is clamped and partially covers the inside of the band
- The Multi/Clamp Snap is only suitable for above ground use
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- Suitable for use on steel, (ductile) cast iron and copper pipes
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
15 - 22	16.0	**724 208 011**	1.000
21 - 25	16.0	**724 208 020**	1.000
26 - 30	16.0	**724 208 029**	1.000
33 - 37	16.0	**724 208 038**	1.000
37 - 41	16.0	**724 208 047**	0.613
42 - 45	16.0	**724 208 056**	1.000
48 - 51	16.0	**724 208 065**	1.000
50 - 54	16.0	**724 208 074**	0.681
55 - 58	16.0	**724 208 083**	1.000
60 - 64	16.0	**724 208 092**	1.000
62 - 66	16.0	**724 208 101**	1.000
65 - 69	16.0	**724 208 110**	1.000
69 - 73	16.0	**724 208 119**	1.000
71 - 76	16.0	**724 208 128**	1.000
74 - 80	16.0	**724 208 137**	1.000
87 - 93	16.0	**724 208 146**	1.000
94 - 100	16.0	**724 208 155**	1.000
99 - 104	16.0	**724 208 164**	1.000
105 - 111	16.0	**724 208 173**	1.000
112 - 117	10.0	**724 208 182**	1.000
115 - 121	10.0	**724 208 191**	1.000
120 - 126	10.0	**724 208 200**	1.000
126 - 131	10.0	**724 208 209**	1.000
131 - 136	10.0	**724 208 218**	1.000
139 - 145	10.0	**724 208 227**	1.000
149 - 155	10.0	**724 208 236**	1.000
156 - 162	10.0	**724 208 245**	1.000
167 - 173	10.0	**724 208 254**	1.000
173 - 179	10.0	**724 208 263**	1.000
200 - 206	10.0	**724 208 272**	1.000
217 - 223	10.0	**724 208 281**	1.000
223 - 229	10.0	**724 208 290**	1.000
272 - 278	6.0	**724 208 299**	1.000
323 - 329	6.0	**724 208 308**	1.000

PF 1 54 325 010

Multi/Clamp Snap
length 225 mm

Model:

- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- Lugs are made of ductile iron
- The rubber gasket is available in NBR (EPDM on request)
- The rubber gasket is clamped and partially covers the inside of the band
- The Multi/Clamp Snap is only suitable for above ground use
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- Suitable for use on steel, (ductile) cast iron and copper pipes
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
15 - 22	16.0	**724 208 012**	1.000
21 - 25	16.0	**724 208 021**	1.000
26 - 30	16.0	**724 208 030**	1.000
33 - 37	16.0	**724 208 039**	1.000
37 - 41	16.0	**724 208 048**	1.000
42 - 45	16.0	**724 208 057**	1.000
48 - 51	16.0	**724 208 066**	1.000
50 - 54	16.0	**724 208 075**	1.000
55 - 58	16.0	**724 208 084**	1.000
60 - 64	16.0	**724 208 093**	1.000
62 - 66	16.0	**724 208 102**	1.000
65 - 69	16.0	**724 208 111**	1.000
69 - 73	16.0	**724 208 120**	1.000
71 - 76	16.0	**724 208 129**	1.000
74 - 80	16.0	**724 208 138**	1.000
87 - 93	16.0	**724 208 147**	1.000
94 - 100	16.0	**724 208 156**	1.000
99 - 104	16.0	**724 208 165**	1.000
105 - 111	16.0	**724 208 174**	1.000
112 - 117	10.0	**724 208 183**	1.000
115 - 121	10.0	**724 208 192**	1.000
120 - 126	10.0	**724 208 201**	1.000
126 - 131	10.0	**724 208 210**	1.000
131 - 136	10.0	**724 208 219**	1.000
139 - 145	10.0	**724 208 228**	1.000
149 - 155	10.0	**724 208 237**	1.000
156 - 162	10.0	**724 208 246**	1.000
167 - 173	10.0	**724 208 255**	1.000
173 - 179	10.0	**724 208 264**	1.000
200 - 206	10.0	**724 208 273**	1.000
217 - 223	10.0	**724 208 282**	1.000
223 - 229	10.0	**724 208 291**	1.000
272 - 278	6.0	**724 208 300**	1.000
323 - 329	6.0	**724 208 309**	1.000

PF 1 54 325 009

Multi/Clamp Midi length 100 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with partial gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
19 - 23	16.0	**724 209 010**	1.000
25 - 29	16.0	**724 209 019**	1.000
32 - 36	16.0	**724 209 028**	1.000
38 - 42	16.0	**724 209 037**	1.000
44 - 51	16.0	**724 209 046**	1.000
48 - 55	16.0	**724 209 055**	1.000
54 - 58	16.0	**724 209 064**	1.000
60 - 64	16.0	**724 209 073**	1.000
63 - 70	16.0	**724 209 082**	1.000
67 - 74	16.0	**724 209 091**	1.000
70 - 77	16.0	**724 209 100**	1.000
73 - 80	16.0	**724 209 109**	1.000
75 - 83	16.0	**724 209 118**	1.000
82 - 90	16.0	**724 209 127**	1.000
87 - 97	16.0	**724 209 136**	1.000
95 - 104	16.0	**724 209 145**	1.000
98 - 108	16.0	**724 209 154**	1.000
102 - 112	16.0	**724 209 163**	1.000
108 - 118	16.0	**724 209 172**	1.000
113 - 123	16.0	**724 209 181**	1.000
118 - 128	16.0	**724 209 190**	1.000
120 - 131	16.0	**724 209 199**	1.000

PF 1 54 325 009

Multi/Clamp Midi length 150 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with partial gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
54 - 58	16.0	**724 209 065**	1.000
60 - 64	16.0	**724 209 074**	1.000
63 - 70	16.0	**724 209 083**	1.000
67 - 74	16.0	**724 209 092**	1.000
70 - 77	16.0	**724 209 101**	1.000
73 - 80	16.0	**724 209 110**	1.000
75 - 83	16.0	**724 209 119**	1.000
82 - 90	16.0	**724 209 128**	1.000
87 - 97	16.0	**724 209 137**	1.000
95 - 104	16.0	**724 209 146**	1.000
98 - 108	16.0	**724 209 155**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
102 - 112	16.0	**724 209 164**	1.000
108 - 118	16.0	**724 209 173**	1.000
113 - 123	16.0	**724 209 182**	1.000
118 - 128	16.0	**724 209 191**	1.000
120 - 131	16.0	**724 209 200**	1.000
125 - 135	16.0	**724 209 209**	1.000
133 - 144	16.0	**724 209 218**	1.000
139 - 150	16.0	**724 209 227**	1.000
145 - 155	16.0	**724 209 236**	1.000
151 - 161	16.0	**724 209 245**	1.000
159 - 170	16.0	**724 209 254**	1.000
165 - 175	16.0	**724 209 263**	1.000
168 - 180	16.0	**724 209 272**	1.000
176 - 186	10.0	**724 209 281**	1.000

PF 1 54 325 009

Multi/Clamp Midi length 200 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with partial gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
95 - 104	16.0	**724 209 147**	1.000
98 - 108	16.0	**724 209 156**	1.000
102 - 112	16.0	**724 209 165**	1.000
108 - 118	16.0	**724 209 174**	1.000
113 - 123	16.0	**724 209 183**	1.000
118 - 128	16.0	**724 209 192**	1.000
120 - 131	16.0	**724 209 201**	1.000
125 - 135	16.0	**724 209 210**	1.000
133 - 144	16.0	**724 209 219**	1.000
139 - 150	16.0	**724 209 228**	1.000
145 - 155	16.0	**724 209 237**	1.000
151 - 161	16.0	**724 209 246**	1.000
159 - 170	16.0	**724 209 255**	1.000
165 - 175	16.0	**724 209 264**	1.000
168 - 180	16.0	**724 209 273**	1.000
176 - 186	10.0	**724 209 282**	1.000
180 - 191	10.0	**724 209 291**	1.000
193 - 203	10.0	**724 209 300**	1.000
200 - 210	10.0	**724 209 309**	1.000
209 - 220	10.0	**724 209 318**	1.000

PF 1 54 325 009

Multi/Clamp Single length 75 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
19 - 23	16.0	**724 211 010**	1.000
25 - 29	16.0	**724 211 026**	1.000
32 - 36	16.0	**724 211 042**	1.000
38 - 42	16.0	**724 211 058**	1.000

PF 1 54 325 009

Multi/Clamp Single length 150 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
19 - 23	16.0	**724 211 011**	1.000
25 - 29	16.0	**724 211 027**	1.000
32 - 36	16.0	**724 211 043**	1.000
38 - 42	16.0	**724 211 059**	1.000
44 - 51	16.0	**724 211 075**	1.000
48 - 55	16.0	**724 211 091**	1.000
52 - 59	16.0	**724 211 107**	1.000
57 - 64	16.0	**724 211 123**	1.000
60 - 67	16.0	**724 211 139**	1.000
63 - 70	16.0	**724 211 155**	1.000
67 - 74	16.0	**724 211 171**	1.000
70 - 77	16.0	**724 211 187**	1.000
73 - 80	16.0	**724 211 203**	1.000
75 - 83	16.0	**724 211 219**	1.000
82 - 90	16.0	**724 211 235**	1.000
87 - 97	16.0	**724 211 251**	1.000
95 - 104	16.0	**724 211 267**	1.000
98 - 108	16.0	**724 211 283**	1.000
102 - 112	16.0	**724 211 299**	1.000
108 - 118	16.0	**724 211 315**	1.000
113 - 123	16.0	**724 211 331**	1.000
118 - 128	16.0	**724 211 347**	1.000
120 - 131	16.0	**724 211 363**	1.000
125 - 135	16.0	**724 211 379**	1.000
133 - 144	16.0	**724 211 395**	1.000
139 - 150	16.0	**724 211 411**	1.000
145 - 155	16.0	**724 211 427**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
151 - 161	16.0	**724 211 443**	1.000
159 - 170	16.0	**724 211 459**	1.000
165 - 175	16.0	**724 211 475**	1.000
168 - 180	16.0	**724 211 491**	1.000

PF 1 54 325 009

Multi/Clamp Single length 200 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
44 - 51	16.0	**724 211 076**	1.000
48 - 55	16.0	**724 211 092**	1.000
52 - 59	16.0	**724 211 108**	1.000
57 - 64	16.0	**724 211 124**	1.000
60 - 67	16.0	**724 211 140**	1.000
63 - 70	16.0	**724 211 156**	1.000
67 - 74	16.0	**724 211 172**	1.000
70 - 77	16.0	**724 211 188**	1.000
73 - 80	16.0	**724 211 204**	1.000
75 - 83	16.0	**724 211 220**	1.000
82 - 90	16.0	**724 211 236**	1.000
87 - 97	16.0	**724 211 252**	1.000
95 - 104	16.0	**724 211 268**	1.000
98 - 108	16.0	**724 211 284**	1.000
102 - 112	16.0	**724 211 300**	1.000
108 - 118	16.0	**724 211 316**	1.000
113 - 123	16.0	**724 211 332**	1.000
118 - 128	16.0	**724 211 348**	1.000
120 - 131	16.0	**724 211 364**	1.000
125 - 135	16.0	**724 211 380**	1.000
133 - 144	16.0	**724 211 396**	1.000
139 - 150	16.0	**724 211 412**	1.000
145 - 155	16.0	**724 211 428**	1.000
151 - 161	16.0	**724 211 444**	1.000
159 - 170	16.0	**724 211 460**	1.000
165 - 175	16.0	**724 211 476**	1.000
168 - 180	16.0	**724 211 492**	1.000
176 - 186	10.0	**724 211 508**	1.000
180 - 191	10.0	**724 211 524**	1.000
193 - 203	10.0	**724 211 540**	1.000
200 - 210	10.0	**724 211 556**	1.000
209 - 220	10.0	**724 211 572**	1.000
215 - 226	10.0	**724 211 588**	1.000
219 - 230	10.0	**724 211 604**	1.000
222 - 233	10.0	**724 211 620**	1.000
228 - 240	10.0	**724 211 636**	1.000
243 - 253	10.0	**724 211 652**	1.000
252 - 262	10.0	**724 211 668**	1.000
261 - 271	10.0	**724 211 684**	1.000
271 - 281	10.0	**724 211 700**	1.000
280 - 290	10.0	**724 211 716**	1.000

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PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
294 - 304	10.0	**724 211 732**	1.000
300 - 310	10.0	**724 211 748**	1.000
310 - 320	10.0	**724 211 764**	1.000
315 - 326	10.0	**724 211 780**	1.000
320 - 330	10.0	**724 211 796**	1.000
324 - 334	10.0	**724 211 812**	1.000
335 - 346	10.0	**724 211 828**	1.000

PF 1 54 325 009

Multi/Clamp Single length 250 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
60 - 67	16.0	**724 211 141**	1.000
63 - 70	16.0	**724 211 157**	1.000
67 - 74	16.0	**724 211 173**	1.000
70 - 77	16.0	**724 211 189**	1.000
73 - 80	16.0	**724 211 205**	1.000
75 - 83	16.0	**724 211 221**	1.000
82 - 90	16.0	**724 211 237**	1.000
87 - 97	16.0	**724 211 253**	1.000
95 - 104	16.0	**724 211 269**	1.000
98 - 108	16.0	**724 211 285**	1.000
102 - 112	16.0	**724 211 301**	1.000
108 - 118	16.0	**724 211 317**	1.000
113 - 123	16.0	**724 211 333**	1.000
118 - 128	16.0	**724 211 349**	1.000
120 - 131	16.0	**724 211 365**	1.000
125 - 135	16.0	**724 211 381**	1.000
133 - 144	16.0	**724 211 397**	1.000
139 - 150	16.0	**724 211 413**	1.000
145 - 155	16.0	**724 211 429**	1.000
151 - 161	16.0	**724 211 445**	1.000
159 - 170	16.0	**724 211 461**	1.000
165 - 175	16.0	**724 211 477**	1.000
168 - 180	16.0	**724 211 493**	1.000
176 - 186	10.0	**724 211 509**	1.000
180 - 191	10.0	**724 211 525**	1.000
193 - 203	10.0	**724 211 541**	1.000
200 - 210	10.0	**724 211 557**	1.000
209 - 220	10.0	**724 211 573**	1.000
215 - 226	10.0	**724 211 589**	1.000
219 - 230	10.0	**724 211 605**	1.000
222 - 233	10.0	**724 211 621**	1.000
228 - 240	10.0	**724 211 637**	1.000
243 - 253	10.0	**724 211 653**	1.000
252 - 262	10.0	**724 211 669**	1.000
261 - 271	10.0	**724 211 685**	1.000
271 - 281	10.0	**724 211 701**	1.000
280 - 290	10.0	**724 211 717**	1.000
294 - 304	10.0	**724 211 733**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
300 - 310	10.0	**724 211 749**	1.000
310 - 320	10.0	**724 211 765**	1.000
315 - 326	10.0	**724 211 781**	1.000
320 - 330	10.0	**724 211 797**	1.000
324 - 334	10.0	**724 211 813**	1.000
335 - 346	10.0	**724 211 829**	1.000

PF 1 54 325 009

Multi/Clamp Single length 300 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
60 - 67	16.0	**724 211 142**	1.000
63 - 70	16.0	**724 211 158**	1.000
67 - 74	16.0	**724 211 174**	1.000
70 - 77	16.0	**724 211 190**	1.000
73 - 80	16.0	**724 211 206**	1.000
75 - 83	16.0	**724 211 222**	1.000
82 - 90	16.0	**724 211 238**	1.000
87 - 97	16.0	**724 211 254**	1.000
95 - 104	16.0	**724 211 270**	1.000
98 - 108	16.0	**724 211 286**	1.000
102 - 112	16.0	**724 211 302**	1.000
108 - 118	16.0	**724 211 318**	1.000
113 - 123	16.0	**724 211 334**	1.000
118 - 128	16.0	**724 211 350**	1.000
120 - 131	16.0	**724 211 366**	1.000
125 - 135	16.0	**724 211 382**	1.000
133 - 144	16.0	**724 211 398**	1.000
139 - 150	16.0	**724 211 414**	1.000
145 - 155	16.0	**724 211 430**	1.000
151 - 161	16.0	**724 211 446**	1.000
159 - 170	16.0	**724 211 462**	1.000
165 - 175	16.0	**724 211 478**	1.000
168 - 180	16.0	**724 211 494**	1.000
176 - 186	10.0	**724 211 510**	1.000
180 - 191	10.0	**724 211 526**	1.000
193 - 203	10.0	**724 211 542**	1.000
200 - 210	10.0	**724 211 558**	1.000
209 - 220	10.0	**724 211 574**	1.000
215 - 226	10.0	**724 211 590**	1.000
219 - 230	10.0	**724 211 606**	1.000
222 - 233	10.0	**724 211 622**	1.000
228 - 240	10.0	**724 211 638**	1.000
243 - 253	10.0	**724 211 654**	1.000
252 - 262	10.0	**724 211 670**	1.000
261 - 271	10.0	**724 211 686**	1.000
271 - 281	10.0	**724 211 702**	1.000
280 - 290	10.0	**724 211 718**	1.000
294 - 304	10.0	**724 211 734**	1.000
300 - 310	10.0	**724 211 750**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
310 - 320	10.0	**724 211 766**	1.000
315 - 326	10.0	**724 211 782**	1.000
320 - 330	10.0	**724 211 798**	1.000
324 - 334	10.0	**724 211 814**	1.000
335 - 346	10.0	**724 211 830**	1.000

PF 1 54 325 009

Multi/Clamp Single length 400 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
63 - 70	16.0	**724 211 159**	1.000
67 - 74	16.0	**724 211 175**	1.000
70 - 77	16.0	**724 211 191**	1.000
73 - 80	16.0	**724 211 207**	1.000
75 - 83	16.0	**724 211 223**	1.000
82 - 90	16.0	**724 211 239**	1.000
87 - 97	16.0	**724 211 255**	1.000
95 - 104	16.0	**724 211 271**	1.000
98 - 108	16.0	**724 211 287**	1.000
102 - 112	16.0	**724 211 303**	1.000
108 - 118	16.0	**724 211 319**	1.000
113 - 123	16.0	**724 211 335**	1.000
118 - 128	16.0	**724 211 351**	1.000
120 - 131	16.0	**724 211 367**	1.000
125 - 135	16.0	**724 211 383**	1.000
133 - 144	16.0	**724 211 399**	1.000
139 - 150	16.0	**724 211 415**	1.000
145 - 155	16.0	**724 211 431**	1.000
151 - 161	16.0	**724 211 447**	1.000
159 - 170	16.0	**724 211 463**	1.000
165 - 175	16.0	**724 211 479**	1.000
168 - 180	16.0	**724 211 495**	1.000
176 - 186	10.0	**724 211 511**	1.000
180 - 191	10.0	**724 211 527**	1.000
193 - 203	10.0	**724 211 543**	1.000
200 - 210	10.0	**724 211 559**	1.000
209 - 220	10.0	**724 211 575**	1.000
215 - 226	10.0	**724 211 591**	1.000
219 - 230	10.0	**724 211 607**	1.000
222 - 233	10.0	**724 211 623**	1.000
228 - 240	10.0	**724 211 639**	1.000
243 - 253	10.0	**724 211 655**	1.000
252 - 262	10.0	**724 211 671**	1.000
261 - 271	10.0	**724 211 687**	1.000
271 - 281	10.0	**724 211 703**	1.000
280 - 290	10.0	**724 211 719**	1.000
294 - 304	10.0	**724 211 735**	1.000
300 - 310	10.0	**724 211 751**	1.000
310 - 320	10.0	**724 211 767**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
315 - 326	10.0	**724 211 783**	1.000
320 - 330	10.0	**724 211 799**	1.000
324 - 334	10.0	**724 211 815**	1.000
335 - 346	10.0	**724 211 831**	1.000

PF 1 54 325 009

Multi/Clamp Single length 500 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
108 - 118	16.0	**724 211 320**	1.000
113 - 123	16.0	**724 211 336**	1.000
118 - 128	16.0	**724 211 352**	1.000
120 - 131	16.0	**724 211 368**	1.000
125 - 135	16.0	**724 211 384**	1.000
133 - 144	16.0	**724 211 400**	1.000
139 - 150	16.0	**724 211 416**	1.000
145 - 155	16.0	**724 211 432**	1.000
151 - 161	16.0	**724 211 448**	1.000
159 - 170	16.0	**724 211 464**	1.000
165 - 175	16.0	**724 211 480**	1.000
168 - 180	16.0	**724 211 496**	1.000
176 - 186	10.0	**724 211 512**	1.000
180 - 191	10.0	**724 211 528**	1.000
193 - 203	10.0	**724 211 544**	1.000
200 - 210	10.0	**724 211 560**	1.000
209 - 220	10.0	**724 211 576**	1.000
215 - 226	10.0	**724 211 592**	1.000
219 - 230	10.0	**724 211 608**	1.000
222 - 233	10.0	**724 211 624**	1.000
228 - 240	10.0	**724 211 640**	1.000
243 - 253	10.0	**724 211 656**	1.000
252 - 262	10.0	**724 211 672**	1.000
261 - 271	10.0	**724 211 688**	1.000
271 - 281	10.0	**724 211 704**	1.000
280 - 290	10.0	**724 211 720**	1.000
294 - 304	10.0	**724 211 736**	1.000
300 - 310	10.0	**724 211 752**	1.000
310 - 320	10.0	**724 211 768**	1.000
315 - 326	10.0	**724 211 784**	1.000
320 - 330	10.0	**724 211 800**	1.000
324 - 334	10.0	**724 211 816**	1.000
335 - 346	10.0	**724 211 832**	1.000

PF 1 54 325 009

Multi/Clamp Single length 600 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Single band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
222 - 233	10.0	**724 211 625**	1.000
228 - 240	10.0	**724 211 641**	1.000
243 - 253	10.0	**724 211 657**	1.000
252 - 262	10.0	**724 211 673**	1.000
261 - 271	10.0	**724 211 689**	1.000
271 - 281	10.0	**724 211 705**	1.000
280 - 290	10.0	**724 211 721**	1.000
294 - 304	10.0	**724 211 737**	1.000
300 - 310	10.0	**724 211 753**	1.000
310 - 320	10.0	**724 211 769**	1.000
315 - 326	10.0	**724 211 785**	1.000
320 - 330	10.0	**724 211 801**	1.000
324 - 334	10.0	**724 211 817**	1.000
335 - 346	10.0	**724 211 833**	1.000

PF 1 54 325 009

Multi/Clamp Double length 200 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
88 - 110	16.0	**724 212 058**	2.770
108 - 128	16.0	**724 212 074**	3.400
112 - 134	16.0	**724 212 090**	2.920
120 - 140	16.0	**724 212 106**	3.400
133 - 155	16.0	**724 212 122**	3.800
138 - 160	16.0	**724 212 138**	3.630
158 - 180	16.0	**724 212 154**	4.400
168 - 190	16.0	**724 212 170**	4.400
190 - 210	10.0	**724 212 186**	4.070
195 - 217	10.0	**724 212 202**	4.700
210 - 230	10.0	**724 212 218**	4.900
216 - 238	10.0	**724 212 234**	4.900
225 - 246	10.0	**724 212 250**	5.100
238 - 260	10.0	**724 212 266**	5.100
251 - 271	10.0	**724 212 282**	5.300

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
260 - 280	10.0	**724 212 298**	5.300
269 - 289	10.0	**724 212 314**	5.300
273 - 293	10.0	**724 212 330**	5.300
295 - 315	10.0	**724 212 346**	5.300

PF 1 54 325 009

Multi/Clamp Double length 250 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
88 - 110	16.0	**724 212 059**	4.500
108 - 128	16.0	**724 212 075**	4.700
112 - 134	16.0	**724 212 091**	4.700
120 - 140	16.0	**724 212 107**	4.700
133 - 155	16.0	**724 212 123**	5.200
138 - 160	16.0	**724 212 139**	5.200
158 - 180	16.0	**724 212 155**	5.120
168 - 190	16.0	**724 212 171**	6.000
190 - 210	10.0	**724 212 187**	6.400
195 - 217	10.0	**724 212 203**	6.400
210 - 230	10.0	**724 212 219**	6.600
216 - 238	10.0	**724 212 235**	6.600
225 - 246	10.0	**724 212 251**	6.900
238 - 260	10.0	**724 212 267**	6.900
251 - 271	10.0	**724 212 283**	7.200
260 - 280	10.0	**724 212 299**	7.200
269 - 289	10.0	**724 212 315**	7.200
273 - 293	10.0	**724 212 331**	7.200
295 - 315	10.0	**724 212 347**	7.200
314 - 335	10.0	**724 212 363**	7.400
322 - 344	10.0	**724 212 379**	7.400
334 - 354	10.0	**724 212 395**	7.400
340 - 360	10.0	**724 212 411**	7.400

PF 1 54 325 009

Multi/Clamp Double length 300 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
88 - 110	16.0	**724 212 060**	4.180
108 - 128	16.0	**724 212 076**	4.440
112 - 134	16.0	**724 212 092**	5.300
120 - 140	16.0	**724 212 108**	5.300
133 - 155	16.0	**724 212 124**	5.800
138 - 160	16.0	**724 212 140**	5.500
158 - 180	16.0	**724 212 156**	5.790
168 - 190	16.0	**724 212 172**	5.880
190 - 210	10.0	**724 212 188**	6.190
195 - 217	10.0	**724 212 204**	7.100
210 - 230	10.0	**724 212 220**	7.500
216 - 238	10.0	**724 212 236**	7.500
225 - 246	10.0	**724 212 252**	7.800
238 - 260	10.0	**724 212 268**	7.800
251 - 271	10.0	**724 212 284**	8.900
260 - 280	10.0	**724 212 300**	8.900
269 - 289	10.0	**724 212 316**	8.900
273 - 293	10.0	**724 212 332**	8.900
295 - 315	10.0	**724 212 348**	8.900
314 - 335	10.0	**724 212 364**	9.500
322 - 344	10.0	**724 212 380**	9.500
334 - 354	10.0	**724 212 396**	9.500
340 - 360	10.0	**724 212 412**	9.500
348 - 368	10.0	**724 212 428**	10.200
365 - 385	10.0	**724 212 444**	10.200
376 - 396	10.0	**724 212 460**	10.200
382 - 402	10.0	**724 212 476**	10.200
390 - 410	10.0	**724 212 492**	10.200
404 - 424	10.0	**724 212 508**	11.000
420 - 440	10.0	**724 212 524**	11.000

PF 1 54 325 009

Multi/Clamp Double length 400 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
88 - 110	16.0	**724 212 061**	6.600
108 - 128	16.0	**724 212 077**	6.900
112 - 134	16.0	**724 212 093**	6.900

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
120 - 140	16.0	**724 212 109**	6.900
133 - 155	16.0	**724 212 125**	7.600
138 - 160	16.0	**724 212 141**	7.600
158 - 180	16.0	**724 212 157**	8.800
168 - 190	16.0	**724 212 173**	8.800
190 - 210	10.0	**724 212 189**	9.400
195 - 217	10.0	**724 212 205**	9.400
210 - 230	10.0	**724 212 221**	9.800
216 - 238	10.0	**724 212 237**	9.800
225 - 246	10.0	**724 212 253**	10.200
238 - 260	10.0	**724 212 269**	10.200
251 - 271	10.0	**724 212 285**	11.500
260 - 280	10.0	**724 212 301**	11.500
269 - 289	10.0	**724 212 317**	11.500
273 - 293	10.0	**724 212 333**	11.500
295 - 315	10.0	**724 212 349**	11.500
314 - 335	10.0	**724 212 365**	12.300
322 - 344	10.0	**724 212 381**	12.300
334 - 354	10.0	**724 212 397**	12.300
340 - 360	10.0	**724 212 413**	12.300
348 - 368	10.0	**724 212 429**	13.200
365 - 385	10.0	**724 212 445**	13.200
376 - 396	10.0	**724 212 461**	13.200
382 - 402	10.0	**724 212 477**	13.200
390 - 410	10.0	**724 212 493**	13.200
404 - 424	10.0	**724 212 509**	14.200
420 - 440	10.0	**724 212 525**	14.200
440 - 460	10.0	**724 212 541**	14.200
457 - 477	10.0	**724 212 557**	14.800
468 - 488	10.0	**724 212 573**	14.800
488 - 508	10.0	**724 212 589**	14.800
500 - 520	10.0	**724 212 605**	15.900
520 - 540	6.0	**724 212 621**	15.900
527 - 547	6.0	**724 212 637**	15.900
545 - 565	6.0	**724 212 653**	15.900
555 - 570	6.0	**724 212 669**	15.900
568 - 588	6.0	**724 212 685**	15.900
586 - 606	6.0	**724 212 701**	15.900
600 - 620	6.0	**724 212 717**	17.700
625 - 645	6.0	**724 212 733**	17.700
650 - 670	6.0	**724 212 749**	17.700

PF 1 54 325 009

Multi/Clamp Double length 500 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
88 - 110	16.0	**724 212 062**	8.400
108 - 128	16.0	**724 212 078**	8.800
112 - 134	16.0	**724 212 094**	8.800
120 - 140	16.0	**724 212 110**	8.800

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PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
133 - 155	16.0	**724 212 126**	9.600
138 - 160	16.0	**724 212 142**	9.600
158 - 180	16.0	**724 212 158**	11.200
168 - 190	16.0	**724 212 174**	11.200
190 - 210	10.0	**724 212 190**	12.100
195 - 217	10.0	**724 212 206**	12.100
210 - 230	10.0	**724 212 222**	12.500
216 - 238	10.0	**724 212 238**	12.500
225 - 246	10.0	**724 212 254**	13.000
238 - 260	10.0	**724 212 270**	13.000
251 - 271	10.0	**724 212 286**	15.200
260 - 280	10.0	**724 212 302**	15.200
269 - 289	10.0	**724 212 318**	15.200
273 - 293	10.0	**724 212 334**	15.200
295 - 315	10.0	**724 212 350**	15.200
314 - 335	10.0	**724 212 366**	16.100
322 - 344	10.0	**724 212 382**	16.100
334 - 354	10.0	**724 212 398**	16.100
340 - 360	10.0	**724 212 414**	16.100
348 - 368	10.0	**724 212 430**	17.200
365 - 385	10.0	**724 212 446**	17.200
376 - 396	10.0	**724 212 462**	17.200
382 - 402	10.0	**724 212 478**	17.200
390 - 410	10.0	**724 212 494**	17.200
404 - 424	10.0	**724 212 510**	18.700
420 - 440	10.0	**724 212 526**	18.700
440 - 460	10.0	**724 212 542**	18.700
457 - 477	10.0	**724 212 558**	19.200
468 - 488	10.0	**724 212 574**	19.200
488 - 508	10.0	**724 212 590**	19.200
500 - 520	10.0	**724 212 606**	20.700
520 - 540	6.0	**724 212 622**	20.700
527 - 547	6.0	**724 212 638**	20.700
545 - 565	6.0	**724 212 654**	20.700
555 - 570	6.0	**724 212 670**	20.700
568 - 588	6.0	**724 212 686**	20.700
586 - 606	6.0	**724 212 702**	20.700
600 - 620	6.0	**724 212 718**	22.900
625 - 645	6.0	**724 212 734**	22.900
650 - 670	6.0	**724 212 750**	22.900

PF 1 54 325 009

Multi/Clamp Double length 600 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
314 - 335	10.0	**724 212 367**	19.000
322 - 344	10.0	**724 212 383**	19.000
334 - 354	10.0	**724 212 399**	19.000
340 - 360	10.0	**724 212 415**	19.000
348 - 368	10.0	**724 212 431**	20.500

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
365 - 385	10.0	**724 212 447**	20.500
376 - 396	10.0	**724 212 463**	20.500
382 - 402	10.0	**724 212 479**	20.500
390 - 410	10.0	**724 212 495**	20.500
404 - 424	10.0	**724 212 511**	21.800
420 - 440	10.0	**724 212 527**	21.800
440 - 460	10.0	**724 212 543**	21.800
457 - 477	10.0	**724 212 559**	23.000
468 - 488	10.0	**724 212 575**	23.000
488 - 508	10.0	**724 212 591**	23.000
500 - 520	10.0	**724 212 607**	24.500
520 - 540	6.0	**724 212 623**	24.500
527 - 547	6.0	**724 212 639**	24.500
545 - 565	6.0	**724 212 655**	24.500
555 - 570	6.0	**724 212 671**	24.500
568 - 588	6.0	**724 212 687**	24.500
586 - 606	6.0	**724 212 703**	24.500
600 - 620	6.0	**724 212 719**	27.200
625 - 645	6.0	**724 212 735**	27.200
650 - 670	6.0	**724 212 751**	27.200
705 - 725	4.0	**724 212 767**	19.700
730 - 750	4.0	**724 212 783**	29.200
755 - 775	4.0	**724 212 799**	29.200
805 - 825	3.0	**724 212 815**	30.500
835 - 855	3.0	**724 212 831**	31.500

PF 1 54 325 009

Multi/Clamp Double length 750 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

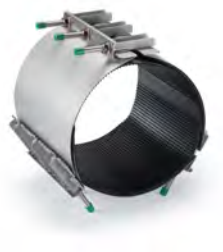
Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
420 - 440	10.0	**724 212 528**	26.300
440 - 460	10.0	**724 212 544**	26.300
457 - 477	10.0	**724 212 560**	28.500
468 - 488	10.0	**724 212 576**	28.500
488 - 508	10.0	**724 212 592**	28.500
500 - 520	10.0	**724 212 608**	30.900
520 - 540	6.0	**724 212 624**	30.900
527 - 547	6.0	**724 212 640**	30.900
545 - 565	6.0	**724 212 656**	30.900
555 - 570	6.0	**724 212 672**	30.900
568 - 588	6.0	**724 212 688**	30.900
586 - 606	6.0	**724 212 704**	30.900
600 - 620	6.0	**724 212 720**	34.500
625 - 645	6.0	**724 212 736**	34.500
650 - 670	6.0	**724 212 752**	34.500
705 - 725	4.0	**724 212 768**	24.900

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
730 - 750	4.0	**724 212 784**	36.500
755 - 775	4.0	**724 212 800**	36.500
805 - 825	3.0	**724 212 816**	38.000
835 - 855	3.0	**724 212 832**	39.000

PF 1 54 325 009



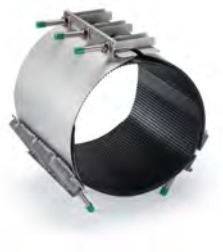
Multi/Clamp Triple length 300 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Triple band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
267 - 297	10.0	**724 213 060**	1.000
300 - 330	10.0	**724 213 076**	1.000
323 - 353	10.0	**724 213 092**	1.000
352 - 382	10.0	**724 213 108**	1.000
378 - 408	10.0	**724 213 124**	1.000
402 - 432	10.0	**724 213 140**	1.000
429 - 459	10.0	**724 213 156**	1.000
456 - 486	10.0	**724 213 172**	1.000
490 - 520	10.0	**724 213 188**	1.000
520 - 550	10.0	**724 213 204**	1.000

PF 1 54 325 009



Multi/Clamp Triple length 400 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Triple band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

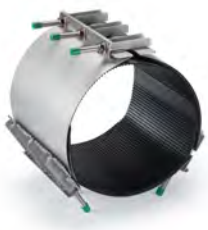
Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
267 - 297	10.0	**724 213 061**	1.000
300 - 330	10.0	**724 213 077**	1.000
323 - 353	10.0	**724 213 093**	1.000
352 - 382	10.0	**724 213 109**	1.000
378 - 408	10.0	**724 213 125**	1.000
402 - 432	10.0	**724 213 141**	1.000
429 - 459	10.0	**724 213 157**	1.000
456 - 486	10.0	**724 213 173**	1.000
490 - 520	10.0	**724 213 189**	1.000

table continued on the next page

PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
520 - 550	10.0	**724 213 205**	1.000
532 - 562	6.0	**724 213 221**	1.000
545 - 575	6.0	**724 213 237**	1.000
570 - 600	6.0	**724 213 253**	1.000

PF 1 54 325 009



Multi/Clamp Triple length 500 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Triple band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
352 - 382	10.0	**724 213 110**	1.000
378 - 408	10.0	**724 213 126**	1.000
402 - 432	10.0	**724 213 142**	1.000
429 - 459	10.0	**724 213 158**	1.000
456 - 486	10.0	**724 213 174**	1.000
490 - 520	10.0	**724 213 190**	1.000
520 - 550	10.0	**724 213 206**	29.000
532 - 562	6.0	**724 213 222**	1.000
545 - 575	6.0	**724 213 238**	1.000
570 - 600	6.0	**724 213 254**	1.000
586 - 616	6.0	**724 213 270**	1.000
609 - 639	6.0	**724 213 286**	1.000
615 - 645	6.0	**724 213 302**	1.000
633 - 663	4.0	**724 213 318**	1.000
640 - 670	4.0	**724 213 334**	1.000
654 - 684	4.0	**724 213 350**	1.000

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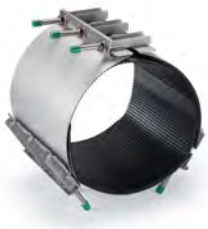

Multi/Clamp Triple length 600 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Triple band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
456 - 486	10.0	**724 213 175**	1.000
490 - 520	10.0	**724 213 191**	1.000
520 - 550	10.0	**724 213 207**	1.000
532 - 562	6.0	**724 213 223**	1.000
545 - 575	6.0	**724 213 239**	1.000
570 - 600	6.0	**724 213 255**	1.000
586 - 616	6.0	**724 213 271**	1.000

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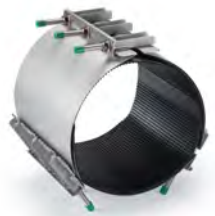
PF 1 54 325 009

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
609 - 639	6.0	**724 213 287**	1.000
615 - 645	6.0	**724 213 303**	1.000
633 - 663	4.0	**724 213 319**	1.000
640 - 670	4.0	**724 213 335**	1.000
654 - 684	4.0	**724 213 351**	1.000
670 - 700	4.0	**724 213 367**	1.000
702 - 732	4.0	**724 213 383**	1.000
711 - 741	4.0	**724 213 399**	1.000
729 - 759	4.0	**724 213 415**	1.000
747 - 777	4.0	**724 213 431**	1.000
780 - 815	4.0	**724 213 447**	1.000
800 - 830	4.0	**724 213 463**	1.000
813 - 843	3.0	**724 213 479**	1.000
830 - 860	3.0	**724 213 495**	1.000
852 - 882	2.0	**724 213 511**	1.000
864 - 894	2.0	**724 213 527**	1.000
900 - 930	2.0	**724 213 543**	1.000
925 - 955	2.0	**724 213 559**	1.000
945 - 975	2.0	**724 213 575**	1.000
970 - 1000	2.0	**724 213 591**	1.000

PF 1 54 325 009



Multi/Clamp Triple length 750 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Triple band clamp with full circle gasket
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
545 - 575	6.0	**724 213 240**	1.000
570 - 600	6.0	**724 213 256**	1.000
586 - 616	6.0	**724 213 272**	1.000
609 - 639	6.0	**724 213 288**	1.000
615 - 645	6.0	**724 213 304**	1.000
633 - 663	4.0	**724 213 320**	1.000
640 - 670	4.0	**724 213 336**	1.000
654 - 684	4.0	**724 213 352**	1.000
670 - 700	4.0	**724 213 368**	1.000
702 - 732	4.0	**724 213 384**	48.000
711 - 741	4.0	**724 213 400**	1.000
729 - 759	4.0	**724 213 416**	1.000
747 - 777	4.0	**724 213 432**	1.000
780 - 815	4.0	**724 213 448**	1.000
800 - 830	4.0	**724 213 464**	1.000
813 - 843	3.0	**724 213 480**	1.000
830 - 860	3.0	**724 213 496**	1.000
852 - 882	2.0	**724 213 512**	1.000
864 - 894	2.0	**724 213 528**	1.000
900 - 930	2.0	**724 213 544**	1.000
925 - 955	2.0	**724 213 560**	1.000
945 - 975	2.0	**724 213 576**	1.000
970 - 1000	2.0	**724 213 592**	1.000

Multi/Clamp Thread (surcharge)

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- The Multi/Clamp single, double and triple can be equipped with a threaded outlet
- To obtain the total product price please take the surcharge for the threaded outlet and the price of the repair clamp
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- Female threaded outlet (other threads or combinations on request)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Size (inch)	min. pipe OD	Length	Code
½	from 48 mm	min. length 150 mm	**thread1/2**
¾	from 48 mm	min. length 150 mm	**thread3/4**
1	from 54 mm	min. length 150 mm	**thread1**
1 ¼	from 76 mm	min. length 150 mm	**thread1.1/4**
1 ½	from 82 mm	min. length 200 mm	**thread1.1/2**
2	from 87 mm	min. length 200 mm	**thread2**
2 ½	from 110 mm	min. length 200 mm	**thread2.1/2**
3	from 130 mm	min. length 300 mm	**thread3**
4	from 155 mm	min. length 400 mm	**thread4**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 1/2"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
68 - 78	16.0	**724 201 061**
88 - 110	16.0	**724 201 073**
108 - 134	16.0	**724 201 097**
133 - 155	16.0	**724 201 133**
159 - 181	16.0	**724 201 169**
168 - 190	16.0	**724 201 193**
190 - 212	16.0	**724 201 205**
216 - 238	16.0	**724 201 217**
238 - 260	16.0	**724 201 241**
267 - 289	16.0	**724 201 253**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 3/4"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
68 - 78	16.0	**724 201 062**
88 - 110	16.0	**724 201 074**
108 - 134	16.0	**724 201 098**
133 - 155	16.0	**724 201 134**
159 - 181	16.0	**724 201 170**
168 - 190	16.0	**724 201 194**
190 - 212	16.0	**724 201 206**
216 - 238	16.0	**724 201 218**
238 - 260	16.0	**724 201 242**
267 - 289	16.0	**724 201 254**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 1"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
68 - 78	16.0	**724 201 063**
88 - 110	16.0	**724 201 075**
108 - 134	16.0	**724 201 099**
133 - 155	16.0	**724 201 135**
159 - 181	16.0	**724 201 171**
168 - 190	16.0	**724 201 195**
190 - 212	16.0	**724 201 207**
216 - 238	16.0	**724 201 219**
238 - 260	16.0	**724 201 243**
267 - 289	16.0	**724 201 255**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 1 1/4"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
88 - 110	16.0	**724 201 076**
108 - 134	16.0	**724 201 100**
133 - 155	16.0	**724 201 136**
159 - 181	16.0	**724 201 172**
168 - 190	16.0	**724 201 196**
190 - 212	16.0	**724 201 208**
216 - 238	16.0	**724 201 220**
238 - 260	16.0	**724 201 244**
267 - 289	16.0	**724 201 256**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 1 1/2"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
108 - 134	16.0	**724 201 101**
133 - 155	16.0	**724 201 137**
159 - 181	16.0	**724 201 173**
168 - 190	16.0	**724 201 197**
190 - 212	16.0	**724 201 209**
216 - 238	16.0	**724 201 221**
238 - 260	16.0	**724 201 245**
267 - 289	16.0	**724 201 257**

PF 1 54 327 011

Multi/Clamp Saddle Studs threaded outlet 2"

Model:

- Saddle with threaded outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Outlet dimension up to 4" available on request
- Lower shell half is without gasket (available on request)
- Other sizes available on request
- Not suitable for the use on plastic pipes
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code
108 - 134	16.0	**724 201 102**
133 - 155	16.0	**724 201 138**
159 - 181	16.0	**724 201 174**
168 - 190	16.0	**724 201 198**
190 - 212	16.0	**724 201 210**
216 - 238	16.0	**724 201 222**
238 - 260	16.0	**724 201 246**
267 - 289	16.0	**724 201 258**

Multi/Clamp Flange (tapping sleeve) length 300 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band saddle with flanged outlet
- Full circle construction for optimal pipe support
- To obtain the total product price, please take the price of the tapping sleeve and add the price for the flange outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	DN (mm)	PN Water (bar)	NBR Code
95 - 104		16.0	**95-104L300N**
98 - 108		16.0	**98-108L300N**
108 - 128		16.0	**108-128L300N**
118 - 138		16.0	**118-138L300N**
133 - 153		16.0	**133-153L300N**
143 - 163		16.0	**143-163L300N**
160 - 180		16.0	**160-180L300N**
180 - 200		16.0	**180-200L300N**
190 - 210		16.0	**190-210L300N**
210 - 230		16.0	**210-230L300N**
230 - 250		16.0	**230-250L300N**
240 - 260		16.0	**240-260L300N**
250 - 270		16.0	**250-270L300N**
270 - 290		16.0	**270-290L300N**
290 - 310		16.0	**290-310L300N**
315 - 335		16.0	**315-335L300N**
335 - 355		16.0	**335-355L300N**
-	350	16.0	**DN350L300N**

Multi/Clamp Flange (tapping sleeve) length 400 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band saddle with flanged outlet
- Full circle construction for optimal pipe support
- To obtain the total product price, please take the price of the tapping sleeve and add the price for the flange outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	DN (mm)	PN Water (bar)	NBR Code
95 - 104		16.0	**95-104L400N**
98 - 108		16.0	**98-108L400N**
108 - 128		16.0	**108-128L400N**
118 - 138		16.0	**118-138L400N**
133 - 153		16.0	**133-153L400N**
143 - 163		16.0	**143-163L400N**
160 - 180		16.0	**160-180L400N**
180 - 200		16.0	**180-200L400N**
190 - 210		16.0	**190-210L400N**
210 - 230		16.0	**210-230L400N**
230 - 250		16.0	**230-250L400N**
240 - 260		16.0	**240-260L400N**
250 - 270		16.0	**250-270L400N**
270 - 290		16.0	**270-290L400N**
290 - 310		16.0	**290-310L400N**
315 - 335		16.0	**315-335L400N**
335 - 355		16.0	**335-355L400N**
-	350	16.0	**DN350L400N**
-	400	16.0	**DN400L400N**
-	450	16.0	**DN450L400N**
-	500	16.0	**DN500L400N**
-	600	10.0	**DN600L400N**
-	700		**DN700L400N**

Multi/Clamp Flange (tapping sleeve) length 500 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band saddle with flanged outlet
- Full circle construction for optimal pipe support
- To obtain the total product price, please take the price of the tapping sleeve and add the price for the flange outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	DN (mm)	PN Water (bar)	NBR Code
95 - 104		16.0	**95-104L500N**
98 - 108		16.0	**98-108L500N**
108 - 128		16.0	**108-128L500N**
118 - 138		16.0	**118-138L500N**

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Range (mm)	DN (mm)	PN Water (bar)	NBR Code
133 - 153		16.0	**133-153L500N**
143 - 163		16.0	**143-163L500N**
160 - 180		16.0	**160-180L500N**
180 - 200		16.0	**180-200L500N**
190 - 210		16.0	**190-210L500N**
210 - 230		16.0	**210-230L500N**
230 - 250		16.0	**230-250L500N**
240 - 260		16.0	**240-260L500N**
250 - 270		16.0	**250-270L500N**
270 - 290		16.0	**270-290L500N**
290 - 310		16.0	**290-310L500N**
315 - 335		16.0	**315-335L500N**
335 - 355		16.0	**335-355L500N**
-	350	16.0	**DN350L500N**
-	400	16.0	**DN400L500N**
-	450	16.0	**DN450L500N**
-	500	16.0	**DN500L500N**
-	600	10.0	**DN600L500N**
-	700		**DN700L500N**
-	750		**DN750L500N**
-	800		**DN800L500N**

Multi/Clamp Flange (tapping sleeve) length 600 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band saddle with flanged outlet
- Full circle construction for optimal pipe support
- To obtain the total product price, please take the price of the tapping sleeve and add the price for the flange outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

Range (mm)	DN (mm)	PN Water (bar)	NBR Code
315 - 335		16.0	**315-335L600N**
335 - 355		16.0	**335-355L600N**
-	350	16.0	**DN350L600N**
-	400	16.0	**DN400L600N**
-	450	16.0	**DN450L600N**
-	500	16.0	**DN500L600N**
-	600	10.0	**DN600L600N**
-	700		**DN700L600N**
-	750		**DN750L600N**
-	800		**DN800L600N**

Multi/Clamp Flange (tapping sleeve) length 750 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- Double band saddle with flanged outlet
- Full circle construction for optimal pipe support
- To obtain the total product price, please take the price of the tapping sleeve and add the price for the flange outlet
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.
- To choose the correct length of Multi/Clamp check our technical information

DN (mm)	PN Water (bar)	NBR Code
400	16.0	**DN400L750N**
450	16.0	**DN450L750N**
500	16.0	**DN500L750N**
600	10.0	**DN600L750N**
700		**DN700L750N**
750		**DN750L750N**
800		**DN800L750N**

Multi/Clamp Flange (flange outlet)

Model:

- To obtain the total product price please add the price of the tapping sleeve
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- To choose the correct length of Multi/Clamp check our technical information

DN (mm)	Drilling pattern	required body length	Total height of the branch and flange (mm)	Code
50	PN 10/16	300 mm	80	**flangeDN50**
65	PN 10/16	300 mm	80	**flangeDN65**
80	PN 10/16	300 mm (400 mm if pipe OD > 300)	100	**flangeDN80**
100	PN 10/16	400 mm	100	**flangeDN100**
125	PN 10/16	400 mm	120	**flangeDN125**
150	PN 10/16	400 mm	130	**flangeDN150**
200	PN 10	500 mm	140	**flangeDN200**
250	PN 10	600 mm	165	**flangeDN250**
300	PN 10	750 mm	165	**flangeDN300**

PF 1 54 325 009

Multi/Clamp Combi Box length 400 mm

Model:

- Suitable for all kinds of pipe material. For use on plastic pipes please consult Georg Fischer Waga N.V.
- A combination of either two or more shell sections enables you to repair pipes from OD 91 mm up to OD 1146 mm
- All metal parts are stainless steel, quality AISI 304 (on request AISI 316)
- The rubber gasket is available in NBR (EPDM on request)
- Water and gas: NBR according to EN 682 (-10°C up to +70°C); potable water: EPDM according to EN 681-1 (-10°C up to +55°C)
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Description	NBR Code	Weight (kg)	EPDM Code
Repair set complete (all shell sections + wooden box)	**724 213 730**	35.000	**724 233 730**
Shell section A	**724 213 746**	5.000	**724 233 746**
Shell section B	**724 213 762**	5.234	**724 233 762**
Shell section C	**724 213 778**	5.572	**724 233 778**
Shell section D	**724 213 794**	6.150	**724 233 794**
Shell section E	**724 213 810**	6.704	**724 233 810**
Wooden box seperate	**724 213 826**	6.000	

Range [mm]	description	PN water [bar]
91 - 98	A	16
111 - 121	B	16
131 - 141	C	16
162 - 172	D	16
193 - 203	E	16
	Shell sections to combine with 1 Multi/Clamp Combi Box:	
213 - 233	A B	16
233 - 253	A C	16
253 - 273	B C	10
264 - 284	A D	10
284 - 304	B D	10
295 - 315	A E	10
304 - 324	C D	10
314 - 334	B E	10
335 - 355	C E	10
354 - 384	A B C	10
386 - 416	A B D	10
406 - 436	A C D	10
416 - 446	A B E	10
426 - 456	B C D	10
436 - 466	A C E	10
456 - 486	B C E	10
467 - 497	A D E	10
487 - 517	B D E	10
508 - 538	C D E	10
527 - 567	A B C D	6
558 - 598	A B C E	6
589 - 629	A B D E	6
609 - 649	A C D E	4
629 - 669	B C D E	4
730 - 780	A B C D E	2
	Shell sections to combine with 2 Multi/Clamp Combi Boxes:	
661 - 701	B D D E	2
720 - 770	E E B A A	2
761 - 811	E E C B A	2
833 - 883	E E D C B	2
853 - 903	E E D C C	2
934 - 994	E E D C B A	2
965 - 1025	E E D D B A	1
1026 - 1086	E E D D C C	1
1076 - 1146	E E D C C B A	1

W400/W410 Drilling Devices

W400 drilling device (3/4" - 2")

PF 1 54 326 005

Basic Drilling Device W400 including ratchet and drill shaft 620 mm (accessories to be added)

Model:

- Including: hex key 3 mm, hex key 6 mm and screwdriver

Description	Code	Weight (kg)
basic device including ratchet and drill shaft	**709 700 000**	8.000

PF 1 54 326 005

Male threaded adaptors for W400 drilling device

Model:

- Suitable to connect to saddles

Description	Code	Weight (kg)
male threaded adaptor 3/4	**709 702 257**	1.440
male threaded adaptor 1	**709 702 258**	1.720
male threaded adaptor 1 1/4	**709 702 259**	1.760
male threaded adaptor 1 1/2	**709 702 260**	1.800
male threaded adaptor 2	**709 702 261**	1.440

PF 1 54 326 005

Mandrel combined with pilot drill

Model:

- mandrel including special pilot drill 6mm with dual retention wires

Description	Code	Weight (kg)
hole saw mandrel 9/16 inch - 1 3/16 inch with retain pilot drill	**709 701 260**	1.000
hole saw mandrel 1 1/4 inch - 6 inch with retain pilot drill	**709 701 261**	1.000

PF 1 54 326 005

Cup drill HSS

Model:

- Suitable for steel and (ductile) cast iron

Inch (inch)	Description	Code	Weight (kg)
11/16	HSS bi-metal cutter 17,5 mm	**709 810 511**	0.300
3/4	HSS bi-metal cutter 19,1 mm	**709 810 512**	0.300
7/8	HSS bi-metal cutter 22,2 mm	**709 810 514**	0.300
15/16	HSS bi-metal cutter 23,8 mm	**709 810 515**	0.300
1	HSS bi-metal cutter 25,4 mm	**709 810 516**	0.300
1 1/8	HSS bi-metal cutter 28,6 mm	**709 810 518**	0.300
1 3/16	HSS bi-metal cutter 30,2 mm	**709 810 519**	0.300
1 1/4	HSS bi-metal cutter 31,8 mm	**709 810 520**	0.300
1 3/8	HSS bi-metal cutter 34,9 mm	**709 810 522**	0.300

table continued on the next page

PF 1 54 326 005

Inch (inch)	Description	Code	Weight (kg)
1 7/16	HSS bi-metal cutter 36,5 mm	**709 810 523**	0.300
1 1/2	HSS bi-metal cutter 38,1 mm	**709 810 524**	0.300
1 3/4	HSS bi-metal cutter 44,5 mm	**709 810 528**	0.300
2	HSS bi-metal cutter 50,8 mm	**709 810 532**	0.300

PF 1 54 326 005

Cup drill HSS carbide tipped

Model:

- Suitable for abrasive materials such as asbestos cement and cement lined (ductile) iron pipes

Inch (inch)	Description	Code	Weight (kg)
3/4	carbide tipped HSS bi-metal cutter 19,1 mm	**709 810 612**	0.300
7/8	carbide tipped HSS bi-metal cutter 22,2 mm	**709 810 614**	0.300
1	carbide tipped HSS bi-metal cutter 25,4 mm	**709 810 616**	0.300
1 1/8	carbide tipped HSS bi-metal cutter 28,6 mm	**709 810 618**	0.300
1 1/4	carbide tipped HSS bi-metal cutter 31,8 mm	**709 810 620**	0.300
1 3/8	carbide tipped HSS bi-metal cutter 34,9 mm	**709 810 622**	0.300
1 1/2	carbide tipped HSS bi-metal cutter 38,1 mm	**709 810 624**	0.300
1 3/4	carbide tipped HSS bi-metal cutter 44,5 mm	**709 810 628**	0.300
2	carbide tipped HSS bi-metal cutter 50,8 mm	**709 810 632**	0.300

PF 1 54 326 005

Pilot drill

Model:

- pilot drill 6 mm with dual retention wires

Description	Code	Weight (kg)
pilot drill 6 mm with dual retention wires	**709 800 006**	0.010

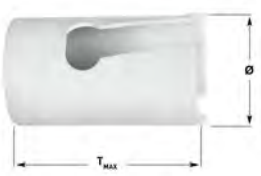
PF 1 54 326 005

Cup drill
Rotec (other sizes on request)

Model:

- Suitable for PE/PVC - non chipless

Inch (inch)	Description	Code	Weight (kg)
11/16	Multi-Purpose cup drill, Tmax=57, ø17 (11/16")	**709 810 711**	0.010
3/4	Multi-Purpose cup drill Tmax=57, ø19 (3/4")	**709 810 712**	0.050
7/8	Multi-Purpose cup drill, Tmax=57, ø22 (7/8")	**709 810 714**	0.070
1	Multi-Purpose cup drill, Tmax=57, ø25 (1")	**709 810 716**	0.080
1 1/4	Multi-Purpose cup drill, Tmax=57, ø32 (1-1/4")	**709 810 720**	0.120
1 1/2	Multi-Purpose cup drill, Tmax=57, ø38 (1-1/2")	**709 810 724**	0.100
1 3/4	Multi-Purpose cup drill Tmax=57, ø44 (1-3/4")	**709 810 728**	0.130
1 7/8	Multi-Purpose cup drill, Tmax=57, ø48 (1-7/8")	**709 810 730**	0.170



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Heavy duty transport / storage box for W400 drilling device

Model:

- Outside dimension transport case: 80 x 40 x 20 cm

Description	Code	Weight (kg)
Heavy duty transport / storage box for W400 drilling device	**709 706 416**	8.100

W410 drilling device (3/4" - 8")

PF 1 54 326 005

Basic Drilling Device W410 including ratchet /(all accessories to be added)

Model:

- Including: hex key 3 mm, hex key 6 mm and screwdriver

Description	Code	Weight (kg)
basic device including ratchet	**709 700 100**	7.800

PF 1 54 326 005

Drill shafts

Model:

- Drill shafts to be selected depending on build up length of your configuration

Description	Code	Weight (kg)
drill shaft 620 mm	**709 700 010**	1.200
drill shaft 775 mm	**709 700 021**	1.500
drill shaft 1070 mm	**709 700 023**	2.070

PF 1 54 326 005

Mandrel combined with pilot drill

Model:

- mandrel including special pilot drill 6mm with dual retention wires

Description	Code	Weight (kg)
hole saw mandrel 9/16 inch - 1 3/16 inch with retain pilot drill	**709 701 260**	1.000
hole saw mandrel 1 1/4 inch - 6 inch with retain pilot drill	**709 701 261**	1.000

PF 1 54 326 005

Flange adaptors

Model:

- Suitable for flange to flange connections
- Not included flange bolts / gasket
- Flange adaptor for W410
- Suitable for MULTI/JOINT® flange adaptor / connection to PE spigot

Description	Drilling pattern	Code	Weight (kg)
flange adaptor DN50	PN16	**709 702 045**	1.850
flange adaptor DN65	PN16	**709 702 046**	2.250
flange adaptor DN80	PN16	**709 702 047**	3.090
flange adaptor DN100	PN16	**709 702 048**	3.840
flange adaptor DN150	PN16	**709 702 050**	6.530
flange adaptor DN200	PN10	**709 702 051**	8.800

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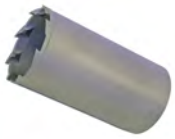


Cup drill
PE chipless Ø45, Ø60, Ø63, Ø80 and Ø84 mm

Model:

- Maximum PE pipe d630 SDR11
- Suitable for under pressure drilling
- Push rod for coupon release out of the cup drill
- For demanding drillings on PE

Description	Code	Weight (kg)
PE cup drill chipless 45 mm x 60 mm	**709 810 410**	0.510
PE cup drill chipless 60 mm x 60 mm	**709 810 412**	0.580
PE cup drill chipless 63 mm x 60 mm	**709 810 414**	0.590
PE cup drill chipless 80 mm x 60 mm	**709 810 415**	0.880
PE cup drill chipless 84 mm x 60 mm	**709 810 416**	0.910
PE cup drill chipless 45 mm x 120 mm	**709 810 420**	0.800
PE cup drill chipless 60 mm x 120 mm	**709 810 422**	0.890
PE cup drill chipless 63 mm x 120 mm	**709 810 424**	0.890
PE cup drill chipless 80 mm x 120 mm	**709 810 425**	1.340
PE cup drill chipless 84 mm x 120 mm	**709 810 426**	1.370
PE cup drill push rod	**709 700 024**	0.400

PF 1 54 326 005

Pilot drill

Model:

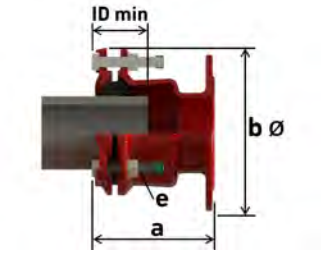
- pilot drill 6 mm with dual retention wires

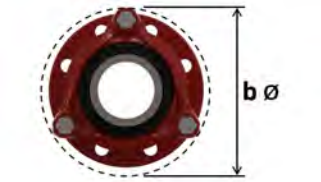
Description	Code	Weight (kg)
pilot drill 6 mm with dual retention wires	**709 800 006**	0.010

MULTI/JOINT® 3057 Plus Wide Range
Flange adaptor, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas (EPDM only for potable water)
- Ductile iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (0°C up to +50°C)
- Angular deflection of max. 8° per socket at installation (based on the middle of the range)
- Stainless steel A4 quality (AISI 316) Uni/Fiksers
- Stainless steel A2 quality (AISI 304) or A4 quality (AISI 316) bolts, nuts and washers
- Hygiene protection included DN50 - DN825





Installation instruction:

- Read the user manual
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Please note, when using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of the insert stiffener MJ DN625 - DN800 (see accessories) is mandatory
- * DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

Note:

ID min. = minimum insertion depth
DN625 - DN825 for water applications only

DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF
50	46 - 71	50	PN16	**709 355 210**	1 54 323 061
65	63 - 90	60/65	PN16	**709 355 212**	1 54 323 061
80	84 - 105	80	PN16	**709 355 214**	1 54 323 061
100	104 - 132	100	PN16	**709 355 216**	1 54 323 061
150	154 - 192	150	PN16	**709 355 220**	1 54 323 061
200	192 - 232	200	PN10/PN16	**709 355 224**	1 54 323 061

DN (mm)	a (mm)	b (mm)	ID min. (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange	Weight (kg)
50	165 - 187	170	84	3xM12	16	8	4	4.700
65	170 - 193	191	84	3xM12	16	8	4	5.700
80	170 - 192	210	84	3xM12	16	8	8	6.800
100	173 - 199	241	90	3xM16	16	8	8	8.000
150	211 - 248	312	110	4xM16	16	8	8	14.200
200	221 - 258	371	110	6xM16	16	8	8/12	21.600

PF 1 54 326 005

Heavy duty transport / storage box for W410 drilling device

Model:

- Outside dimension transport / warehouse box: 120 x 40 x 40 cm

Description	Code	Weight (kg)
Heavy duty transport / storage box for W410 drilling device	**709 706 414**	15.500

Technical information

Terms and definitions

Terms and definitions used throughout this technical manual comply (as much as possible) with the latest terms and definitions used in the European standards.

Allowable operating pressure (PFA)
Internal pressure, exclusive of surge that a component can safely withstand in permanent service (see EN 805), often referred to as working pressure.

Allowable test pressure (PEA)
Maximum hydrostatic pressure that a newly installed component can withstand for a relatively short duration, when either fixed above ground level or laid and backfilled underground in order to measure the integrity and tightness of the pipeline (see EN 805), often referred to as test pressure. **Note:** This test pressure is different from the system test pressure (STP), which is related to the design pressure of the pipeline, and is intended to ensure the integrity and leak tightness of a certain installed fitting.

Nominal pressure (PN)
Numerical designation expressed by a number, which is used for reference purposes.

Nominal size (DN diameter nominal)
Numerical designation of size, which is common to all components in a piping system. It is a convenient round number for reference purposes and is only loosely related to manufacturing dimensions (see EN ISO 6708).

Outside diameter (OD)
Outside diameter of the pipe(s) to be connected.

Depth of engagement (DSE)
Minimum distance between any point of the spigot end and the internal face of the joint gasket.

Ductile iron
Cast iron used for pipes, fittings and accessories in which graphite is present, mainly in spheroidal form.

Fitting
Casting other than a pipe, which allows pipeline deviation, change of direction or bore. In addition flanged socket pieces, flanged spigot pieces and collars are also classified as fittings.

Flange
Flat circular end of a fitting or pipe extending perpendicular to its axis, with bolt holes equally spaced in a circle.

Gasket
Sealing component of a joint.

Joint
Connection between the ends of two pipes and/or fittings in which a gasket is used to effect a seal.

Joint angular deflection
Angle between the axis of two connected pipe components, which a flexible joint can accommodate.

Joint gap (JG)
Maximum axial distance between any point of the spigot ends of the pipes to be connected (coupling), or, maximum axial distance between any point of the spigot end of the pipe and the flange face (flange adaptor).

Wide range coupling
Fitting intended for use with pipes of various materials which:
- is used in a pipeline to make the connection between two spigots of pipes, fittings or valves
- allows for radial and axial displacements in order to facilitate easy assembly.

Wide range flange adaptor
Fitting intended for use with pipes of various materials which:
- is used in a pipeline to make the connection with a spigot of a pipe or a fitting and the flange of another component of the pipeline (e.g. pipe, fitting, valve)
- allows for radial and axial displacements in order to facilitate easy assembly.

Wide range stepped or reducer coupling
Large tolerance coupling intended for use with pipe components of different nominal sizes.

Performance test
Proof of design test, which is done once and is repeated only after changing the design.

Restraint flexible joint
Flexible joint in which a means is provided to prevent separation of the assembled joint.

Dimensions and units
All dimensions used in this catalogue or other documentation are indicated in mm and/or inches and are specified as nominal or standard sizes. We reserve the right to alter design of fittings.

Pipe outside diameters

Coupling DN	Steel imp.	Steel metric	PVC/PE metric	PVC/PE imp.	Ductile iron cl. 18	Grey cast iron Brit.	AC cl 6/12
50	60.3	60.3/66	50/63	60.3	66	68	-
65	76.1	76.1	75	76.1	82	-	-
80	88.9	88.9	90	88.9	98	95	124
100	114.3	108	110/125	114.3	118	122	149/151
125	139.7	133	140	139.7	144	148	174
150	168.3	159	160/180	168.3	170	174	228
200	219.1	211/216	200/225	219.1	222	228	-
225	244.5	241	250	244.5	248	257	268/280
250	273	267	280	273	274	284	334
300	323.9	316/318	315/355	323.9	326	337	-
350	355.6	368	355	355.6	378	-	-
400	406.4	419	400	406.4	429	-	-
425	457	-	450	457	-	442	-
450	457	464/470	450	457	480	-	-
475	508	-	500	508	-	495	-
500	508	514/521	500	508	532	-	-
550	559	559	560	-	558	548	550
600	609.6	622	630	609.6	635	-	-
625	660	-	630	-	635	650	638
675	-	-	-	-	-	667	-
700	711	-	710	-	738	703/720/729	-
750	762	-	-	762	-	-	-
800	813	-	800	-	-	807/826	-
825	864	-	-	-	842	860	850

Coupling DN	AC cl. 10	AC cl. 10 rough approx.	AC cl. 12	AC cl. 12 rough approx.	AC cl. 18	AC cl. 24
50	68	-	-	-	-	-
65	-	72	74	78	-	86
80	98	102	-	-	86	-
100	120	124	104/124	108/128	106/126	106/126
125	145	149	149	153	153	-
150	176	180	180	184	178	157/184
200	-	-	-	-	-	-
225	232	236	238	242	234	244
250	284	288	292	296	288	296
300	340	346	350	356	344	354
350	-	-	-	356	344	354
400	-	402	410	416	402	414
425	452	460	-	-	456	-
450	452	460	468	476	456	468
475	510	-	-	-	508	-
500	510	518	522	530	508	522
550	568	576	580	-	564	578
600	-	-	-	-	-	-
625	-	-	651	-	-	-
675	-	-	-	-	668	691
700	-	-	-	-	-	-
750	-	-	-	-	-	-
800	-	-	-	-	-	-
825	-	-	868	-	-	-

Georg Fischer pipe and fittings O.D. chart

MULTI/JOINT®

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+GF+

Pipe chart imperial

Nominal size		MULTI/JOINT®		Steel size			Ductile size			Cast size	Sewer pipe	Asbestos cement size					
Inch	mm	Range (inch)	Range (mm)	Std steel	IPS PVC	IPS PE	Ductile iron	C900 C909 PVC	DIPS PE	Cast iron	SDR35	A/C ME Class 100	A/C ME Class 150	A/C ME Class 200	A/C RB Class 100	A/C RB Class 150	A/C RB Class 200
2	50	1.811-2.795	46-71	2.38													
2 ½	65	2.480-3.543	63-90	2.88													
3	80	3.307-4.133	84-105	3.50			3.96			3.96		3.74	3.84		4.00	4.10	4.29
4	100	4.094-5.196	104-132	4.50			4.80			5.00	4.22	4.64	4.81		4.79-5.26	4.97-5.32	5.22-5.57
5	125	5.196-6.102	132-155	5.56													
6	150	6.062-7.559	154-192	6.63			6.90			7.10	6.28	6.91			7.05-7.40	7.07-7.37	7.26-7.60
8	200	7.559-9.133	192-232	8.63			9.05			9.30	8.40	9.11			9.22-9.57	9.27-9.62	9.39-9.79
9	225	9.050-10.551	230-268														
10	250	10.500-12.204	267-310	10.75			11.10			11.40	10.50	11.24	11.66		11.25 - 11.77	11.82 - 12.12	11.77 - 12.12
12	300	12.401-14.015	315-356	12.75			13.20			13.50	12.50	13.44	13.92		13.37 - 14.04	14.08 - 14.38	14.03 - 14.38
14	350	13.858-15.472	352-393	14.00			15.30			15.65		15.07	16.22		15.36 - 15.80	16.38 - 16.73	16.44 - 16.88
16	400	15.433-17.047	392-433	16.00			17.40			17.80		17.15	18.46		17.50 - 17.94	18.62 - 18.97	18.74 - 19.19
17	425	17.000-18.267	432-464														
18	450	17.716-18.976	450-482	18.00			19.50			19.92	18.70	19.90	20.94	22.18	20.44	21.20	
19	475	18.937-20.196	481-513														
20	500	19.685-20.944	500-532	20.00			21.60			22.06		22.12	23.28	24.66	22.50	23.54	
22	550	21.574-22.834	548-580														
24	600	23.818-25.078	605-637	24.00			25.80			26.32	24.80	26.48	27.96	29.62	27.17	28.22	
25	625	24.803-26.063	630-662														
27	675	26.181-27.441	665-697														
28	700	27.913-29.173	709-741														
30	750	29.331-30.591	745-777	30.00			32.00			32.40 (C) 32.74 (D)	32.00	33.12	35.00	37.06			
32	800	31.456-32.740	799-831														
33	825	32.952-34.212	837-869														

Please note that actual pipe outside diameters can vary. Please verify the exact pipe O.D. before ordering fittings. The fittings are also suitable for pipe materials that are not listed. Please contact us for more information.
MULTI/JOINT® restraint version for water applications: 2" - 16" = wp 232 psi*, 17" - 33" = wp 150 psi

* 14" and 16" 150 psi for plastic pipes

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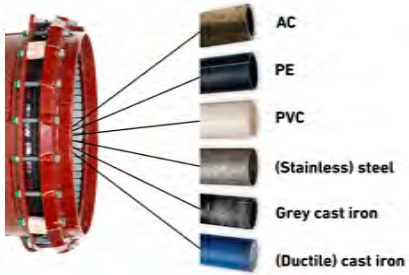
Suitable for all materials



Installation Torque

MULTI/JOINT® size: DN	Inch	Nm	ft-lbf
50	2"	30	20
65	2,5"	40	30
80	3"	60	45
100-125	4-5"	100	75
150-200	6-8"	120	90
225-600	9-24"	140	100
625-825	25"- 33"	140 (non metal) 200 (metal)	100 (non metal) 150 (metal)

Pipe connection, plastic to AC. These pipes have various outside diameters. MULTI/JOINT® 3000 Plus which 'fits and grips all' turned out to be the perfect solution.

Material specifications

Ductile iron

Conforming to EN-GJS-450-10 HB200 (GGG 45). General description: cast iron (used for pipes, fittings and accessories) in which graphite is present mainly in spheroidal form.

MULTI/JOINT®

Mechanical properties GGG45	**EN 1563: 2018**
Symbol	EN-GJS-450-10 HB 200
Tensile strength R_m	min. 450 N/mm²
0,2% Proof Stress $R_{p0,2}$	min. 310 N/mm²
Elongation at break	min. 10%
Modulus at elasticity	169 GN/mm2
Predominant structure	Ferrite

Steel 37-2, ASTM A108

Conforming to DIN 1.0112, BS 970 080A17. General description: medium low-carbon steel with a good weldability and slightly better machine-ability.

Mechanical properties	**ISO R 1038**
Hardness, Brinell	126
Tensile strength, ultimate	140 N/mm²
Tensile strength yield	370 N/mm²
Elongation at break	15% in 50 mm
Modulus of elasticity	205 GPa typical for steel

Stainless steel AISI 304, A2 quality X 5CrNi 189

Conforming to DIN 1.4301, ISO 683/13 11. General description: austenitic CR-Ni stainless steel. High ductility, excellent drawing, forming and spinning properties. Essentially non-magnetic, becomes slightly magnetic when cold worked. Chemical resistance: resists most oxidizing acids and salt spray. Low carbon content means less carbide precipiation in the heat-affected zone during welding and a lower susceptibility to intergranular corrosion.

Thermal properties

CTE, linear	17.3 µm/m- °C
20 °C	from 0-100 °C
Modulus of elasticity	193-200 GPa

Mechanical properties AISI 304

Hardness, Brinell	123 converted from Rockwell B hardness
Tensile strength, ultimate	565 N/mm²
Tensile strength yield	310 N/mm²
Elongation at break	70% in 50 mm

Stainless steel AISI 316, A4 quality X 5CrNiMo 17122

Conforming to DIN 1.4401, ISO 6931. General description: molybdenum content increases resistance to marine environments. High creep strength at elevated temperatures and good heat resistance Biocompatible. Fabrication characteristics are similar to types 304.

Thermal properties

CTE, linear	17.3 µm/m- °C
20 °C	from 0-100 °C

Mechanical properties AISI 316

Hardness, Brinell	190
Tensile strength, ultimate	620 N/mm²
Tensile strength yield	415 N/mm²
Elongation at break	45% in 50 mm
Modulus at elasticity	205 GPa

Rubber

Rubbers are available in many shapes and qualities. Rubbers are an essential component of fittings and valves in pipeline constructions. Depending on the transported media and temperature, a choice has to be made for a sealing material. All the different materials have their own specific quality and applications.

The basic understandings

There still exists some confusion regarding the material rubber and the methods by which products are manufactured of it. Natural or synthetic rubber is combined with several chemicals through mixing and rolling, resulting in the socalled non vulcanised rubber mixture. The added chemicals are often more important than the rubber raw material, for characteristics of the final product. Such a rubber mixture, a viscous, plastic

mass, will be processed further into the required product, by a variety of methods. To form the product to its final shape, moulds are required to shape the material either by transfer moulding machines or compression presses. The rubber mixture is introduced in the mould under pressure, at a temperature of about 150 °C, resulting in a chemical reaction, which transforms the mixture into a formed, elastic product. One should be fully aware of the required quality standard, in order to decide on the compound to be used.

NBR

Nitrile Butadiene Rubber. Rubber seals should conform to certain requirements, such as:

NEN 5601	Hardness with shore A
NEN-ISO 37	Determination tension and stress properties
NEN-ISO 48	Hardness with 1 RHD
NEN-ISO 188	Tests for accelerated ageing
NEN-ISO 815	Determination of permanent deformation
NEN-ISO 816	Determination of abrasion strength
NEN-ISO 1431	Determination of ozone resistance
EN-ISO 1817	Determination of resistance against fluids
NEN-ISO 2285	Determination of permanent stretch at temperature

NBR rubber is eminently resistant against gas, oil, grease, petrol and solvents. The resistance is strongly dependent on the Acrylonitril percentage; the best results are achieved with high percentages. However the elasticity, the resistance against permanent transformation and the low temperature resistance will decrease. The material is sensitive to corrosion by ozone. At lower temperatures, NBR will stiffen. Depending on the mixture, the maximum temperature for use can be up to around 90 °C. By complete immersion in for example oil, NBR can be used up to around 120 °C. NBR is also suitable for use in drinking and waste water systems. All NBR seals used by Georg Fischer Waga N.V. meet the requirements of EN 682 GB for gas applications, and are suitable for use in drinking water systems.

Application NBR	**Gas-, drinking- and waste water systems**
Temperature	-5 °C to +50 °C
Hardness	60 to 70 IRHD

EPDM

Ethylene-propylene-diene-monomer rubber. By copolymerisation of ethane and propane, an elastomer arises without double bindings, that can only be vulcanised with peroxides. If with polymerisation a third monomer is built in, the elastomer can be vulcanised with sulphur (EPDM). EPDM is very well resistant against weather influences in general and ozone especially. Besides that, the material is excellently resistant against high temperatures, hardly sensitive to corrosion, and resistant against free-basing, acid and solvents. Depending on the mixture and type of vulcanisation, the maximum temperature for use of EPDM is around 120 °C. All EPDM seals used by Georg Fischer Waga N.V. meet the requirements of EN 681-1/ WA.

Application EPDM	**Drinking water**
Temperature	0 °C to +50 °C
Hardness	70 IRHD

Perbunan

All Perbunan seals used by Georg Fischer Waga N.V. meet the requirements of EN 682 for gas applications and are suitable for use in drinking water systems.

Application Perbunan	**Gas-, drinking- and waste water systems**
Temperature	-30 °C to +100 °C
Hardness	approx. 60 shore A

Guidance on storage of rubber seals

In case there is any doubt about the suitability of the rubber sealing for certain applications, please contact us. The rubber seals should:

- have a storage temperature below 25 °C and preferably below 15 °C,
- be protected from light, in particular strong sunlight and artificial light with a high UV content,
- not be stored in a room with any equipment capable of generating ozone, e.g. Mercury vapour lamps, high voltage electrical equipment, which may give rise to electrical sparks or silent electrical discharges,
- be stored in a relaxed condition free from tension, compression or other deformation,
- be maintained in a clean condition.

Coatings

Coating for corrosion protection

To ensure a durable, high quality corrosion protection of castings (and other metals), coatings must be resistant to temperature changes and the effects of weather and other environmental influences such as moisture, industrial gases etc., which stress the casting. The coating must ensure a completely sealed surface without porous areas. A protective coating prevents corrosion and the formation of corrosion products which, when carried along the pipeline, could lead to disruption at other points. A smooth surface reduces friction between the transported medium and the fitting. Encrustation by salts or organic materials is avoided.

Epoxy coatings

Coatings on the basis of epoxy resin are the best way of protecting castings. Epoxy powder coatings offer long-term reliability. The coating protects the entire surface area, with a film thickness of minimum 250 µm. It has no pinholes, tested with 3 kV. The epoxy resin technology uses less energy compared to other coating processes, as the parts are only heated up to approximately 200 °C. The application processes of epoxy coatings, Fluidised Bed Coating or Electro static Spray Application, allow automatic manufacturing processes and result in a homogeneous layer thickness inside and outside of the fittings, formed by one material without discontinuity. Consequently it offers excellent edge coverage. We were one of the first coupling manufacturers who started to have their product protected with an epoxy coating ever. Since we introduced the epoxy coated couplings in the beginning of 1987, we have built up a lot of experience and know-how. Within the European Standard work groups, the tendency is very clearly towards epoxy coatings instead of other coatings. As a member of GSK, Georg Fischer Waga N.V. contributes to lifting the standards for epoxy coating used in the (utility) market.

Resicoat® RT 9000 R4 (red)

Resicoat® has a very high durability. It shows very high impact resistance and offers a good electrical insulation. Values measured on blast cleaned cast iron.

Resicoat®	Technical data
Minimum thickness	250 µm according to GSK
Colour	Ruby Red, RAL 3011
Basis	Epoxy resin
Impact resistant	20 joule at 23 °C according to DIN 30671
Porosity	0 (zero) 3 kV test
Elasticity	5% at 23 °C according to DIN 30671 and DIN 30677-25
Flexibility	11% at 23 °C according to ASTM 522
Pressure resistance	100 µ at 90 °C according to DIN 30671
Hardness	Shore D 98 / > 100 according to EN ISO 2815
Adhesion	> 20 N/mm2 according to DIN 53232 and > 16 MPa according to DIN ISO 4624
Salt spray test	> 720 hours according to ASTM B 117
Maximum temperature	135 °C according to VDE 0368
Edge coverage	Excellent
CD-properties	Excellent at 30 days, 23 °C
Chemical resistance	pH 2 up to pH 13
Breakdown voltage	> 3 kV at 250 µm according to ISO 8130-2
Water absorption	100 days, 23 °C < 2% according to DIN 53495 100 days, 65 °C < 3% according to DIN 53495
Water immersion (5 y.)	no blisters ISO 7253
Cathodic disbandment test	at 23 °C < 10 mm DIN 30677-2

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

The fitting gets dipped into the Resicoat® epoxy powder. The pre-heated parts causes the powder to fusion bond with the metal permanently. The coating is GSK approved and 100% safe for drinking water

GSK

The GSK, Quality Association for Heavy Duty Corrosion Protection of Powder Coated Valves and Fittings, was founded in 1993 in order to fulfil the growing quality requirements for pipelines in many European countries. Today the GSK has approximately 50 members, all leading European manufacturers of fittings and valves, engineering companies and producers of fusion bonded epoxy powder coatings. The epoxy powder coating of valves and fittings is the ideal technology for long-term corrosion protection and involves the highest levels of quality control in their manufacture. GSK is recognised by RAL (German Institute for Quality Assurance and Quality Marks) and sets the quality and testing standards for machinery, materials, processes and quality assurance in the epoxy coatings technology. The regulations of the GSK not only meet the requirements of the relevant national and international standards (e.g. DIN, ISO) but also exceed them. The fixed quality level serves as a reliable standard for builders, engineers, construction workers and manufacturers. A safe and consistent quality fulfils high demands. The quality is controlled by an independent test laboratory: MPA Germany.

Approvals

A wide range of approvals assures the suitability in contact with gas and drinking water. The tests include water purity and bacterial attack. Furthermore the coating meets the requirements specified for use in waste water and gas pipe systems. The coating also meets the requirements of Kest SFW 2.0. Resicoat® R4 epoxy resin carries over 80 drinking water approvals. Some of these include: Belgaqua (Belgium), DGS (France), KTW (Germany), KIWA (the Netherlands), NSF Standard 61 (USA), WRAS (United Kingdom) as well as drinking water approvals in Austria, Switzerland and the Czech Republic. And last but not least the Resicoat® R4 meets the requirements of DIN 30677, 30677 T1 + T2, DIN 3476 and passes the GSK standard.

Coating application process

Before the fittings are coated, they are cleaned, and then grid-blasted according to class SA 2 ½. Both application techniques, Fluidised Bed Coating or Electrostatic Spray Application, are used to apply the coating to our fittings.

Electrostatic spray application

The powder is applied by an electrostatic spray gun, either manually or by a robot.

Fluidized bed coating

The powder melts onto the pre heated grid blasted fitting and excessive powder falls off, helped by movement of the coated part.

Anti friction coating

Galling or fretting is a severe form of adhesive wear, which occurs during sliding contact of one surface relative to another. Clumps of one part may stick to the mating part and break away from the surface. This is also the case with stainless steel. To prevent this problem, anti friction coatings can be used. Our stainless steel A2 and A4 bolts are coated with Lubo anti friction coating.

Lubo coating

In order to prevent friction, the stainless steel bolts are coated with Lubo coating, a low friction coating applied to threads. This is a dry lubricant and has the property of reducing the torque tension scatter during tightening. It is also used to prevent problems caused by weld splatter obstructing the threads of weld nuts during their placement and it eliminates the need for masking or cleaning when painted, since paint will not adhere to the coating.

Passivated nuts

Another anti friction measure is the use of passivated nuts. Here, another zinc layer lubricates the thread reducing friction.

GSK

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

EN14525 KIWA, SVGW & ÖVGW

AWARD CERTIFICATE

Production heavy corrosion protection of valves and fittings

The Quality Association for Heavy Duty Corrosion Protection of Valves and Fittings by Powder Coating e.V. (GSK) awards based on the test report of the externally supervising body presented to the Quality Committee and on the resolution of the Executive Committee of GSK for the coating procedure for the production of heavy corrosion protection for valves and fittings and for the product families mentioned in the appendix to the company:

Georg Fischer Waga N.V.
Lange Veenteweg 19, 8161PA Epe, NETHERLAND

the right to use the quality mark with the performance-related addition RAL-GZ 662/2.

The quality mark is certified by the Institute for Quality Assurance and Certification e.V. (RAL) and protected by registration at the German Patent and Trademark Office as a collective trademark (EU trademark 009300138).

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

The products, which were manufactured according to the quality and test regulations (GPB) of the GSK, are designated as product families by the enterprise to the association`s office and listed in the appendix and on the GSK homepage (www.gsk-online.de). They receive the following marking:

RAL GSK
GSK-ID:
(four-digit number assigned by the GSK)

This certificate is valid until 31st December 2024

Schwäbisch Gmünd, the 31st December 2021

Managing Director

Not valid without annex
The product families must be listed in the certificate. The holder of the quality mark informs GSK about the inclusion of new products or changes to existing products in the product approval, and GSK in turn informs the testing institutes. The current list of product families manufactured in GSK quality can be found on the GSK website (www.gsk-online.de).

Gütegemeinschaft
Schwerer Korrosionsschutz
von Armaturen und Formstücken durch Pulverbeschichtung e.V.

Quality Assurance Association for
Heavy-Duty Corrosion Protection
of Valves and Fittings with Powder Coating (GSK e.V.)

Mitglied bei/Member of: RAL

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

VERLEIHUNGSURKUNDE

Herstellung Schwerer Korrosionsschutz von Armaturen und Formstücken

Die Gütegemeinschaft Schwerer Korrosionsschutz von Armaturen und Formstücken durch Pulverbeschichtung e.V. (GSK) verleiht aufgrund des dem Güteausschuss vorliegenden Prüfberichts der fremdüberwachenden Stelle und des Beschlusses des Vorstandes der GSK für das Beschichtungsverfahren zur Herstellung von Schwerem Korrosionsschutz für Armaturen und Formstücke und für die im Anhang genannten Produktfamilien dem Betrieb

Georg Fischer Waga N.V.
Lange Veenteweg 19, 8161PA Epe, Niederlande

das Recht das Gütezeichen mit dem leistungsbezogenen Zusatz RAL-GZ 662/2 zu führen.

Das Gütezeichen ist vom Institut für Gütesicherung und Kennzeichnung e.V. (RAL) anerkannt und durch Eintragung beim deutschen Patent- und Markenamt als Kollektivmarke (EU-Marke 009300138) geschützt.

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN

Die Produkte, die nach den Voraussetzungen der Güte- und Prüfbestimmungen (GPB) der GSK gefertigt wurden, sind als Produktfamilien vom Unternehmen der Geschäftsstelle benannt, und im Anhang und auf der GSK-Homepage (www.gsk-online.de) aufgeführt. Sie erhalten folgende Kennzeichnung:

RAL GSK
GSK-ID:
(vierstellige von der GSK vergebene Nummer)

Diese Urkunde ist gültig bis: 31. Dezember 2024

Schwäbisch Gmünd, den 31. Dezember 2021

Geschäftsführer

Ohne Anhang nicht gültig
Die Produktfamilien müssen in der Bescheinigung aufgeführt sein. Der Verwender des Qualitätszeichens informiert die GSK über die Aufnahme neuer Produkte oder Änderungen an bestehenden Produkten in die Produktzulassung, und die GSK informiert seinerseits die Prüfinstitute. Die aktuelle Liste der in GSK-Qualität hergestellten Produktfamilien ist auf der GSK-Website (www.gsk-online.de) zu finden.

Gütegemeinschaft Schwerer Korrosionsschutz von Armaturen und Formstücken durch Pulverbeschichtung e.V.
Quality Assurance Association for Heavy-Duty Corrosion Protection of Valves and Fittings with Powder Coating (GSK e.V.)

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Ust.IdNr. DE 262341992
Steuer-Nr. 143/216/51152

Technical specification flanges

Flanged connections are one of the oldest methods of connecting pipes and/or fittings together. One of the first flanged connections dates from the 17th century and was described in a standard for the first time in 1882. In 1926 the first material independent standard for mating dimension of flanges was published. These standard sizes made it possible to connect two flanges, independent of type, within the same DN (nominal size) and PN (pressure class) together regardless the material of which the flange was made from.

Flange mating dimensions

The mating dimensions describe the interchangeability between flanges within the same DN and PN. The mating dimensions are described by:

- diameter of bolt circle (pitch circle)
- number of bolts (pitch)
- diameter of bolt hole (bolt size)

The mating dimensions, which are used in our products, are standard PN 10 and PN 16 according:

- EN 1092-2, ISO 2531, DIN 2501
- DIN 28604 / 28605 and other
- EN-ISO-DIN orientated standards. This secures the interchangeability with BS 4504: Section 3.2:1989 up to DN300

Drilling patterns

Other standards can be supplied as long as they are allowed within the physical dimensions of the flange (e.g. mating dimensions).

Physical dimensions

Other physical dimensions of the flange determine the strength of the flange. This strength is depending on the type of material of which the flange is made of. Physical dimensions are:

- the flange diameter
- the flange thickness
- the diameter and height of possible flange facing
- concentrically grooves

The flanges used in our products are all dimensioned type B (raised face) according to EN 1092-2.

Flange facing

All flange facings in our cast iron product lines are standard equipped with concentric grooves. These grooves, opposite to flat facings, give a ring tightening force to the flange gasket rather than a faced tightening. This ensures a heavy duty performance with high life expectancy in combination with rubber flange gasket.

DN (mm)

PN6		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D	130	140	150	160	190	210	240	265	320		375	440	490		540		645		755	860		975	1075	1175	1405
Diameter of bolt circle	K	100	110	120	130	150	170	200	225	280		335	395	445		495		600		705	810		920	1020	1120	1340
Number of bolts	N	4	4	4	4	4	4	8	8	8		12	12	12		16		20		20	24		24	24	28	32
Diameter of bolt hole	L	14	14	14	14	19	19	19	19	19		19	23	23		23		23		28	28		31	31	31	34
Nominal size bolts		M12	M12	M12	M12	M16	M16	M16	M16	M16		M16	M20	M20		M20		M20		M24	M24		M27	M27	M27	M30

DN (mm)

PN10		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D									340		395	445	505		565	640	670		780	895		1015	1115	1230	1455
Diameter of bolt circle	K									295		350	400	460		515	565	620		725	840		950	1050	1160	1380
Number of bolts	N						See PN 16			8		12	12	16		16	20	20		20	24		24	28	28	32
Diameter of bolt hole	L									23		23	23	23		28	28	28		31	31		34	34	37	41
Nominal size bolts										M20		M20	M20	M20		M24	M24	M24		M27	M27		M30	M30	M33	M36

DN (mm)

PN16		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D	See PN 40		175	185	200	220	250	285	340		405	460	520		580	640	715		840	910		1025	1125	1255	1485
Diameter of bolt circle	K			135	145	160	180	210	240	295		355	410	470		525	585	650		770	840		950	1050	1170	1390
Number of bolts	N			4	4	8	8	8	8	12		12	12	16		16	20	20		20	24		24	28	28	32
Diameter of bolt hole	L			19	19	19	19	19	23	23		28	28	28		31	31	34		37	37		41	41	44	50
Nominal size bolts				M16	M16	M16	M16	M16	M20	M20		M24	M24	M24		M27	M27	M30		M33	M33		M36	M36	M39	M45

DN (mm)

PN25		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D							270	300	360		425	485	555		620		730		845	960		1085	1185	1320	1530
Diameter of bolt circle	K							220	250	310		370	430	490		550		660		770	875		990	1090	1210	1420
Number of bolts	N						See PN 40	8	8	12		12	16	16		16		20		20	24		24	28	28	32
Diameter of bolt hole	L							28	28	28		31	31	34		37		37		41	44		50	50	57	57
Nominal size bolts								M24	M24	M24		M27	M27	M30		M33		M33		M36	M39		M45	M45	M52	M52

DN (mm)

PN40		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D	150	165	175	185	200	235	270	300	375		450	515	580		660		755		890	995		1140	1250	1360	1575
Diameter of bolt circle	K	110	125	135	145	160	190	220	250	320		385	450	510		585		670		795	900		1030	1140	1250	1460
Number of bolts	N	4	4	8	8	8	8	8	8	12		12	16	16		16		20		20	24		24	28	28	32
Diameter of bolt hole	L	19	19	19	19	19	23	28	28	31		34	34	37		41		44		50	50		57	57	57	62
Nominal size bolts		M16	M16	M16	M16	M16	M20	M24	M24	M27		M30	M30	M33		M36		M39		M45	M45		M52	M52	M52	M56

DN (mm)

DIN 1882		40	50	60	65	80	100	125	150	200	225	250	300	350		400	450	500		600	700		800	900	1000	1200
Outside diameter flange	D		160			200	230	260	290	350		400	450	520		575	630	680		790						
Diameter of bolt circle	K		125			160	180	210	240	310		350	400	485		520	570	625		725						
Number of bolts	N		4			4	4	4	6	6		8	8	10		10	12	12		16						
Diameter of bolt hole	L		18			18	18	22	22	22		22	22	25		25	25	25		30						
Nominal size bolts			M16			M16	M16	M20	M20	M20		M20	M20	M24		M24	M24	M24		M27						

DN (mm)

AS4087 standard pressure		40	50	60	65	80	100	125	150	200	225	250	300	350	375	400	450	500	525	600	700	750	800	900	1000	1200
Outside diameter flange	D		150		165	185	215	255	280	335	370	405	455	525	550	580	640	705	735	825	910	995				
Diameter of bolt circle	K		114		127	146	178	210	235	292	324	356	406	470	495	521	584	641	673	758	845	927				
Number of bolts	N		4		4	4	4	8	8	8	8	8	12	12	12	12	12	16	16	16	20	20				
Diameter of bolt hole	L		18		18	18	18	18	18	18	18	22	22	26	26	26	26	26	26	30	30	33				
Nominal size bolts			M16		M16	M16	M16	M16	M16	M16	M16	M20	M20	M24	M24	M24	M24	M24	M24	M27	M27	M30				

DN (mm)

AS4087 high pressure		40	50	60	65	80	100	125	150	200	225	250	300	350	375	400	450	500	525	600	700	750	800	900	1000	1200
Outside diameter flange	D		165		185	205	230		305	370	405	430	490	550	580	610	675	735	760	850		1015				
Diameter of bolt circle	K		127		146	165	191		260	324	356	381	381	438	495	552	610	673	699	781		674				
Number of bolts	N		4		8	8	8		12	12	12	12	12	12	16	20	20	24	24	24		28				
Diameter of bolt hole	L		18		18	18	18		22	22	26	26	26	26	26	30	33	33	33	36		36				
Nominal size bolts			M16		M16	M16	M16		M20	M20	M24	M24	M24	M27	M27	M27	M30	M30	M30	M33		M33				

DN (mm)

AS2129 Table E/ BS 10-1962 Table E		40	50	60	65	80	100	125	150	200	225	250	300	350	375	400	450	500	525	600	700	750	800	900	1000	1200
Outside diameter flange	D		150		165	185	215	255	280	335	370	405	455	525	550	580	640	705	735	825	910	995				
Diameter of bolt circle	K		114		127	146	178	210	235	292	324	356	406	470	495	521	584	641	673	756	848	927				
Number of bolts	N		4		4	8	8	8	8	8	12	12	12	12	12	12	16	16	16	16	20	20				
Diameter of bolt hole	L		18		18	18	18	18	22	22	22	22	26	26	26	26	26	26	26	30	33	36				
Nominal size bolts			M16		M16	M16	M16	M16	M20	M20	M20	M20	M24	M24	M24	M24	M24	M24	M24	M27	M30	M33				

DN (mm)

ANSI B 16.1 125 LB/ AWWA C-11 0		40	50	60	65	80	100	125	150	200	225	250	300	350	375	400	450	500	525	600	700	750	800	900	1000	1200
Outside diameter flange	D		152		178	191	229	255	280	343		405	483	533		597	635	699		813		984				
Diameter of bolt circle	K		121		140	152	191	216	241	298		362	432	476		540	578	635		749		914				
Number of bolts	N		4		4	4	8	8	8	8		12	12	12		16	16	20		20		28				
Diameter of bolt hole	L		19		19	19	19	22	22	22		25	25	29		29	32	32		35		35				
Nominal size bolts			M16		M16	M16	M16	M20	M20	M20		M22	M22	M25		M25	M29	M29		M32		M32				

DN (mm)

ISO 7005 PN16		40	50	60	65	80	100	125	150	200	225	250	300	350	375	400	450	500	525	600	700	750	800	900	1000	1200
Outside diameter flange	D		165		185	200	220	250	285	340		405	460	520		580	640	715		840	910					
Diameter of bolt circle	K		125		145	160	180	210	240	295		355	410	470		525	585	650		770	840					
Number of bolts	N		4		4	8	8	8	8	12		12	12	16		16	20	20		20	24					
Diameter of bolt hole	L		18		18	18	18	18	22	22		27	27	27		30	30	33		36	36					
Nominal size bolts			M16		M16	M16	M16	M16	M20	M20		M24	M24	M24		M27	M27	M33		M33	M33					

Insert stiffeners

In this chapter, the need of using insert stiffeners (also called support liners) in general is explained. Also the specific guideline of using inserts in combination with the Georg Fischer Waga N.V. products is mentioned.

Mechanical joints on plastic pipes

Plastic materials suffer from material relaxation, resulting in a change of shape over time. This phenomenon is known as stress relaxation. Especially when installing a mechanical fitting on plastic pipes, tightening of the bolts results in an increased surface pressure of the joint onto the plastic pipe wall. This extra pressure in most cases leads to a deformation of the pipe wall (picture 1), enhancing the relaxation process. In case of restraint mechanical joints, such as the MULTI/JOINT® 3000 Plus, the forces of the restraining mechanism brought onto the pipe are often much higher than the forces of the sealing mechanism. These higher stress levels will therefore result in a higher creep deformation and might cause a higher risk of joint failure.

By inserting a stainless steel insert stiffener into the plastic pipe end, the pipe is reinforced from the inside, ensuring that the pipe wall cannot be deformed (picture 2). This will result in the best possible connection on plastic pipes.

Bending torques

Another reason for using the stainless steel insert stiffeners is to avoid bending torques. A plastic pipe always tends to knick exactly at the spot of the sealing area when bending torques act on the pipe (picture 3.). This might result in leakages of the fitting. When using an insert stiffener, the bending point is diverted away from the sealing area, resulting in a longlasting leak free connection (picture 4.)

Use of insert stiffeners

In order to guarantee the best possible performance of the Georg Fischer Waga N.V. fittings on plastic pipes, we set the following directive:

Use of an insert stiffener (approved by Georg Fischer Waga N.V.) is mandatory on all plastic pipes, both for restraint and non restraint connections, both for permanent and temporary connections.

Exceptions:

No insert stiffeners need to be used in water and gas applications on:

- PVC pipes with SDR-class 21 or thicker walled

No insert stiffeners need to be used for temporary (< 5 years) non restraint connections in water applications on:

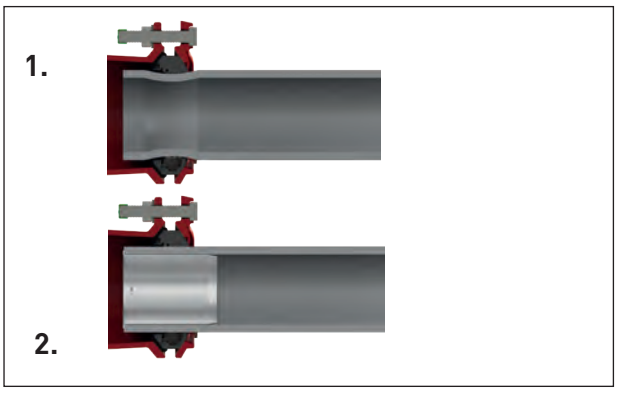
- PP-B, PB and HDPE (80/100/100-RC) pipes with SDR-class 11 or thicker walled

Note: in gas applications on PP-B, PB and HDPE (80/100/100-RC) pipes, insert stiffeners are mandatory.

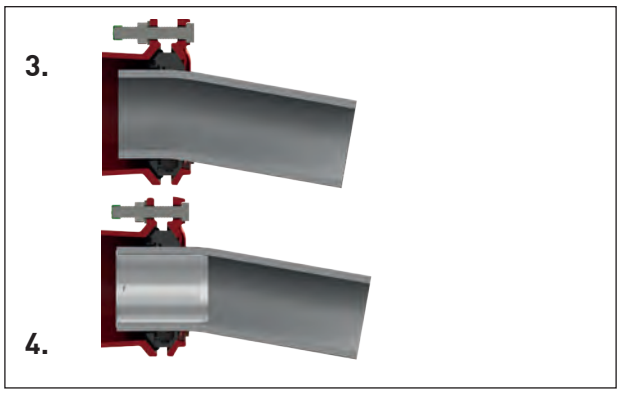
Design and properties

Georg Fischer Waga N.V. offers two types of insert stiffeners for different applications. Depending on the application the right choice has to be made. To guarantee the correct support to the spigot, insert stiffeners must be designed according the intended use for plastic piping systems. Therefore insert stiffeners must conform to the following properties to guarantee its function.

Mechanical pipe joints



Residual stress and bending torques



The insert stiffener must:

- be axially secured to stay in place inside the spigot
- not be oversized to reduce residual stress due to installation
- not be too small in order to guarantee sufficient support
- have the appropriate length to support at least the joint area plus 0,2 x the outside diameter
- be ridged to at least withstand the forces brought on by the sealing and restraining mechanism
- be easy to install
- be free of corrosion
- not affect the content of the pipe system

Insert Economy

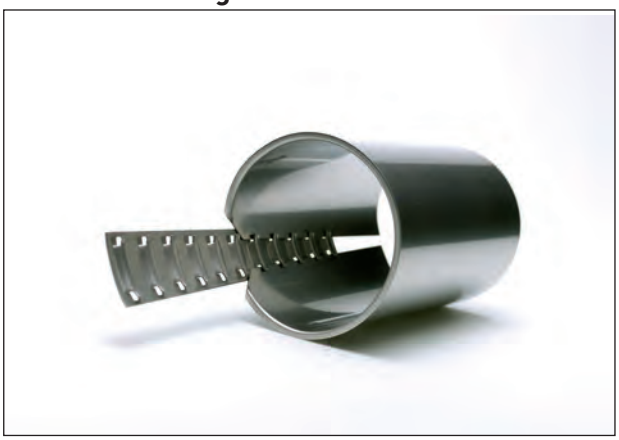
The Insert Economy is designed for (PE, PB, PVC etc.) pipes dimensioned according to DIN 8074. The insert can be installed in these pipes as long as they are within the allowed production tolerances. In order to secure a sufficient support to the pipe, the (nominal) diameter of the insert is just below the nominal inside diameter of the pipe. This means that when the pipe is produced at its biggest tolerance, it "falls in", supported by the dimples. When the pipe is produced at its lowest tolerance, you need some extra force to put in the insert. But this extra force should be no more than can be achieved with a hammer. The Insert Economy is available for various SDR-sizes. To guarantee the correct working of the insert, the use is limited to pipes up to DN300. Above this dimension, the production tolerances become such, that sufficient support is no longer guaranteed. For inserts bigger than DN300, we refer to inserts with wedge.

Insert Economy

Insert with wedge

The Insert with Wedge is intended for pipes with larger production tolerances and pipes produced according to unknown standards, and is available up to DN1600. The wedge construction offers a small tolerance, overcoming minor dimension differences of the pipe. After positioning the insert, the wedge is hammered in, to fix the insert. After that the top end of the remaining wedge has to be sawed off.

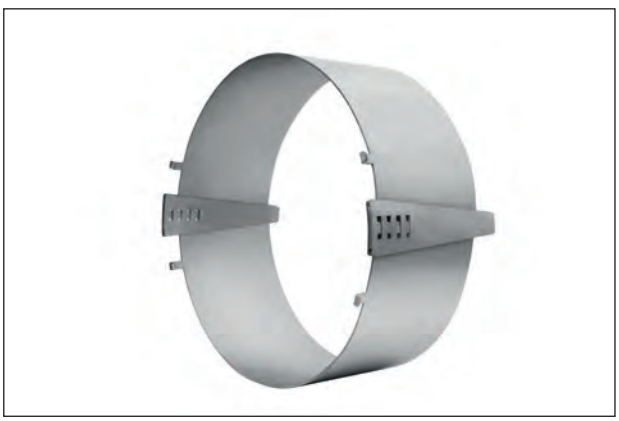
Insert with wedge



Insert with wedge MJ DN625 – DN800

This Insert with Wedge MJ DN625 - DN800 is specially designed for the MULTI/JOINT® 3000 Plus DN625 – DN800. Other sizes are available on request. In contrast to the Insert Economy and Insert with Wedge for the smaller sizes, this product comes with a separate top and bottom part. After positioning the insert, the two wedges are placed on each side between the two compartments. When the wedges are properly placed according to the corresponding user manual, the remaining parts are sawed off.

Insert with wedge MJ DN625 - DN800



MULTI/JOINT® 3000 Plus principle

Proven quality

The MULTI/JOINT® 3000 Plus system comprises wide range fittings, flange adaptors, reduction pieces, bends, duck foot bends, end caps and PE adaptors of ductile iron in the ranges DN50 - DN825. Thanks to the unique wide range sealing system all fittings can be made restraint as long as the nominal diameters are the same. All you need to know is the outer diameter of the pipe, the medium and the working pressure. The MULTI/JOINT® 3000 Plus system has a range up to 43 mm and connects pipes from 46 - 869 mm. MULTI/JOINT® 3000 Plus restraint fittings are suitable for applications in water pipes up to 16 bar and gas pipes up to 8 bar. The MULTI/JOINT® system has earned its reputation for quality on the international market over the past 30 years.

Unique sealing system

When the quality standard is high, you need a reliable connection. The MULTI/JOINT® 3000 Plus system meets the demands and is suitable for applications in water and gas. The uniqueness of the system lies in the sealing which consists of a flexible r ing (Uni/Fleks r ing o r Uni/Fiks ring) which consists of plastic segments and a rubber sealing ring (EPDM or NBR). The Uni/Fiks version is supplied with metal grippers which make the MULTI/JOINT® 3000 Plus system restraint on all types of pipe materials.

Uni/Fleks ring

The Uni/Fleks ring is a combination of a plastic ring, consisting of plastic segments, with a thin rubber sealing (Varioseal). This rubber sealing (available both in EPDM and NBR) is a reliable solution for both water and gas applications. The Uni/Fleks ring is non restraint.

Uni/Fiks ring

When metal grippers (Uni/Fiksers) are placed in the Uni/Fleks ring, the sealing system is restraint. The Uni/Fiks ring with the Uni/Fiksers makes a restraint connection up to an impressive 16 bar for water and 8 bar for gas, both on rigid pipes and plastic pipes.

Segments

The plastic segments in the ring sizes DN50 – DN125 consist of one part, made of POM. Furthermore the design of the ring enables large range coverage in outside diameters. The plastic segments in the ring sizes DN150 – DN825 consist of two parts; the wedge and the topple. The wedge is made of POM and is in contact with the pipe material. The topple, made of polyamide, ensures the integrity of the ring. This combination results in a progressive sealing and gripping mechanism. In the ring sizes DN425 – DN825 a clip has been added to fixate the ring in the body of the fitting ensuring easy installation with no interference.

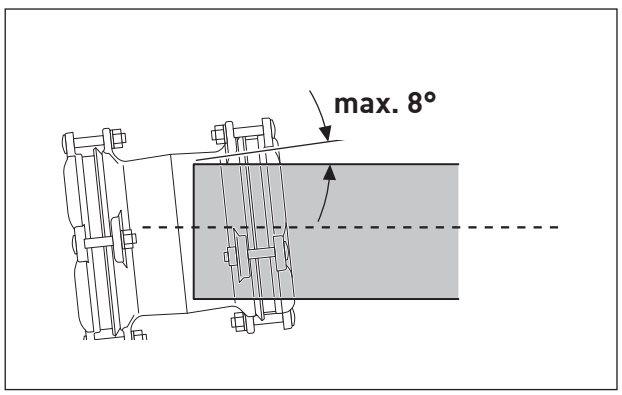
Uni/Fiksers

The Uni/Fiksers ensure optimal restraint both on rigid pipe materials and on plastic pipes, without compromise.

Body and gland

The length of the body determines the insertion depth or joint gap possible. Because the insertion depth complies, and even exceeds, the dimensions given in EN 14525, large joint gaps can be covered. Secondly the design of the body and gland are such that losses in tension, which will occur in time, are compensated.

Nominal angularity



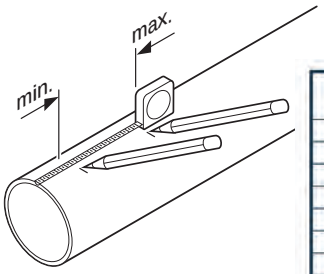
The angularity is based on the middle of the fitting range.

Pressure/Performance
See table in the user manual of the MULTI/JOINT® 3000 Plus.

Joint gap (JG)
Maximum axial distance between any point of the spigot ends of the pipes to be connected (coupling), or, maximum axial distance between any point of the spigot end of the pipe and the flange face (flange adaptor).

Depth of engagement (DSE)
Minimum distance between any point of the spigot end and the internal face of the joint gasket. The manufacturer shall declare the maximum joint gap.

Minimum and maximum insertion depth (ID)



DN	Minimum (mm)	Maximal (mm)
DN50	84	95
DN65	84	100
DN80	84	100
DN100	90	105
DN125	90	115
DN150	110	130
DN200	110	145
DN225	125	170
DN250	130	180
DN300	130	185
DN350	130	185
DN400	135	190
DN425	160	225
DN450	160	225
DN475	160	225
DN500	160	225
DN550	160	225
DN600	170	235
DN625	210	320
DN675	210	320
DN700	210	320
DN750	210	320
DN800	210	320
DN825	210	320

Angularity
The MULTI/JOINT® 3000 Plus family has on each side a nominal angularity at installation of 8° (based on the middle of the range).

Temperature
The MULTI/JOINT® 3000 Plus has different parts, which resist different temperatures.

	NBR	EPDM
Maximum allowable temperature for joint	-5 °C up to +50 °C	0 °C up to +50 °C

Certified quality
The MULTI/JOINT® 3000 Plus family is both tested internally as well as externally by independent laboratories. All performed tests comply with the international standard requirements such as EN 14525. For more detailed information please contact us.

Note: Care must be taken to ensure that manufacturer's declared maximum joint gap is not exceeded due to pipe contraction or expansion as a result of temperature or pressure change.

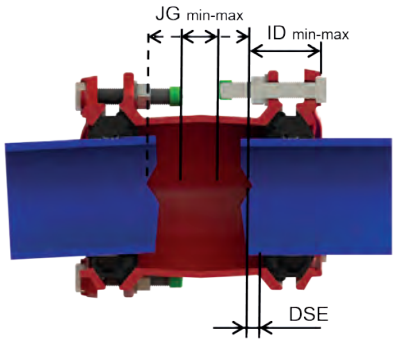
Guidelines on storage of MULTI/JOINT® 3000 Plus
At any given time between production and use, the product should be stored in accordance with the following recommendations:

- The storage temperature should be below 25 °C and preferably below 15 °C
- The rubber seals should be protected from light, in particular strong sunlight and high ultraviolet artificial light
- The rubber seals should not be stored near equipment that generates ozone (e.g. mercury vapour lamps) or high voltage electrical equipment, which releases electric sparks or silent electrical discharges

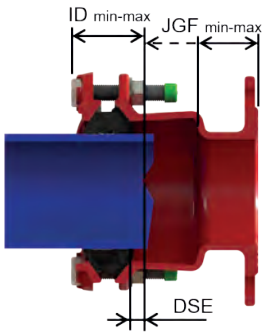
The shelf life of a MULTI/JOINT® 3000 Plus fitting is 2 years from date of assembly (if properly stored). After the expiration date, a MULTI/JOINT® 3000 Plus fitting can still be installed, but may have a lower life expectancy.

Joint gap table

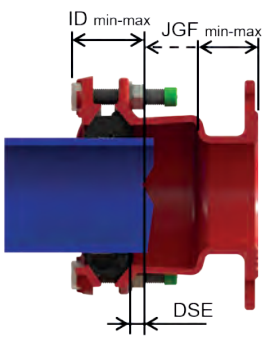
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN)	min	min	max	min	max
Typ 3000	50	12	**5**	**85**	**84**	**95**
	65	12	**5**	**95**	**84**	**100**
	80	12	**5**	**100**	**84**	**100**
	100	15	**5**	**90**	**90**	**105**
	125	15	**5**	**100**	**90**	**115**
	150	15	**5**	**120**	**110**	**130**
	200	20	**5**	**150**	**110**	**145**
	225	20	**5**	**160**	**125**	**170**
	250	20	**5**	**190**	**130**	**180**
	300	20	**5**	**190**	**130**	**185**
	350	20	**5**	**190**	**130**	**185**
	400	20	**5**	**190**	**135**	**190**
	425	25	**5**	**220**	**160**	**225**
	450	25	**5**	**220**	**160**	**225**
	475	25	**5**	**220**	**160**	**225**
	500	25	**5**	**220**	**160**	**225**
	550	25	**5**	**220**	**160**	**225**
	600	25	**5**	**220**	**170**	**235**
	625	30	**5**	**280**	**210**	**320**
	675	30	**5**	**280**	**210**	**320**
	700	30	**5**	**280**	**210**	**320**
	750	30	**5**	**280**	**210**	**320**
	800	30	**5**	**280**	**210**	**320**
	825	30	**5**	**280**	**210**	**320**



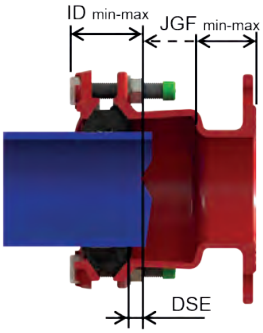
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN)	min	min	max	min	max
Typ 3050	50	12	**65**	**105**	**84**	**95**
	65	12	**65**	**105**	**84**	**100**
	80	12	**65**	**105**	**84**	**100**
	100	15	**65**	**105**	**90**	**105**
	125	15	**75**	**125**	**90**	**115**
	150	15	**75**	**125**	**110**	**130**
	200	20	**75**	**145**	**110**	**145**
	225	20	-	-	-	-
	250	20	**75**	**170**	**130**	**180**
	300	20	**105**	**195**	**130**	**185**
	350	20	**105**	**195**	**130**	**185**
	400	20	**105**	**195**	**135**	**190**
	425	25	-	-	-	-
	450	25	**105**	**210**	**160**	**225**
	475	25	-	-	-	-
	500	25	**105**	**210**	**160**	**225**
	550	25	-	-	-	-
	600	25	**105**	**210**	**170**	**235**
	625	30	-	-	-	-
	675	30	-	-	-	-
	700	30	**105**	**245**	**210**	**320**
	750	30	-	-	-	-
	800	30	**100**	**245**	**210**	**320**
	825	30	-	-	-	-



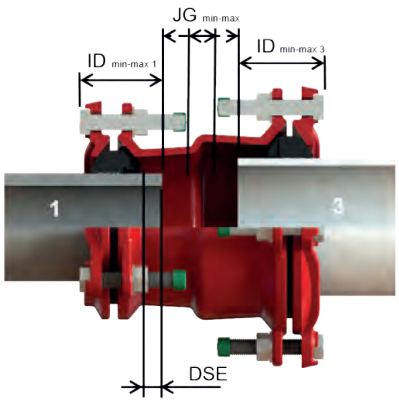
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN)	min	min	max	min	max
Typ 3150	50xFL40	12	**75**	**110**	**84**	**95**
	65xFL80	12	**65**	**110**	**84**	**100**
	100xFL80	15	**75**	**120**	**90**	**105**
	125xFL100	15	**75**	**120**	**90**	**115**
	125xFL150	15	**75**	**120**	**90**	**115**
	150xFL100	15	**110**	**155**	**110**	**130**
	200xFL150	20	**110**	**170**	**110**	**145**
	225xFL200	20	**85**	**155**	**125**	**170**
	225xFL250	20	**85**	**155**	**125**	**170**



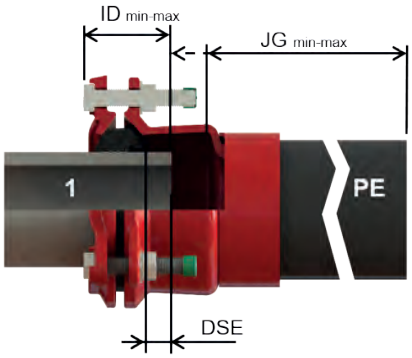
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN)	min	min	max	min	max
Typ 3150	300xFL250	20	**130**	**235**	**130**	**185**
	350xFL300	20	**85**	**205**	**130**	**185**
	425xFL400	25	**105**	**195**	**160**	**225**
	450xFL400	25	**105**	**195**	**160**	**225**
	475xFL400	25	**135**	**225**	**160**	**225**
	550xFL500	25	**105**	**195**	**160**	**225**
	625xFL600	30	**115**	**255**	**210**	**320**
	675xFL600	30	**175**	**315**	**210**	**320**
	825xFL800	30	**120**	**260**	**210**	**320**



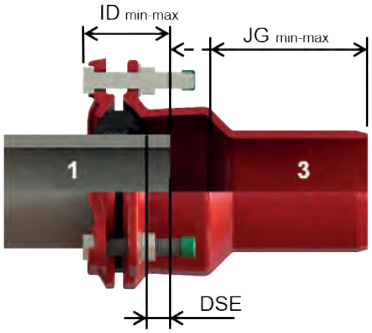
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)		ID 3 (Insertion depth) (mm)	
	(DN x DN)	min	min	max	min	max	min	max
Typ 3100	50x65	12	**5**	**90**	**84**	**95**	**84**	**100**
	65x80	12	**5**	**100**	**84**	**100**	**84**	**100**
	80x100	12 & 15	**5**	**95**	**84**	**100**	**90**	**105**
	100x125	15	**5**	**95**	**90**	**105**	**90**	**115**
	100x150	15	**5**	**140**	**90**	**105**	**110**	**130**
	125x150	15	**5**	**140**	**90**	**115**	**110**	**130**
	150x200	15 & 20	**5**	**135**	**110**	**130**	**110**	**145**
	200x225	20	**5**	**175**	**110**	**145**	**125**	**170**
	200x250	20	**5**	**190**	**110**	**145**	**130**	**180**
	225x250	20	**5**	**180**	**125**	**170**	**130**	**180**
	250x300	20	**5**	**215**	**130**	**180**	**130**	**185**
	300x350	20	**5**	**250**	**130**	**185**	**130**	**185**
	350x400	20	**5**	**275**	**130**	**185**	**135**	**190**
	300x400	20	**5**	**275**	**130**	**185**	**135**	**190**
	400x425	30	**5**	**215**	**135**	**190**	**160**	**225**
	400x450	20 & 25	**5**	**215**	**135**	**190**	**160**	**225**
	425x475	25	**5**	**240**	**135**	**190**	**160**	**225**
	450x500	25	**5**	**240**	**160**	**225**	**160**	**225**
	500x550	25	**5**	**240**	**160**	**225**	**160**	**225**
	550x600	25	**5**	**240**	**160**	**225**	**170**	**235**
	600x625	30	**5**	**250**	**170**	**235**	**210**	**320**
	600x675	30	**5**	**250**	**170**	**235**	**210**	**320**
	600x700	30	**5**	**270**	**170**	**235**	**210**	**320**
	750x800	30	**5**	**280**	**210**	**320**	**210**	**320**



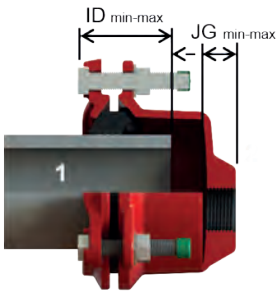
	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN x.d)	min	min	max	min	max
Typ 3060	50x50	12	**520**	**555**	**84**	**95**
	50x63	12	**520**	**555**	**84**	**95**
	65x63	12	**520**	**560**	**84**	**100**
	65x75	12	**520**	**560**	**84**	**100**
	80x90	12	**520**	**560**	**84**	**100**
	80x110	12	**520**	**560**	**84**	**100**
	100x90	15	**520**	**560**	**90**	**105**
	100x110	15	**520**	**560**	**90**	**105**
	100x125	15	**520**	**560**	**90**	**105**
	125x110	15	**520**	**570**	**90**	**115**
	125x125	15	**520**	**570**	**90**	**115**
	125x140	15	**520**	**570**	**90**	**115**
	125x160	15	**520**	**570**	**90**	**115**
	150x160	15	**520**	**575**	**110**	**130**
	150x180	15	**520**	**575**	**110**	**130**
	200x200	20	**525**	**595**	**110**	**145**
	200x225	20	**525**	**595**	**110**	**145**
	250x250	20	**530**	**625**	**130**	**180**
	250x280	20	**530**	**625**	**130**	**180**
	300x315	20	**530**	**650**	**130**	**185**



	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN x.d)	min	min	max	min	max
Typ 3080 & 3180	50x63	12	**125**	**165**	**84**	**95**
	100x110	15	**150**	**190**	**90**	**105**
	150x160	15	**170**	**230**	**110**	**130**
	200x200	20	**185**	**255**	**110**	**145**
	80x110	12	**135**	**185**	**84**	**100**



	Dimension	**DSE** (mm)	**JG** (Joint gap) (mm)		**ID** (Insertion depth) (mm)	
	(DN)	min	min	max	min	max
Typ 3200	50	12	**30**	**70**	**84**	**95**
	65	12	**30**	**75**	**84**	**100**
	80	12	**30**	**75**	**84**	**100**
	100	15	**35**	**75**	**90**	**105**
	125	15	**35**	**80**	**90**	**115**
	150	15	**35**	**90**	**110**	**130**
	200	20	**40**	**105**	**110**	**145**
	225	20	**40**	**120**	**125**	**170**
	250	20	**40**	**140**	**130**	**180**
	300	20	**45**	**140**	**130**	**185**
	350	20	**50**	**145**	**130**	**185**
	400	20	**55**	**160**	**135**	**190**



Coupling

Reduced coupling

Flange adaptor

Reduced flange adaptor

(Reduced) Spigot end

Bend

Reduced duckfoot

PE adaptor

End cap (blind)

End cap (threaded)

Multi/Clamp length selection

Multi/Clamp can be used to repair the following types of pipe:

- (Ductile) Cast Iron (DI)
- Steel
- Asbestos Cement
- PVC*
- PE*
- GRP*

** If pipe repair clamps are to be used on plastic pipes, please always contact Georg Fischer Waga N.V.*

The following types of damage can be repaired:

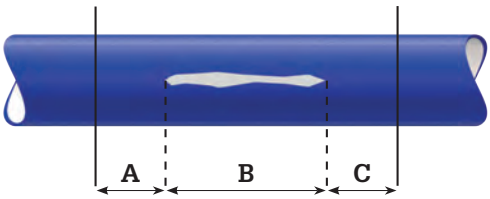
Cracked pipe after hot tap

Pit holes

Longitudinal cracks

Multi/Clamp repair clamps should be used under following conditions:

- The length of the clamp should be equal to at least the pipe outside diameter.
- The length of the clamp should be at least 150mm longer (A+C) than the length of any crack (B) on pipes with an outside diameter up to 350mm. On larger pipes this should be at least 200mm.
- For all plastic pipes such as PVC/PE, the width of the clamps should be 50% longer and bolt torque should be reduced by 50%. This to avoid the gasket being pushed out.
- On PE and similar plastic pipes Multi/Clamp repair clamps should only be used as a short term repair solution.
- The maximum allowable distance between two pipe ends should not exceed 10mm.
- The maximum allowable offset should not exceed 3mm.



User manuals

User manual MULTI/JOINT® 3000 Plus DN50 - DN400

Georg Fischer Waga N.V.

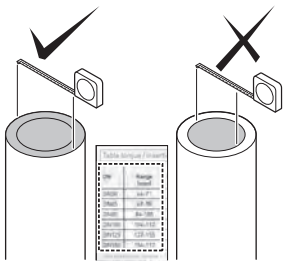
+GF+

MULTI/JOINT® 3000 Plus
DN50-DN400

User Manual	GB
Montageanleitung	D
Montagehandleiding	NL
Manuel d'instruction	F
Brukermanual	NO
Användarmanual	SE
Montagevejledning	DK
Käyttömanuaali	FIN
Manual de instalacion	ES
Manual de instalação	PT
Manuale d'uso	IT
Manualul utilizatorului	RO
Návod k montáži	CZ
Εγχειρίδιο χρήσης	GR
Szerelési utasítás	HU
Руководство по установке	RUS
Instrukcja Obsługi	PL

UM/MJ/DN50-DN400/02-22

01 CHECK TABLE IF CHOSEN FITTING MATCHES PIPE OD.



DN	Range (mm)
DN50	46-71
DN65	63-90
DN80	84-105
DN100	104-132
DN125	132-155
DN150	154-192

DN	Range (mm)
DN200	192-232
DN225	230-268
DN250	267-310
DN300	315-356
DN350	352-393
DN400	392-433

D Die Rohraussendurchmesser überprüfen und mit der Tabelle vergleichen.

NL Kies de juiste koppeling m.b.v. de tabel.

F Vérifiez sur le tableau si le raccord couvre bien le diamètre extérieur du tube.

NO Sjekk med tabell at koblingen stemmer overens med utvendig diameter rør.

SE Kontrollera om vald rördel stämmer mot rörets ytterdiameter.

DK Kontroller med tabellen om den valgte kobling passer til rørdiameteren.

FIN Tarkista taulukosta jos valitut asennukset sopivat putkelle QD.

PT Ver na tabela se os acessórios estão de acordo com o diâmetro exterior dos tubos.

ES Ver tabla anexa para unir distintos diametros exteriores.

IT Controllare sulla tabella se il giunto è idoneo al d.e. del tubo.

GR Με βάση το πίνακα μεγεθών, επιβεβαιώστε ότι ο σύνδεσμος είναι κατάλληλος για τη συγκεκριμένη διάμετρο αγωγού στον οποίο πρόκειται να τοποθετηθεί.

CZ V tabulce zkontrolovat použitelnost tvarovky v daném rozsahu průměrů.

HU Ellenőrizze, hogy a kiválasztott idom megfelel-e a cső külső átmérőjéhez.

RO Se verifica in tabel daca fitingul ales corespunde Dext al tevii.

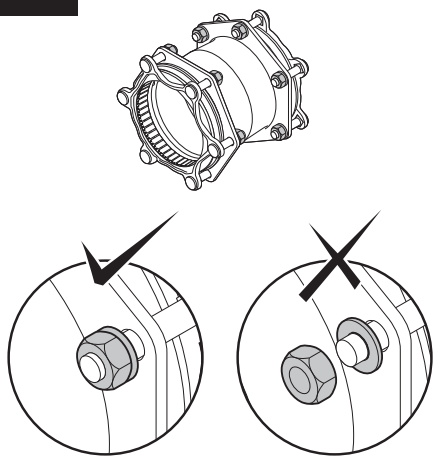
PL Sprawdź w tabeli czy łącznik pasuje do zewnętrznej średnicy rury.

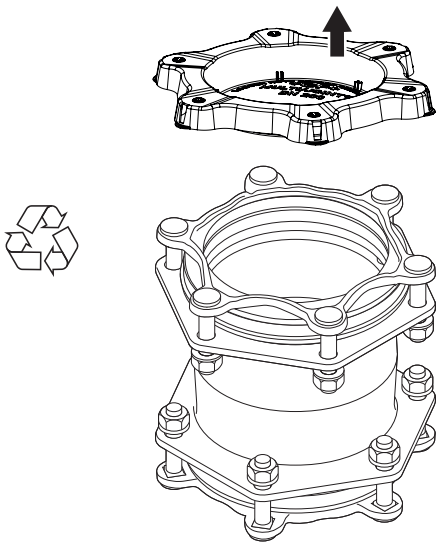
RUS Проверить по таблице совместимость фитинга с трубой.

UM/MJ/DN50-DN400/02-22

02

DO NOT REMOVE OR GREASE BOLTS.





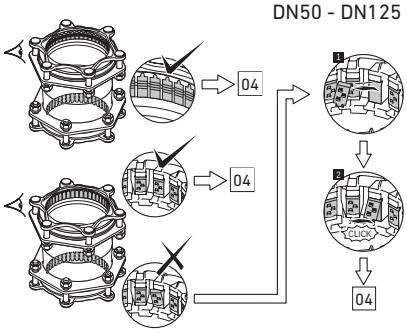
D	Schrauben nicht entfernen und nicht fetten.
NL	Bouten niet verwijderen of invetten.
F	Ne pas enlever et/ou graisser les vis.
IT	Non rimuovere e non ingrassare le viti.

UM/MJ/DN50-DN400/02-22

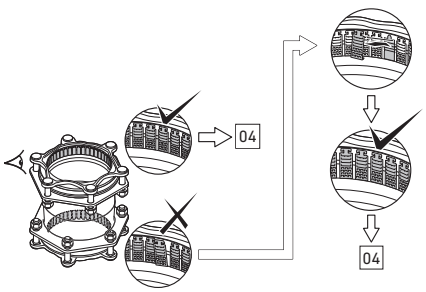
03

CHECK IF 'FIKSERS' (METAL GRIPPERS) POSITION IS CORRECT.

DN50 - DN125



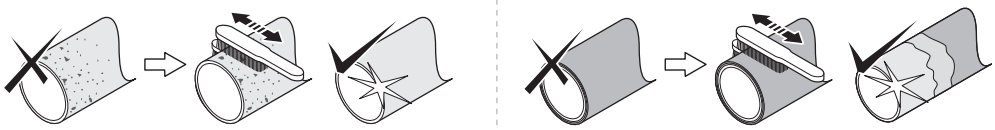
DN150 - DN400



D	Sicherstellen, dass alle Fikser richtig positioniert sind.
NL	Controleer de juiste positie van de "Fiksers".
F	Assurez-vous que les "Fiksers" (les mors métalliques) sont correctement positionnés.
NO	Kontroller at "Fikserne" er i riktig possisjon.
SE	Kontrollera om "Fiksers" position är korrekt.
DK	Kontroller om "Fikernes" placering er korrekt.
FIN	Tarkista "Fikseri", että asento on oikein.
PT	Ver se a posição dos "Fiksers" é correto.
ES	Revise si los "Fiksers" se encuentran en la posicion correcta.
IT	Controllare gli inserti antisfilo "Fiksers" sono OK.
GR	Ελέγξτε αν τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος "Fiksers" έχουν αγκυρώσει σωστά πάνω στον αγωγό.
CZ	Zkontrolovat správnou polohu fixerů.
HU	Ellenőrizze, hogy a "Fikser"-ek megfelelő helyzetben vannak-e.
RO	Se verifica daca pozitia elementelor de fixare "Fiksers" este corecta.
PL	Sprawdź poprawność ułożenia blaszek.
RUS	Убедиться в правильности установки "Fiksers" (металлических фиксаторов).

UM/MJ/DN50-DN400/02-22

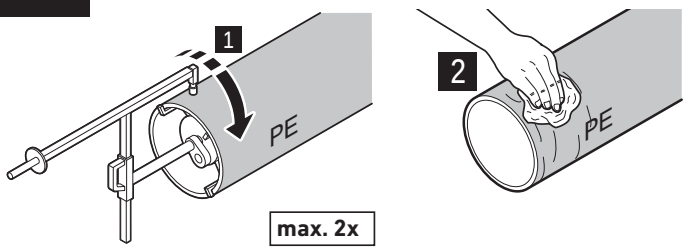
04 REMOVE ALL RUST, DIRT, BURRS, DAMAGES AND ALL FINISHING LAYERS FROM THE PIPE. INSTALL ON MEDIUM CARRYING PIPE MATERIAL ONLY.



D	Von der drucktragenden Rohroberfläche allen Rost, Grat, Schmutz, Schäden und alle Beschichtungen entfernen.
NL	Verwijder alle roest, vuil, bramen, beschadigingen en buislagen. Monteer alleen op de mediumvoerende buis.
F	Eliminez la rouille, la saleté, les bourrelets de soudures, les défauts de surface et toutes les couches de finition du tube. Assemblez seulement sur le matériau principal du tube.
NO	Fjern all rust, løs overflate samt skader på materialet og overflatebehandling.
SE	Avlägsna all rost, smuts, grader och eventuell ytbehandling från röret. Montera endast på mediabärande rörmaterial.
DK	Fjern al rust, snavs, spåner, beskadigelser og alle belægninger på røret. Monter kun på selve det mediebærende rør.
FIN	Poista kaikki ruoste, lika, taite, vauriot ja kasaumat putkesta. Asenna ainoastaan keskivahvalle putkelle.
PT	Remover oxidação, sugeira, rebarbas, e revestimento do tubo.
HU	Távolítson el minden rozsdát, szennyeződést, sorját, sérüléseket és minden fedőréteget a csőről. Csak közvetlenül a közeg szállító csőanyagra helyezze fel az idomot.
ES	Retirar toda la suciedad, polvo, daños y etiquetas de la tuberia. Montar solamente entre tubos.
IT	Rimuovere sporcizia, polvere, intagli e gli strati superficiali della tubazione. Il montaggio deve avvenire sullo strato a contatto del fluido trasportato.
GR	Καθαρίστε όλα τα οξειδωμένα τμήματα, τις επικαθίσεις, τις παραμορφώσεις και τις υλικές βλάβες της επιφάνειας του αγωγού καθώς και τις επιστρώσεις του αγωγού μέχρι τον αγωγό μεταφοράς του υλικού.
CZ	Odstranit všechny nečistoty, rez, otřepy a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Indepartati praful, crestaturile, murdaria, defectele precum si toate straturile de acoperire de pe teava. Se monteaza doar pe materialul conductei.
PL	Usuń wszelkiego rodzaju uszkodzenia, zabrudzenia, zadrapania, rdzę i wierzchnie warstwy na długości rury pokrytej przez łącznik.
RUS	Удалить любые загрязнения, ржавчину, задиры и наплывы, а так же покрытия с поверхности трубы. Устанавливать только на основной материал трубы.

UM/MJ/DN50-DN400/02-22

05 ONLY GAS: USE AN (BY GEORG FISCHER) APPROVED SCRAPING TOOL. INSTALL ON MEDIUM CARRYING PIPE MATERIAL ONLY.



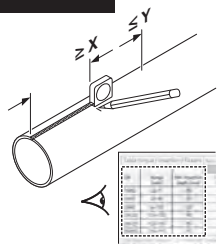
GAS / GAZ

D	Für PE-Rohre ist ein Georg Fischer Schälgerät zu verwenden.
NL	Gebruik een door Georg Fischer goedgekeurde schiller.
F	Utilisez un grattoir mécanique approuvé par Georg Fischer.
NO	Bruk skrapeverktøy godkjent av Georg Fischer.
SE	Använd ett (av Georg Fischer) godkänt skrapverktyg.
DK	Brug et (af Georg Fischer) godkendt skrabeværktøj.
FIN	Käytä (Georg Fischer) hyväksymää karhennus työkalua.
PT	Usar uma ferramenta (Georg Fischer) adequada.
ES	Utilizar un rascador circular Georg Fischer.
IT	Utilizzare in raschiatore approvato da Georg Fischer.
GR	Αφαιρέστε όλες τις οξειδώσεις, τις ακαθαρσίες, τις παραμορφώσεις, τις αλλοιώσεις υλικού και τυχόν επιστρώσεις από την επιφάνεια του αγωγού. Αγκυρώστε αποκλειστικά επί επιφάνειας του αγωγού μεταφοράς του ρευστού.
CZ	Použít škrabku (schválenou Georg Fischer).
HU	Használjon (GF által jóváhagyott) hántoló szerszámot.
RO	Se va utiliza un dispozitiv de raschetat recomandat (de GF).
PL	Użyj skrobaka (Georg Fischer) do przygotowania rury.
RUS	Использовать только разрешенный (компанией Georg Fischer) инструмент для зачистки.

UM/MJ/DN50-DN400/02-22

06

CHECK TABLE FOR MIN - MAX INSERTION DEPTH.



DN	**X** Min. insertion depth (mm)	**Y** Max. insertion depth (mm)
DN50	84	95
DN65	84	100
DN80	84	100
DN100	90	105
DN125	90	115
DN150	110	130

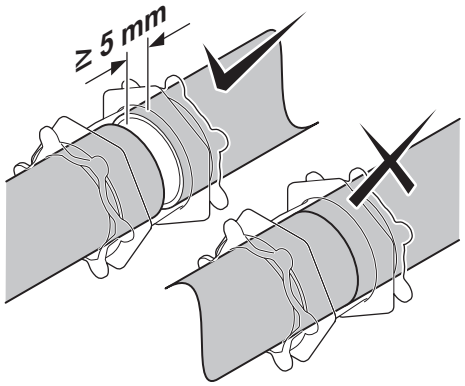
DN	**X** Min. insertion depth (mm)	**Y** Max. insertion depth (mm)
DN200	110	145
DN225	125	170
DN250	130	180
DN300	130	185
DN350	130	185
DN400	135	190

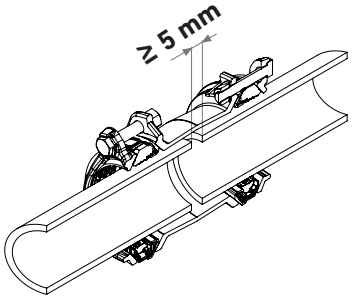
** For maximum joint gap information; see our technical manual*

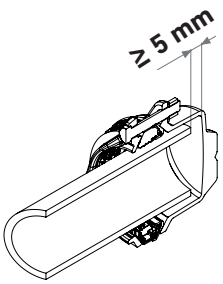
D	Aus der Tabelle die Einstecktiefe entnehmen.
NL	Zie de tabel voor de minimale insteekdiepte.
F	Vérifiez sur le tableau la profondeur d'insertion correcte du tube.
NO	Sjekk med tabell for korrekt innstikksdybde.
SE	Kontrollera i tabellen korrekt insticksdjup.
DK	Kontroller med tabellen for korrekt indstiksdybde.
FIN	Tarkista taulukosta oikea asennus syvyys.
PT	Ver na tabela a profundidade de inserção do tubo no acessório.
ES	Ver tabla para la profundidad de inserción minima.
IT	Controllare sulla tabella la profondità di inserimento.
GR	Συμβουλευτείτε τον πίνακα για την υπόδειξη του κατάλληλου βάθους εισαγωγής του συνδέσμου στον αγωγό.
CZ	Zkontrolovat v tabulce správnou hloubku zasunutí.
HU	Ellenőrizze a táblázatot a megfelelő betolási mélység érdekében.
RO	Se verifica in tabel adancimea corecta de inserare.
PL	Korzystając z tabeli określ głębokość nasunięcia łącznika.
RUS	Проверить по таблице значение глубины ввода трубы (X).

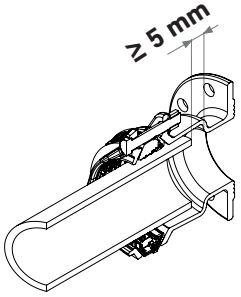
UM/MJ/DN50-DN400/02-22

07





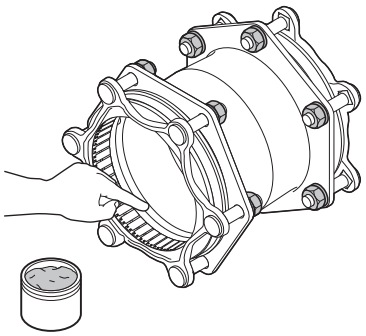




UM/MJ/DN50-DN400/02-22

08

APPLY SUITABLE GREASE ONLY IN GAS APPLICATIONS.



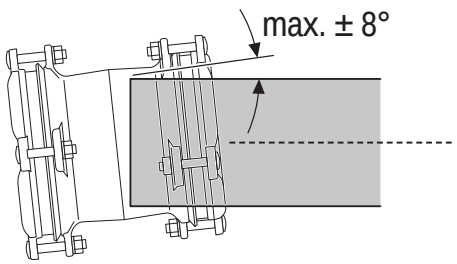
GAS / GAZ

D	Für die Gasanwendung den Dichtungsbereich ausreichend mit Gleitmittel versehen.
NL	Smeer de afdichting in met een geschikt glijmiddel.
F	Lubrifiez le bague de joint avec une graisse appropriée.
NO	Bruk egnet glidemiddel.
SE	Applicera lämpligt smörjmedel.
DK	Påfør egnet glidemiddel.
FIN	Lisää soveltuva rasva.
PT	Aplicar lubrificante adequado (nunca de origem mineral).
ES	Aplicar la grasa correspondiente a la junta.
IT	Applicare lubrificante opportuno.
GR	Τοποθετήστε κατάλληλη ποσότητα λιπαντικής ουσίας στα μηχανικά μέρη του συνδέσμου.
CZ	Aplikovat vhodné mazivo.
HU	Használjon megfelelő kenőanyagot.
RO	Se aplica lubrifiant.
PL	Nałóż warstwę smaru.
RUS	Использовать только подходящую смазку.

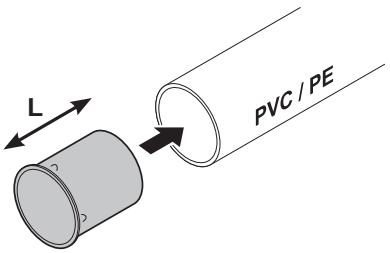
UM/MJ/DN50-DN400/02-22

09

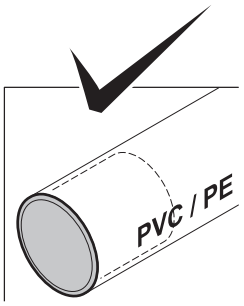
NOMINAL ANGULARITY.*



* Based on the middle of the range.

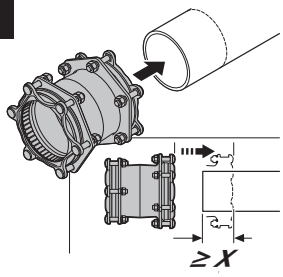


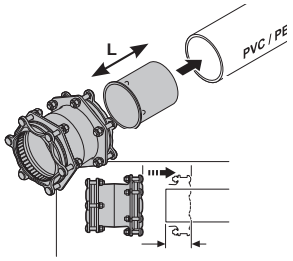
(insert approved by Georg Fischer Waga N.V.)



UM/MJ/DN50-DN400/02-22

10 MAKE SURE 'FIKSERS' (METAL GRIPPERS) ARE IN CORRECT POSITION! FOR PE/PVC SEE WARNING ⚠.





PVC / PE

⚠

≥ x + 2,5 mm ≤ L

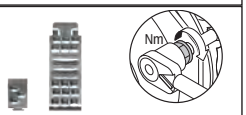
D	Sicherstellen, dass alle Fikser richtig positioniert sind.
NL	Houd de "Fiksers" in de juiste positie! Bij gebruik steunbus PE/PVC): let op! Max. insteekdiepte ≤ lengte steunbus (L).
F	Assurez-vous que les "Fiksers" (les mors métalliques) sont correctement positionnés.
NO	Ved strekkfast løsning sjekk at Fikserne er på plass.
SE	Säkerställ att "Fiksers" (metal gripbleck) är korrekt positionerade.
DK	Vær opmærksom på om "Fikserne" (metal-griberne) sidder korrekt!
FIN	Varmista "Fikserit" (metalli puristimet) ovat paikallaan.
PT	Garantir que os "Fiksers" ("grampos" de metal) estão na posição correto.
ES	Asegurarse de utlizar los Fiksers adecuados en la posicion adecuada.
IT	Controllare che le placche antisfilo metalliche siano fissate.
GR	Ελέγξτε αν τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος "Fiksers" είναι σε κατάλληλη θέση έτσι ώστε να εφαρμόσουν και να αγκυρώσουν το σύνδεσμο στον αγωγό κατά τη σύσφιξη.
CZ	Zkontrolovat správnou pozici fixerů (zákusné díly).
HU	Győződjön meg róla, hogy a "Fikser"-ek (fém húzásbiztosítók) megfelelő helyzetben vannak-e!
RO	Se verifica daca elementele metalice de fixare "Fiksers" sunt in pozitia corecta!
PL	Upewnij się czy blaszki "Fiksers" są odpowiednio ułożone.
RUS	Убедиться в правильности установки "Fiksers" (металлических фиксаторов).

UM/MJ/DN50-DN400/02-22

11a CHECK TABLE FOR INSTALLATION TORQUE AND PRESSURE RATING.

RESTRAINT

MULTI/JOINT® 3000 Plus **with Fikser**

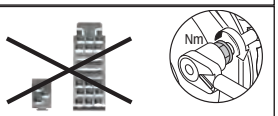


(S)St, CU, DCI, GCI, AC*, GRP*, PVC, PE, PEX, PP-B, PP-H, ABS
(* NO guarantee as quality varies!)

DN	**Torque (Nm)**	MOP gas (bar)	PFA water (bar)
DN50	**30**	8	16
DN65	**40**		
DN80	**60**		
DN100	**100**		
DN125			
DN150	**120**		
DN200			
DN225	**140**		
DN250			
DN300			
DN350	**140**	8**	16**
DN400			

NON RESTRAINT

MULTI/JOINT® 3000 Plus **without Fikser**



(S)St, CU, DCI, GCI, AC, GRP, PVC, PE, PEX, PP-B, PP-H, ABS

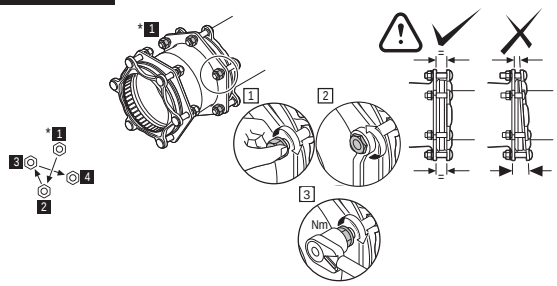
DN	**Torque (Nm)**	MOP gas (bar)	PFA water (16 bar)	**Torque (Nm)**	PFA water (25 bar)
DN50	**30**	8	16	**30**	25
DN65	**30**			**40**	
DN80	**40**			**60**	
DN100	**80**			**100**	
DN125					
DN150					
DN200					
DN225	**120**			**140**	
DN250					
DN300					
DN350					
DN400					

**** MOP 5 BAR GAS / PFA 10 BAR WATER FOR PLASTIC PIPE MATERIALS**

UM/MJ/DN50-DN400/02-22

11 b

TIGHTEN THE BOLTS WITH THE CORRECT TORQUE.



MULTI/JOINT® 3000 Plus **without Fikser**

MULTI/JOINT® 3000 Plus **with Fikser**

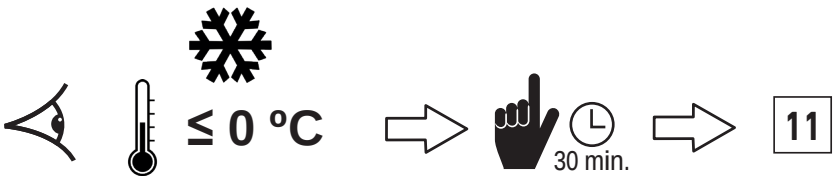
DN50-125 DN150-400

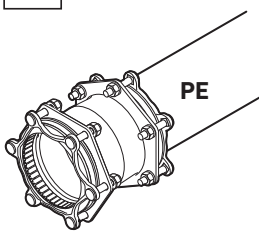
D	Der Tabelle das richtige Schraubendrehmoment entnehmen. Die Verwendung eines Drehmomentschlüssels ist zwingend erforderlich.
NL	Zie de tabel voor het juiste aandraaimoment.
F	Vérifiez dans les tableaux le couple de serrage à respecter.
NO	Mutrene strammes i kryss, da man skal holde samme avstand mellom koblingshus og trykkflens(gland). Etterstram med en momentnøkkel ihht. Momenttabell.
SE	Kontrollera i tabell korrekt åtdragningsmoment.
DK	Det rigtige tilspændingsmoment findes i tabellen.
FIN	Tarkista taulukosta oikea vääntömomentti.
PT	Ver na tabela a força de aperto.
ES	Ver tabla para el par de apriete.
IT	Controllare la tabella per il serraggio.
GR	Συμβουλευτείτε τον πίνακα για την επιλογή της κατάλληλης στρεπτικής ροπής που θα πρέπει να εφαρμοστεί στον σύνδεσμο, κατά την διαδικασία της σύσφιξης του στον αγωγό.
CZ	Zkontrolovat v tabulce správný utahovací moment.
HU	Ellenőrizze a táblázatot a megfelelő nyomaték érdekében.
RO	Se verifica in tabel valoarea momentului de stangere.
PL	Odczytaj z tabeli odpowiedni moment dokręcania śrub.
RUS	Проверить по таблице соответствующий момент затяжки болтов.

UM/MJ/DN50-DN400/02-22

12

≤ 0 °C ONLY ON PE PIPE UNDER FREEZING CONDITIONS, APPLY TORQUE (PRESCRIBED UNDER 11) ONE MORE TIME AFTER 30 MINUTES.

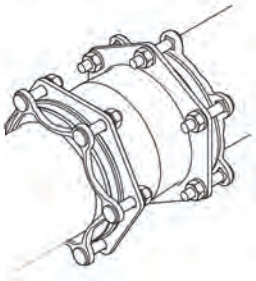


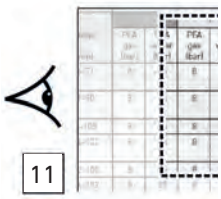


D	Nur für Einsatz auf PE Rohren bei Temperaturen ≤ 0, das unter 11 ermittelte Schraubendrehmoment nach 30 Minuten noch einmal aufbringen.
NL	Alleen bij montage op PE bij temperaturen onder 0, het (onder 11) voorgeschreven draaimoment na 30 minuten nog eenmaal aanbrengen.
F	Répetez l'étape 11 après 30 minutes seulement sur des tubes en PE en temps glacial.
HU	≤ 0 °C fagypont alatti hőmérsékleten, csak PE csöveken, 30 perc elteltével újra nyomatékra kell húzni a 11. oldalon leírtak szerint.

UM/MJ/DN50-DN400/02-22

13 CONDUCT A PRESSURE TEST.



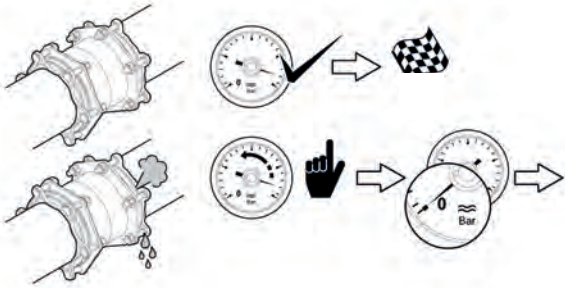


$P_{max} \leq 1{,}5 \times PFA$

D	Dichtheitsprüfung durchführen.
NL	Voer een druktest uit.
F	Procédez à un essai de pression.
NO	Utfør trykktest på hele installasjonen, med minimum det aktuelle driftstrykk før anlegget dekkes til.Trykktestingen må ikke overstige 1,5 x PFA (max arbeidstrykk) i henhold til tabellen.
SE	Utför tryckprovning.
DK	Gennemfør en trykprøvning.
FIN	Aseta painetesti.
PT	Efetuar teste de pressão.
ES	Realizar un test de presión.
IT	Fare test in pressione.
GR	Για τον έλεγχο της στεγανότητας της σύνδεσης πραγματοποιείστε δοκιμή υπό πίεση στον αγωγό για τυχόν διαρροές.
CZ	Provést tlakovou zkoušku.
HU	Hajtson végre nyomáspróbát.
RO	Se realizeaza un test de presiune.
PL	Przeprowadź próbę ciśnieniową.
RUS	Провести опрессовку.

UM/MJ/DN425-DN600/02-22

14 TEST OK ⇨ INSTALLATION FINISHED. IF PRESSURE TEST FAILS: REINSTALL FITTING.



Disassembly & Reuse

D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief → opnieuw installeren. Test OK → installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.
NO	Trykkprøving negativ → Re-installer kobling. Test OK → installasjon er utført.
SE	Tryckprovning falerar → Ommontera rördelen. Test OK → installation avslutad.
DK	Trykprøvning negativ → Re-installer kobling. Test OK → installationen er udført.
FIN	Paine testi hylätty → asenna uudelleen. Testi OK → asennus suoritettu.
PT	Teste de pressão falhou → Voltar a instalar o acessório → Teste OK → Instalação terminada.
ES	Test de Presion Fallo → Reinstalar el accesorio TEST OK → Instalacion completada
IT	Se test negativo → Reinstallare. Se test positivo → Installazione finita.
GR	Σε περίπτωση που η εγκατάσταση αποτύχει και υπάρχει διαρροή στη σύνδεση → Επανα-εγκαταστήσετε το σύνδεσμο. Σε περίπτωση που η δεν παρατηρηθεί διαρροή στη σύνδεση → η εγκατάσταση του συνδέσμου επί του αγωγού έχει ολοκληρωθεί με επιτυχία.
CZ	Tlaková zkouška není OK → tvarovku znovu namontovat. Tlaková zkouška OK → konec instalace.
HU	Nyomás próba sikertelen → végezze el újra az idom felhelyezését. Próba sikeres → felhelyezés befejezve.
RO	Daca testul de presiune esueaza → Se reinstaleaza fitingul. Daca rezultatul testului este OK → Instalare terminata.
PL	Nieudana próba → Ponowny montaż łącznika. Udana próba → montaż zakończony.
RUS	Опрессовка не пройдена → Установить фитинг снова. Опрессовка пройдена → Установка завершена.

UM/MJ/DN425-DN600/02-22

User manual MULTI/JOINT® 3000 Plus DN425 - DN600

Georg Fischer Waga N.V.

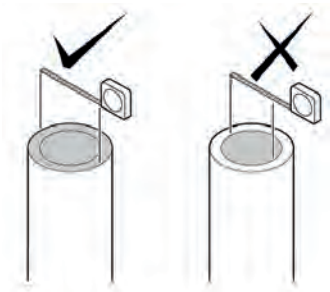
+GF+

MULTI/JOINT® 3000 Plus
DN425-DN600

User Manual	GB
Montageanleitung	D
Montagehandleiding	NL
Manuel d'instruction	F
Brukermanual	NO
Användarmanual	SE
Montagevejledning	DK
Käyttömanuaali	FIN
Manual de instalacion	ES
Manual de instalação	PT
Manuale d'uso	IT
Manualul utilizatorului	RO
Návod k montáži	CZ
Εγχειρίδιο χρήσης	GR
Szerelési utasítás	HU
Руководство по установке	RUS
Instrukcja Obsługi	PL

UM/MJ/DN425-DN600/02-22

01 CHECK TABLE IF CHOSEN FITTING MATCHES PIPE OD.

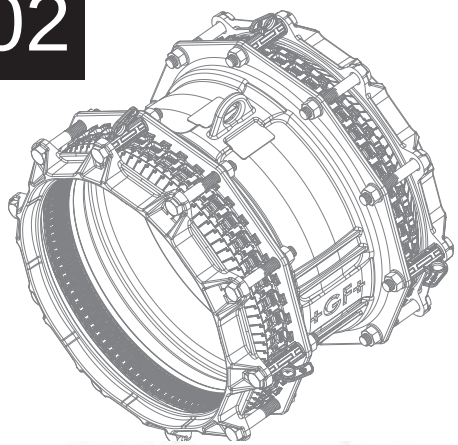


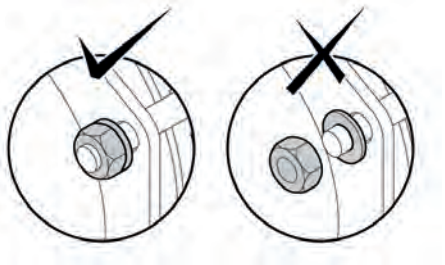
DN	Range (mm)
DN425	432 – 464
DN450	450 – 482
DN475	481 – 513
DN500	500 – 532
DN550	548 – 580
DN600	605 – 637

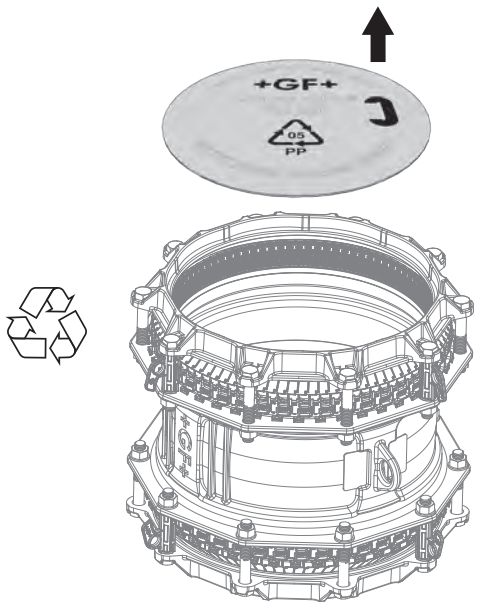
D	Die Rohraussendurchmesser überprüfen und mit der Tabelle vergleichen.
NL	Kies de juiste koppeling m.b.v. de tabel.
F	Vérifiez sur le tableau si le raccord couvre bien le diamètre extérieur du tube.
NO	Sjekk med tabell at koblingen stemmer overens med utvendig diameter rør.
SE	Kontrollera om vald rördel stämmer mot rörets ytterdiameter.
DK	Kontroller med tabellen om den valgte kobling passer til rørdiameteren.
FIN	Tarkista taulukosta jos valitut asennukset sopivat putkelle QD.
PT	Ver na tabela se os acessórios estão de acordo com o diâmetro exterior dos tubos.
ES	Ver tabla anexa para unir distintos diametros exteriores.
IT	Controllare sulla tabella se il giunto è idoneo al d.e. del tubo.
GR	Με βάση το πίνακα μεγεθών, επιβεβαιώστε ότι ο σύνδεσμος είναι κατάλληλος για τη συγκεκριμένη διάμετρο αγωγού στον οποίο πρόκειται να τοποθετηθεί.
CZ	V tabulce zkontrolovat použitelnost tvarovky v daném rozsahu průměrů.
HU	Ellenőrizze, hogy a kiválasztott idom megfelel-e a cső külső átmérőjéhez.
RO	Se verifica in tabel daca fitingul ales corespunde Dext al tevii.
PL	Sprawdź w tabeli czy łącznik pasuje do zewnętrznej średnicy rury.
RUS	Проверить по таблице совместимость фитинга с трубой.

UM/MJ/DN425-DN600/02-22

02





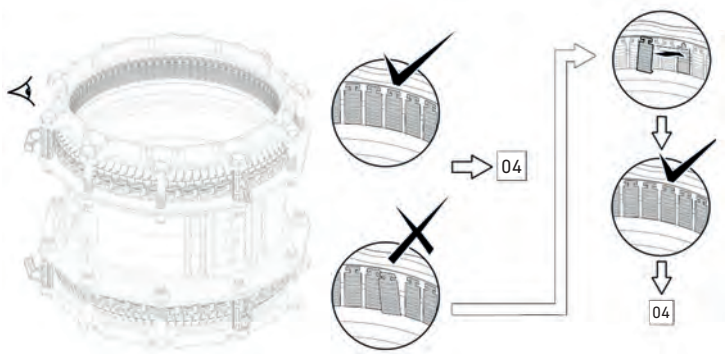


UM/MJ/DN425-DN600/02-22

03

CHECK IF “FIKSERS” (METAL GRIPPERS) POSITION IS CORRECT.

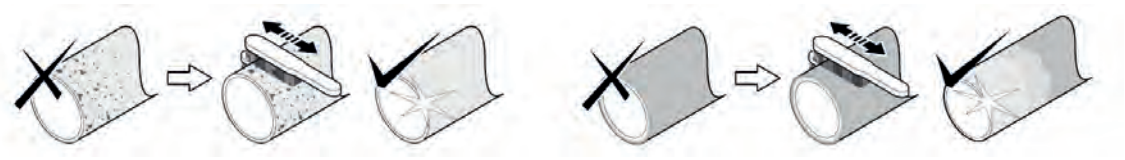
DN425-600



D	Sicherstellen, dass alle Fikser richtig positioniert sind.
NL	Controleer de juiste positie van de “Fiksers”.
F	Assurez-vous que les “Fiksers” (les mors métalliques) sont correctement positionnés.
NO	Kontroller at “Fikserne” er i riktig possisjon.
SE	Kontrollera om “Fiksers” position är korrekt.
DK	Kontroller om “Fikernes” placering er korrekt.
FIN	Tarkista “Fikseri”, että asento on oikein.
PT	Ver se a posição dos “Fiksers” é correto.
ES	Revise si los “Fiksers” se encuentran en la posicion correcta.
IT	Controllare gli inserti antisfilo “Fiksers” sono OK.
GR	Ελέγξτε αν τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος “Fiksers” έχουν αγκυρώσει σωστά πάνω στον αγωγό.
CZ	Zkontrolovat správnou polohu fixerů.
HU	Ellenőrizze, hogy a “Fikser”-ek megfelelő helyzetben vannak-e.
RO	Se verifica daca pozitia elementelor de fixare “Fiksers” este corecta.
PL	Sprawdź poprawność ułożenia blaszek.
RUS	Убедиться в правильности установки “Fiksers” (металлических фиксаторов).

UM/MJ/DN425-DN600/02-22

04 REMOVE ALL RUST, DIRT, BURRS AND DAMAGES FROM THE PIPE. INSTALL ON MEDIUM CARRYING PIPE MATERIAL ONLY.

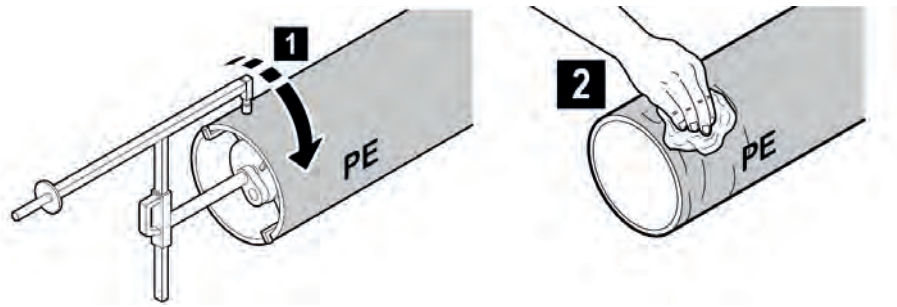


D	Von der drucktragenden Rohroberfläche allen Rost, Grat, Schmutz, Schäden und alle Beschichtungen entfernen.
NL	Verwijder alle roest, vuil, bramen, beschadigingen en buislagen. Monteer alleen op de mediumvoerende buis.
F	Eliminez la rouille, la saleté, les bourrelets de soudures, les défauts de surface et toutes les couches de finition du tube. Assemblez seulement sur le matériau principal du tube.
NO	Fjern all rust, løs overflate samt skader på materialet og overflatebehandling.
SE	Avlägsna all rost, smuts, grader och eventuell ytbehandling från röret. Montera endast på mediabärande rörmaterial.
DK	Fjern al rust, snavs, spåner, beskadigelser og alle belægninger på røret. Monter kun på selve det mediebærende rør.
FIN	Poista kaikki ruoste, lika, taite, vauriot ja kasaumat putkesta. Asenna ainoastaan keskivahvalle putkelle.
PT	Remover oxidação, sugeira, rebarbas, e revestimento do tubo.
HU	Távolítson el minden rozsdát, szennyeződést, sorját, sérüléseket és minden fedőréteget a csőről. Csak közvetlenül a közeg szállító csőanyagra helyezze fel az idomot.
ES	Retirar toda la suciedad, polvo, daños y etiquetas de la tuberia. Montar solamente entre tubos.
IT	Rimuovere sporcizia, polvere, intagli e gli strati superficiali della tubazione. Il montaggio deve avvenire sullo strato a contatto del fluido trasportato.
GR	Αφαιρέστε όλες τις οξειδώσεις, τις ακαθαρσίες, τις παραμορφώσεις, τις αλλοιώσεις υλικού και τυχόν επιστρώσεις από την επιφάνεια του αγωγού. Αγκυρώστε αποκλειστικά επί επιφάνειας του αγωγού μεταφοράς του ρευστού.
CZ	Odstranit všechny nečistoty, rez, otřepy a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Indepartati praful, crestaturile, murdaria, defectele precum si toate straturile de acoperire de pe teava. Se monteaza doar pe materialul conductei.
PL	Usuń wszelkiego rodzaju uszkodzenia, zabrudzenia, zadrapania, rdzę i wierzchnie warstwy na długości rury pokrytej przez łącznik.
RUS	Удалить любые загрязнения, ржавчину, задиры и наплывы, а так же покрытия с поверхности трубы. Устанавливать только на основной материал трубы.

UM/MJ/DN425-DN600/02-22

05 USE AN (BY GF) APPROVED SCRAPING TOOL.

GAS / GAZ

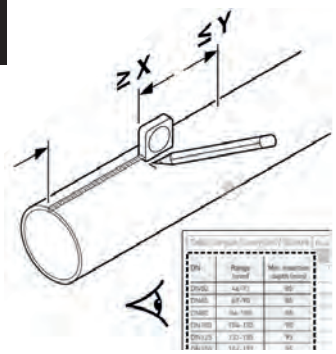


D	Für PE-Rohre ist ein GF Schälgerät zu verwenden.
NL	Gebruik een door GF goedgekeurde schiller.
F	Utilisez un grattoir mécanique approuvé par GF.
NO	Bruk skrapeverktøy godkjent av GF.
SE	Använd ett (av GF) godkänt skrapverktyg.
DK	Brug et (af GF) godkendt skrabeværktøj.
FIN	Käytä (GF) hyväksymää karhennus työkalua.
PT	Usar uma ferramenta (GF) adequada.
ES	Utilizar un rascador circular GF.
IT	Utilizzare in raschiatore approvato da GF.
GR	Για τις εργασίες καθαρισμού και λείανσης χρησιμοποιείστε το κατάλληλο (από την GF) εργαλείο.
CZ	Použít škrabku (schválenou GF).
HU	Használjon (GF által jóváhagyott) hántoló szerszámot.
RO	Se va utiliza un dispozitiv de raschetat recomandat (de GF).
PL	Użyj skrobaka (GF) do przygotowania rury.
RUS	Использовать только разрешенный (компанией GF) инструмент для зачистки.

UM/MJ/DN425-DN600/02-22

06

CHECK TABLE FOR MINIMUM INSERTION DEPTH (X).



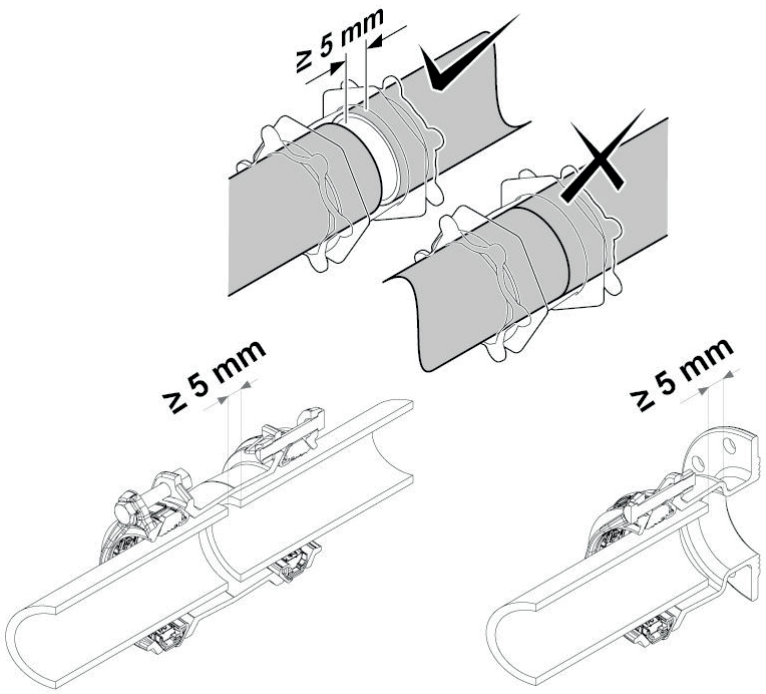
DN	**X** Min. insertion depth (mm)	**Y** Max. insertion depth (mm)
DN425	160	225
DN450		
DN475		
DN500		
DN550		
DN600	170	235

** For maximum joint gap information; see our technical manual.*

D	Aus der Tabelle die Einstecktiefe entnehmen (X).
NL	Zie de tabel voor de minimale insteekdiepte (X).
F	Vérifiez sur le tableau la profondeur d'insertion (X) correcte du tube.
NO	Sjekk med tabell for korrekt innstikksdybde (X).
SE	Kontrollera i tabellen korrekt insticksdjup (X).
DK	Kontroller med tabellen for korrekt indstiksdybde (X).
FIN	Tarkista taulukosta oikea asennus syvyys (X).
PT	Ver na tabela a profundidade (X) de inserção do tubo no acessório.
ES	Ver tabla para la profundidad de inserción minima (X).
IT	Controllare sulla tabella la profondità di inserimento (X).
GR	Συμβουλευτείτε τον πίνακα για την υπόδειξη του κατάλληλου βάθους εισαγωγής (X) του συνδέσμου στον αγωγό.
CZ	Zkontrolovat v tabulce správnou hloubku zasunutí (X).
HU	Ellenőrizze a táblázatot a megfelelő betolási mélység érdekében (X).
RO	Se verifica in tabel adancimea corecta de inserare (X).
PL	Korzystając z tabeli określ głębokość nasunięcia łącznika (X).
RUS	Проверить по таблице значение глубины ввода трубы (X).

UM/MJ/DN425-DN600/02-22

07



UM/MJ/DN425-DN600/02-22

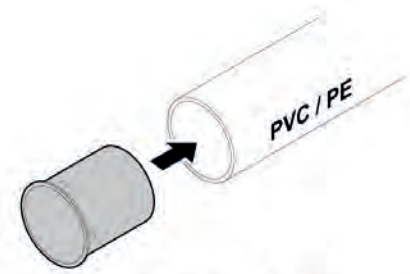
08 APPLY SUITABLE GREASE.

GAS / GAZ

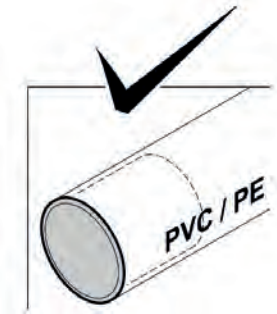
D	Für die Gasanwendung den Dichtungsbereich ausreichend mit Gleitmittel versehen.
NL	Smeer de afdichting in met een geschikt glijmiddel.
F	Lubrifiez le bague de joint avec une graisse appropriée.
NO	Bruk egnet glidemiddel.
SE	Applicera lämpligt smörjmedel.
DK	Påfør egnet glidemiddel.
FIN	Lisää soveltuva rasva.
PT	Aplicar lubrificante adequado (nunca de origem mineral).
ES	Aplicar la grasa correspondiente a la junta.
IT	Applicare lubrificante opportuno.
GR	Τοποθετήστε κατάλληλη ποσότητα λιπαντικής ουσίας στα μηχανικά μέρη του συνδέσμου.
CZ	Aplikovat vhodné mazivo.
HU	Használjon megfelelő kenőanyagot.
RO	Se aplica lubrifiant.
PL	Nałóż warstwę smaru.
RUS	Использовать только подходящую смазку.

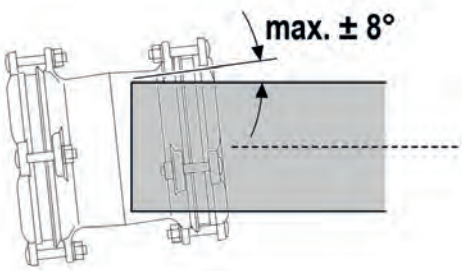
UM/MJ/DN425-DN600/02-22

09 INSERTS NOMINAL ANGULARITY.*



(approved by Georg Fischer Waga N.V.)





* based on the middle of the range

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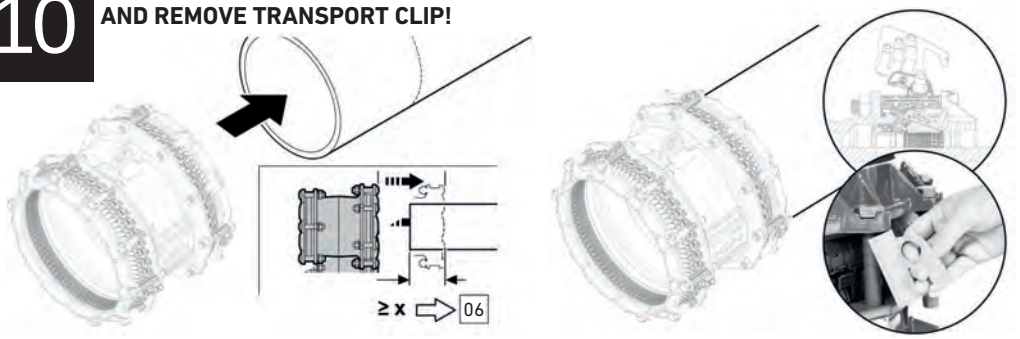
10 SLIDE THE MULTI/JOINT® 3000 PLUS ONTO PIPE END AND REMOVE TRANSPORT CLIP!



D	Den MULTI/JOINT® 3000 Plus auf das Rohrende schieben und den Transportclip entfernen!
NL	Schuif de MULTI/JOINT® 3000 Plus op het buiseinde en verwijder de transportclips!
F	Faites glisser le MULTI/JOINT® 3000 Plus sur l'extrémité du tuyau et retirez le clip de transport!
NO	Skli MULTI/JOINT® 3000 Plus muffe innpå rørende og deretter fjern trasportpinnen.
SE	Skjut MULTI/JOINT® 3000 Plus kopplingen på röret och ta bort transportsäkringarna (clip)!
DK	Skub MULTI/JOINT® 3000 Plus på røret og fjern transportbeslaget!
FIN	Liu'uta MULTI/JOINT® 3000 Plus putken päälle ja poista kuljetus klipsi!
PT	Deslize o MULTI/JOINT® 3000 Plus na extremidade do tubo e remover o clipe de transporte!
ES	Deslice el MULTI/JOINT® 3000 Plus sobre el extremo del tubo y retire el clip de transporte!
IT	Inserire MULTI/JOINT® 3000 Plus sul tubo e successivamente rimuovere i fermi per il trasporto!
GR	Εισαγετε το multi/joint® 3000 plus στο ακρο του αγωγου και αφαιρεστε το κουμπωμα μεταφορας!
CZ	Nasunout tvarovku MULTI/JOINT® 3000 Plus na konec trubky a teprve potom odstranit oranžové vymezovací díly!
HU	Csúsztassa a MULTI/JOINT® 3000 Plus kötőidomot a csővégre, és távolítsa el a szállítási rögzítőelemet!
RO	Introduceti piesa MULTI/JOINT® 3000 Plus pe capatul conductei si inlaturati siguranta pentru transport!
PL	Nasuń łącznik MULTI/JOINT® 3000 Plus na rurę a następnie zdejmij zabezpieczenie transportowe!
RUS	Установите MULTI/JOINT® 3000 Plus на конец трубы и удалите транспортировочный хомут!

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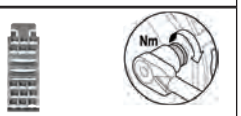
11ª CHECK TABLE FOR INSTALLATION TORQUE AND PRESSURE RATING**.

RESTRAINT

MULTI/JOINT® 3000 Plus **with Fikser**

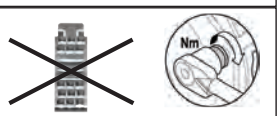


(S)St, CU, DCI, GCI, AC*, GRP*, PVC, PE, PEX, PP-B, PP-H, ABS
(* NO guarantee as quality varies!)

DN	**Torque (Nm)**	MOP gas (bar)	PFA water (bar)
DN425	140	5	10
DN450			
DN475			
DN500			
DN550			
DN600			

NON RESTRAINT

MULTI/JOINT® 3000 Plus **without Fikser**



(S)St, CU, DCI, GCI, AC, GRP, PVC, PE, PEX, PP-B, PP-H, ABS

DN	**Torque (Nm)**	MOP gas (bar)	PFA water (bar)
DN425	140	8	16
DN450			
DN475			
DN500			
DN550			
DN600			

**** ALL FITTINGS PN16 RATED, SEE RESTRAINT TABLE FOR PULL OUT RESISTANT FORCES**

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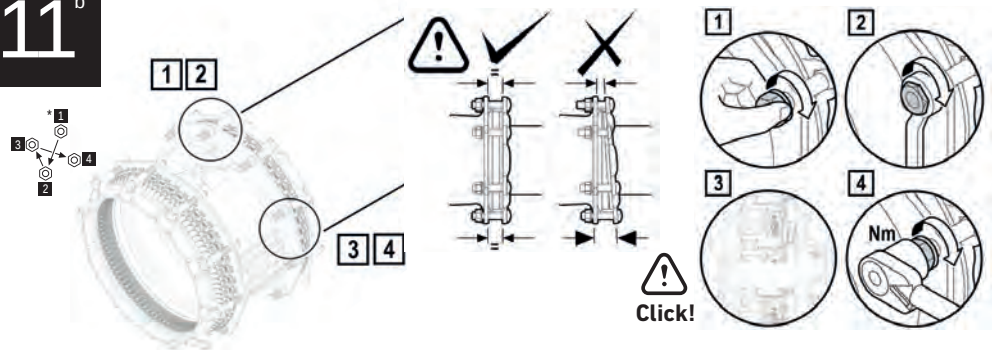
11 b

TIGHTEN THE BOLTS WITH THE CORRECT TORQUE.



D	Der Tabelle das richtige Schraubendrehmoment entnehmen. Die Verwendung eines Drehmomentschlüssels ist zwingend erforderlich.
NL	Zie de tabel voor het juiste aandraaimoment.
F	Vérifiez dans les tableaux le couple de serrage à respecter.
NO	Mutrene strammes i kryss, da man skal holde samme avstand mellom koblingshus og trykkflens(gland). Etterstram med en momentnøkkel ihht. Momenttabell.
SE	Kontrollera i tabell korrekt åtdragningsmoment.
DK	Det rigtige tilspændingsmoment findes i tabellen.
FIN	Tarkista taulukosta oikea vääntömomentti.
PT	Ver na tabela a força de aperto.
ES	Ver tabla para el par de apriete.
IT	Controllare la tabella per il serraggio.
GR	Συμβουλευτείτε τον πίνακα για την επιλογή της κατάλληλης στρεπτικής ροπής που θα πρέπει να εφαρμοστεί στον σύνδεσμο, κατά την διαδικασία της σύσφιξης του στον αγωγό.
CZ	Zkontrolovat v tabulce správný utahovací moment.
HU	Ellenőrizze a táblázatot a megfelelő nyomaték érdekében.
RO	Se verifica in tabel valoarea momentului de stangere.
PL	Odczytaj z tabeli odpowiedni moment dokręcania śrub.
RUS	Проверить по таблице соответствующий момент затяжки болтов.

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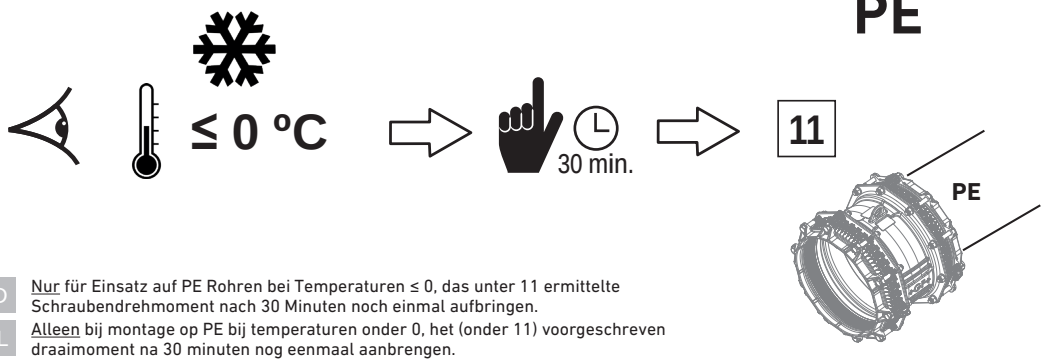
12

≤ 0 °C ONLY ON PE PIPE UNDER FREEZING CONDITIONS, APPLY TORQUE (PRESCRIBED UNDER 11) ONE MORE TIME AFTER 30 MINUTES.



D	Nur für Einsatz auf PE Rohren bei Temperaturen ≤ 0, das unter 11 ermittelte Schraubendrehmoment nach 30 Minuten noch einmal aufbringen.
NL	Alleen bij montage op PE bij temperaturen onder 0, het (onder 11) voorgeschreven draaimoment na 30 minuten nog eenmaal aanbrengen.
F	Répetez l'étape 11 après 30 minutes seulement sur des tubes en PE en temps glacial.

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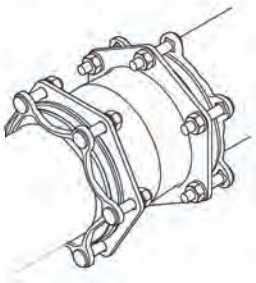
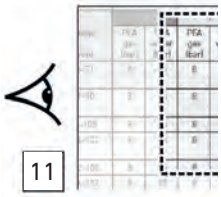
13 CONDUCT A PRESSURE TEST.





$P_{max} \leq 1{,}5 \times PFA$

D	Dichtheitsprüfung durchführen.
NL	Voer een druktest uit.
F	Procédez à un essai de pression.
NO	Utfør trykktest på hele installasjonen, med minimum det aktuelle driftstrykk før anlegget dekkes til.Trykktestingen må ikke overstige 1,5 x PFA (max arbeidstrykk) i henhold til tabellen.
SE	Utför tryckprovning.
DK	Gennemfør en trykprøvning.
FIN	Aseta painetesti.
PT	Efetuar teste de pressão.
ES	Realizar un test de presión.
IT	Fare test in pressione.
GR	Για τον έλεγχο της στεγανότητας της σύνδεσης πραγματοποιείστε δοκιμή υπό πίεση στον αγωγό για τυχόν διαρροές.
CZ	Provést tlakovou zkoušku.
HU	Hajtson végre nyomáspróbát.
RO	Se realizeaza un test de presiune.
PL	Przeprowadź próbę ciśnieniową.
RUS	Провести опрессовку.

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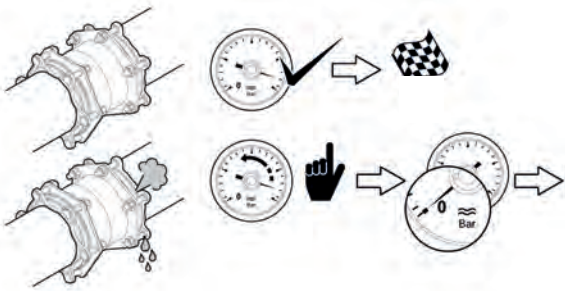
14 TEST OK ⇨ INSTALLATION FINISHED. IF PRESSURE TEST FAILS: REINSTALL FITTING.



Disassembly & Reuse

D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief → opnieuw installeren. Test OK → installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.
NO	Trykkprøving negativ → Re-installer kobling. Test OK → installasjon er utført.
SE	Tryckprovning falerar → Ommontera rördelen. Test OK → installation avslutad.
DK	Trykprøvning negativ → Re-installer kobling. Test OK → installationen er udført.
FIN	Paine testi hylätty → asenna uudelleen. Testi OK → asennus suoritettu.
PT	Teste de pressão falhou → Voltar a instalar o acessório → Teste OK → Instalação terminada.
ES	Test de Presion Fallo → Reinstalar el accesorio TEST OK → Instalacion completada
IT	Se test negativo → Reinstallare. Se test positivo → Installazione finita.
GR	Σε περίπτωση που η εγκατάσταση αποτύχει και υπάρχει διαρροή στη σύνδεση → Επανα-εγκαταστήσετε το σύνδεσμο. Σε περίπτωση που η δεν παρατηρηθεί διαρροή στη σύνδεση → η εγκατάσταση του συνδέσμου επί του αγωγού έχει ολοκληρωθεί με επιτυχία.
CZ	Tlaková zkouška není OK → tvarovku znovu namontovat. Tlaková zkouška OK → konec instalace.
HU	Nyomás próba sikertelen → végezze el újra az idom felhelyezését. Próba sikeres → felhelyezés befejezve.
RO	Daca testul de presiune esueaza → Se reinstaleaza fitingul. Daca rezultatul testului este OK → Instalare terminata.
PL	Nieudana próba → Ponowny montaż łącznika. Udana próba → montaż zakończony.
RUS	Опрессовка не пройдена → Установить фитинг снова. Опрессовка пройдена → Установка завершена.

UM/MJ/DN425-DN600/02-22

User manual MULTI/JOINT® 3000 Plus DN625 - DN825

Georg Fischer Waga N.V.

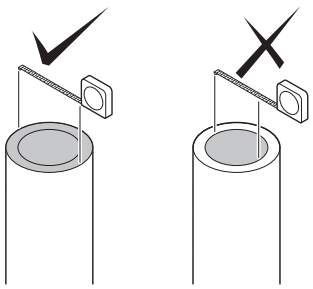
+GF+

MULTI/JOINT® 3000 Plus
DN625-DN825

User Manual	GB
Montageanleitung	D
Montagehandleiding	NL
Manuel d'instruction	F
Brukermanual	NO
Användarmanual	SE
Montagevejledning	DK
Käyttömanuaali	FIN
Manual de instalacion	ES
Manual de instalação	PT
Manuale d'uso	IT
Manualul utilizatorului	RO
Návod k montáži	CZ
Εγχειρίδιο χρήσης	GR
Szerelési utasítás	HU
Руководство по установке	RUS
Instrukcja Obsługi	PL

UM/MJ/DN625-DN825/02-22

1 CHECK TABLE IF CHOSEN FITTING MATCHES PIPE OD.

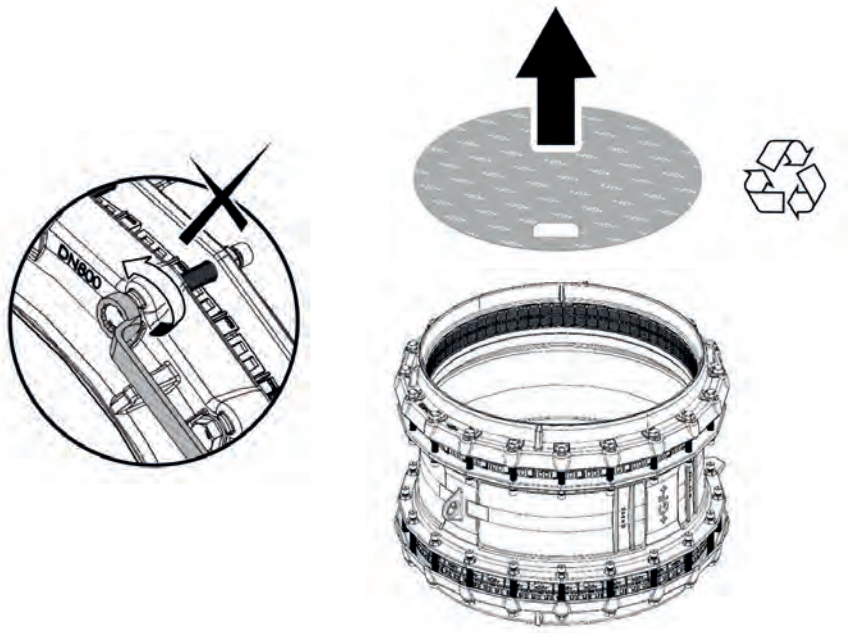


DN	Range (mm)
DN625	630 – 662
DN675	665 – 697
DN700	709 – 741
DN750	745 – 777
DN800	799 – 831
DN825	837 – 869

D	Die Rohraussendurchmesser überprüfen und mit der Tabelle vergleichen.
NL	Kies de juiste koppeling m.b.v. de tabel.
F	Vérifiez sur le tableau si le raccord couvre bien le diamètre extérieur du tube.
NO	Sjekk med tabell at koblingen stemmer overens med utvendig diameter rør.
SE	Kontrollera om vald rördel stämmer mot rörets ytterdiameter.
DK	Kontroller med tabellen om den valgte kobling passer til rørdiameteren.
FIN	Tarkista taulukosta jos valitut asennukset sopivat putkelle QD.
PT	Ver na tabela se os acessórios estão de acordo com o diâmetro exterior dos tubos.
ES	Ver tabla anexa para unir distintos diametros exteriores.
IT	Controllare sulla tabella se il giunto è idoneo al d.e. del tubo.
GR	Με βάση το πίνακα μεγεθών, επιβεβαιώστε ότι ο σύνδεσμος είναι κατάλληλος για τη συγκεκριμένη διάμετρο αγωγού στον οποίο πρόκειται να τοποθετηθεί.
CZ	V tabulce zkontrolovat použitelnost tvarovky v daném rozsahu průměrů.
HU	Ellenőrizze, hogy a kiválasztott idom megfelel-e a cső külső átmérőjéhez.
RO	Se verifica in tabel daca fitingul ales corespunde Dext al tevii.
PL	Sprawdź w tabeli czy łącznik pasuje do zewnętrznej średnicy rury.
RUS	Проверить по таблице совместимость фитинга с трубой.

UM/MJ/DN625-DN825/02-22

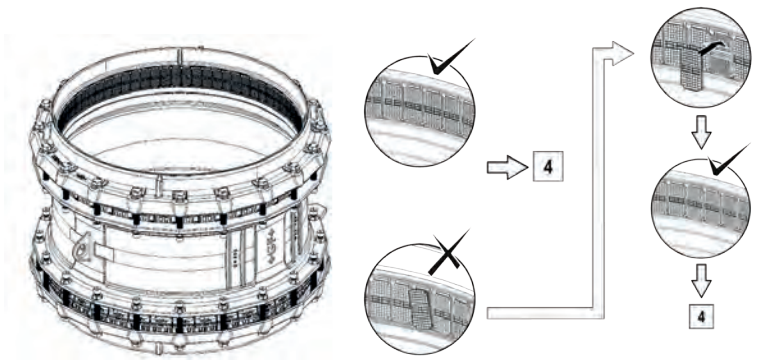
2



UM/MJ/DN625-DN825/02-22

3

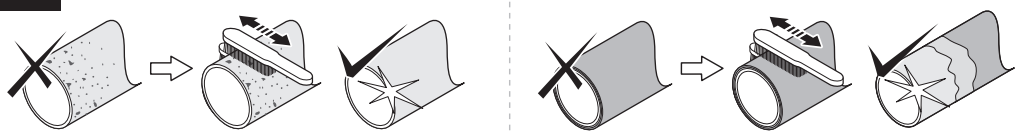
CHECK IF “FIKSERS” (METAL GRIPPERS) POSITION IS CORRECT.



D	Sicherstellen, dass alle Fikser richtig positioniert sind.
NL	Controleer de juiste positie van de “Fiksers”.
F	Assurez-vous que les “Fiksers” (les mors métalliques) sont correctement positionnés.
NO	Kontroller at “Fikserne” er i riktig possisjon.
SE	Kontrollera om “Fiksers” position är korrekt.
DK	Kontroller om “Fikernes” placering er korrekt.
FIN	Tarkista “Fikseri”, että asento on oikein.
PT	Ver se a posição dos “Fiksers” é correto.
ES	Revise si los “Fiksers” se encuentran en la posicion correcta.
IT	Controllare gli inserti antisfilo “Fiksers” sono OK.
GR	Ελέγξτε αν τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος “Fiksers” έχουν αγκυρώσει σωστά πάνω στον αγωγό.
CZ	Zkontrolovat správnou polohu fixerů.
HU	Ellenőrizze, hogy a “Fikser”-ek megfelelő helyzetben vannak-e.
RO	Se verifica daca pozitia elementelor de fixare “Fiksers” este corecta.
PL	Sprawdź poprawność ułożenia blaszek.
RUS	Убедиться в правильности установки “Fiksers” (металлических фиксаторов).

UM/MJ/DN625-DN825/02-22

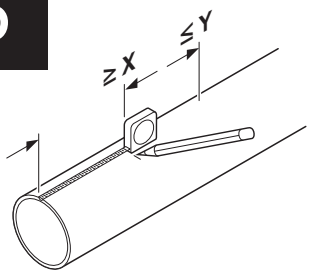
4 REMOVE ALL RUST, DIRT, BURRS, AND DAMAGES FROM THE PIPE. INSTALL ON MEDIUM CARRYING PIPE MATERIAL ONLY.



D	Entfernen sie auf dem rohr den gesamten rost-, schmutz-, grate- und beschädigungen. Nur auf der rohroberfläche des medium transportierenden rohres installieren. (PE) schutzmantel sind zu entfernen.
NL	Verwijder alle roest, vuil, bramen en beschadigingen. Monteer alleen op de mediumvoerende buis.
F	Eliminez la rouille, la saleté, les bourrelets de soudures et les défauts de surface du tube. Assemblez seulement sur le matériau principal du tube.
ES	Retirar toda la suciedad, polvo y daños de la tubería. Instalar solo en la tubería que transporte el agua.
NO	Fjern all rust, skitt, riper og skader fra røret. Installer kun på selve medierørets material.
SE	Avlägsna all rost och smuts samt avgrada och ta bort ytdefekter på röret. Montera endast på mediabärande rörmaterial.
DK	Fjern al rust, snavs, spåner, belægninger og beskadigelser fra røret. Montér kun på selve det mediebærende rør.
FIN	Poista aina putkenpinnalta ruoste, irtoaines, vahingoittunut materiaali, lovet ja putkipinnoitteet. Asennus ainoastaan hyväksytyille putkimateriaaleille.
PT	Remova toda a ferrugem, sujeira e a parte danificada da tubulação. Instalar somente em tubulações feitas para transporte de fluídos.
HU	Távolítson el minden rozsdát, szennyeződést, sorját és sérülést a csőről. Csak közvetlenül a közegszállító csőanyagra helyezze fel az idomot.
IT	Rimuovere ruggine, sporco, bave e intagli dal tubo. Rimuovere eventuali rivestimenti dal tubo prima di installare il raccordo.
GR	Αφαιρέστε όλες τις οξειδώσεις, τις ακαθαρσίες, τις παραμορφώσεις και τις αλλοιώσεις υλικού από την επιφάνεια του αγωγού. Αγκυρώστε αποκλειστικά επί επιφάνειας του αγωγού μεταφοράς του ρευστού.
CZ	Odstranit všechny nečistoty, rez a otřepy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Inlaturati rugina, mizeria, bavurile si defectele de pe teava. Instalati doar pe materialul conductei care este in contact cu fluidul transportat.
PL	Usuń z rury rdzę, brud, zadziory i inne uszkodzenia. Instalować tylko na materiale rury, który ma kontakt z medium.
RUS	Удалить любые загрязнения, ржавчину, задиры и повреждения с поверхности трубы. Устанавливать только на основной материал несущей трубы.

UM/MJ/DN625-DN825/02-22

5 CHECK TABLE FOR MINIMUM INSERTION DEPTH (X).



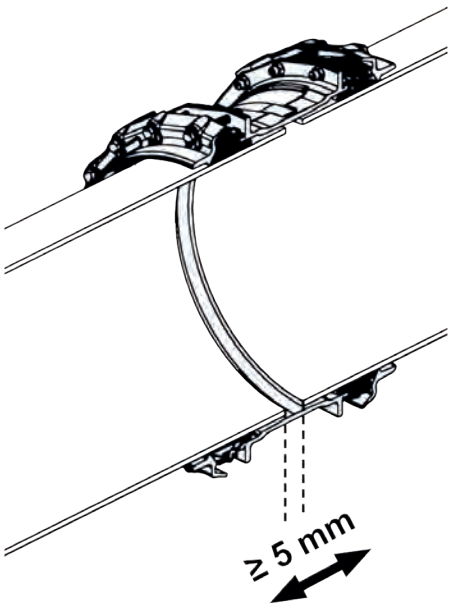
DN	X Min. insertion depth (mm)	Y Max. insertion depth (mm)
DN625	210	320
DN675		
DN700		
DN750		
DN800		
DN825		

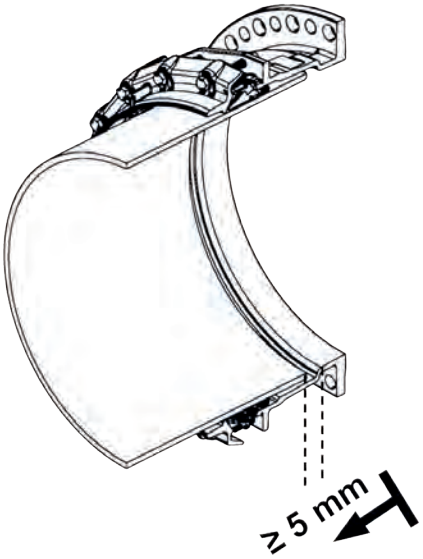
** For maximum joint gap information; see our technical manual*

D	Aus der Tabelle die Einstecktiefe entnehmen (X).
NL	Zie de tabel voor de minimale insteekdiepte (X).
F	Vérifiez sur le tableau la profondeur d'insertion (X) correcte du tube.
NO	Sjekk med tabell for korrekt innstikksdybde (X).
SE	Kontrollera i tabellen korrekt insticksdjup (X).
DK	Kontroller med tabellen for korrekt indstiksdybde (X).
FIN	Tarkista taulukosta oikea asennus syvyys (X).
PT	Ver na tabela a profundidade (X) de inserção do tubo no acessório.
ES	Ver tabla para la profundidad de inserción minima (X).
IT	Controllare sulla tabella la profondità di inserimento (X).
GR	Συμβουλευτείτε τον πίνακα για την υπόδειξη του κατάλληλου βάθους εισαγωγής (X) του συνδέσμου στον αγωγό.
CZ	Zkontrolovat v tabulce správnou hloubku zasunutí (X).
HU	Ellenőrizze a táblázatot a megfelelő betolási mélység érdekében (X).
RO	Se verifica in tabel adancimea corecta de inserare (X).
PL	Korzystając z tabeli określ głębokość nasunięcia łącznika (X).
RUS	Проверить по таблице значение глубины ввода трубы (X).

UM/MJ/DN625-DN825/02-22

6

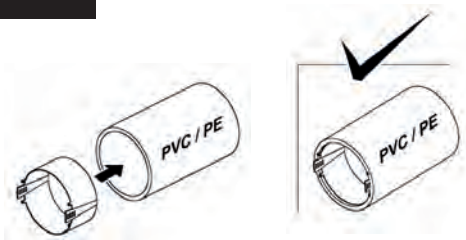




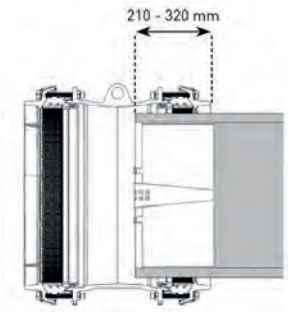
UM/MJ/DN625-DN825/02-22

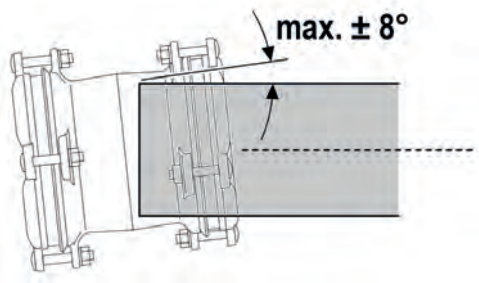
7

INSERTS FOR PLASTIC PIPES.
NOMINAL ANGULARITY.*



(Use insert stiffener wedge MJ DN625 - DN800
approved by Georg Fischer Waga N.V.)

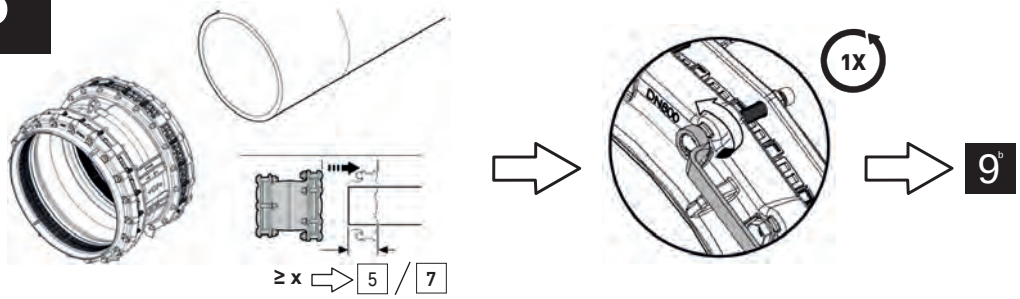




* Based on the middle of the range..

UM/MJ/DN625-DN825/02-22

8a SLIDE THE MULTI/JOINT® 3000 PLUS ONTO PIPE END AND REMOVE TRANSPORT CLIP!



D	Den MULTI/JOINT® 3000 Plus auf das Rohrende schieben und den Transportclip entfernen!
NL	Schuif de MULTI/JOINT® 3000 Plus op het buiseinde en verwijder de transportclips!
F	Faites glisser le MULTI/JOINT® 3000 Plus sur l'extrémité du tuyau et retirez le clip de transport!
NO	Skli MULTI/JOINT® 3000 Plus muffe innpå rørende og deretter fjern trasportpinnen.
SE	Skjut MULTI/JOINT® 3000 Plus kopplingen på röret och ta bort transportsäkringarna (clip)!
DK	Skub MULTI/JOINT® 3000 Plus på røret og fjern transportbeslaget!
FIN	Liu'uta MULTI/JOINT® 3000 Plus putken päälle ja poista kuljetus klipsi!
PT	Deslize o MULTI/JOINT® 3000 Plus na extremidade do tubo e remover o clipe de transporte!
ES	Deslice el MULTI/JOINT® 3000 Plus sobre el extremo del tubo y retire el clip de transporte!
IT	Inserire MULTI/JOINT® 3000 Plus sul tubo e successivamente rimuovere i fermi per il trasporto!
GR	Εισαγετε το multi/joint® 3000 plus στο ακρο του αγωγου και αφαιρεστε το κουμπωμα μεταφορασ!
CZ	Nasunout tvarovku MULTI/JOINT® 3000 Plus na konec trubky a teprve potom odstranit oranžové vymezovací díly!
HU	Csúsztassa a MULTI/JOINT® 3000 Plus kötőidomot a csővégre, és távolítsa el a szállítási rögzítőelemet!
RO	Introduceti piesa MULTI/JOINT® 3000 Plus pe capatul conductei si inlaturati siguranta pentru transport!
PL	Nasuń łącznik MULTI/JOINT® 3000 Plus na rurę a następnie zdejmij zabezpieczenie transportowe!
RUS	Установите MULTI/JOINT® 3000 Plus на конец трубы и удалите транспортировочный хомут!

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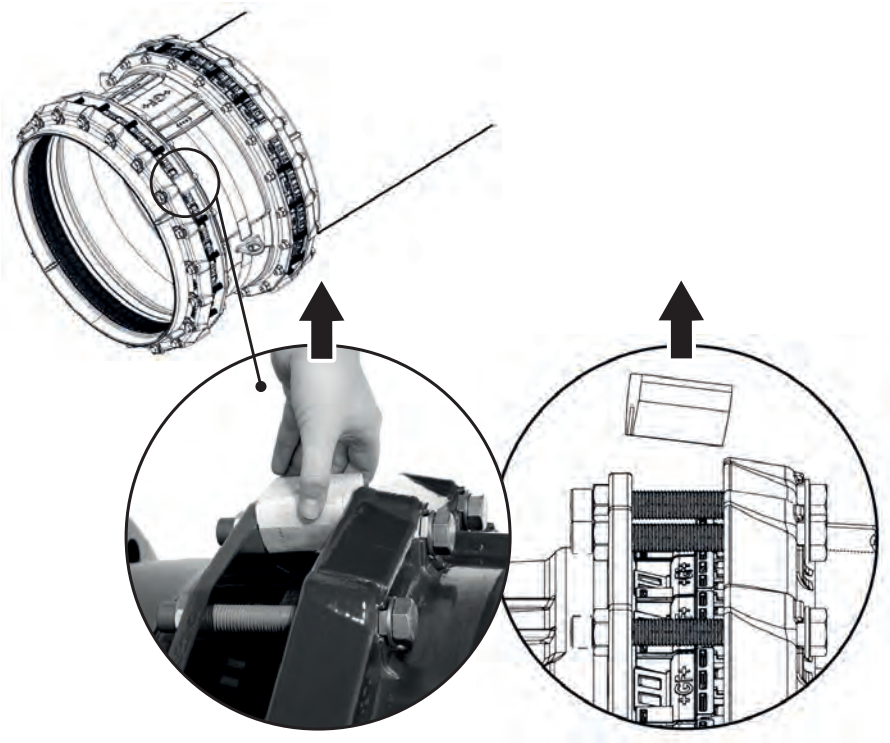
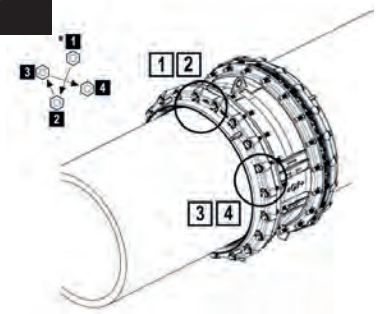
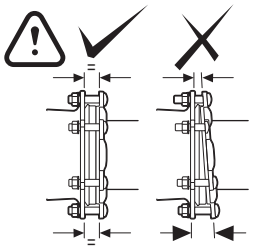
8b

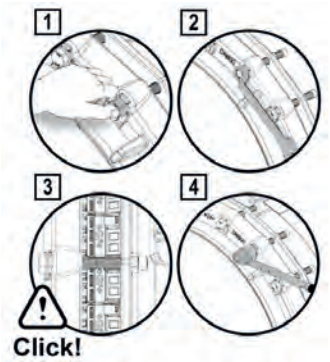


UM/MJ/DN625-DN825/02-22

9a TIGHTEN THE BOLTS WITH THE CORRECT TORQUE.







D	Der Tabelle das richtige Schraubendrehmoment entnehmen.
NL	Zie de tabel voor het juiste aandraaimoment.
F	Vérifiez dans les tableaux le couple de serrage à respecter.
NO	Mutrene strammes i kryss, da man skal holde samme avstand mellom koblingshus og trykkflens(gland). Etterstram med en momentnøkkel ihht. Momenttabell.
SE	Kontrollera i tabell korrekt åtdragningsmoment.
DK	Det rigtige tilspændingsmoment findes i tabellen.
FIN	Tarkista taulukosta oikea vääntömomentti.
PT	Ver na tabela a força de aperto.
ES	Ver tabla para el par de apriete.
IT	Controllare la tabella per il serraggio.
GR	Συμβουλευτείτε τον πίνακα για την επιλογή της κατάλληλης στρεπτικής ροπής που θα πρέπει να εφαρμοστεί στον σύνδεσμο, κατά την διαδικασία της σύσφιξης του στον αγωγό.
CZ	Zkontrolovat v tabulce správný utahovací moment.
HU	Ellenőrizze a táblázatot a megfelelő nyomaték érdekében.
RO	Se verifica in tabel valoarea momentului de stangere.
PL	Odczytaj z tabeli odpowiedni moment dokręcania śrub.
RUS	Проверить по таблице соответствующий момент затяжки болтов.

UM/MJ/DN625-DN825/02-22

9b CHECK TABLE FOR INSTALLATION TORQUE AND PRESSURE RATING**.

RESTRAINT

MULTI/JOINT® 3000 Plus **with Fikser**

(S)St, CU, DCI, GCI, AC*, GRP*, PVC, PE, PEX, PP-B, PP-H, ABS
(* NO guarantee as quality varies!)

DN	Torque (Nm)		PFA water (bar)
	Metal	Non metal	
DN625	200	140	10
DN675			
DN700			
DN750			
DN800			
DN825			

NON RESTRAINT

MULTI/JOINT® 3000 Plus **without Fikser**

(S)St, CU, DCI, GCI, AC, GRP, PVC, PE, PEX, PP-B, PP-H, ABS

DN	Torque (Nm)	PFA water (bar)
DN625	140	16
DN675		
DN700		
DN750		
DN800		
DN825		

** All fittings PN16 rated, see restraint table for pull out restraint forces

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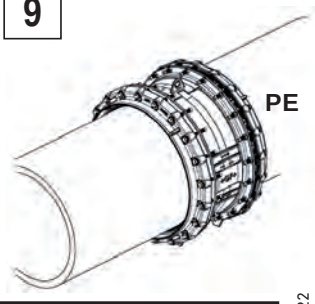
10

≤ 0 °C ONLY ON PE PIPE, APPLY TORQUE (PRESCRIBED UNDER 10) ONE MORE TIME AFTER 30 MINUTES.

PE

≤ 0 °C ⇨ 30 min. ⇨ 9



D	Nur für Einsatz auf PE Rohren bei Temperaturen ≤ 0 °C, das unter 9 ermittelte Schraubendrehmoment nach 30 Minuten noch einmal aufbringen.
NL	Alleen bij montage op PE bij temperaturen onder 0 °C, het (onder 9) voorgeschreven draaimoment na 30 minuten nog eenmaal aanbrengen.
F	Répetez l'étape 9 après 30 minutes seulement sur des tubes en PE en temps glacial.

≥ 0 °C ⇨ 11

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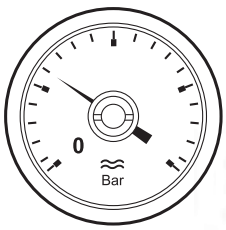
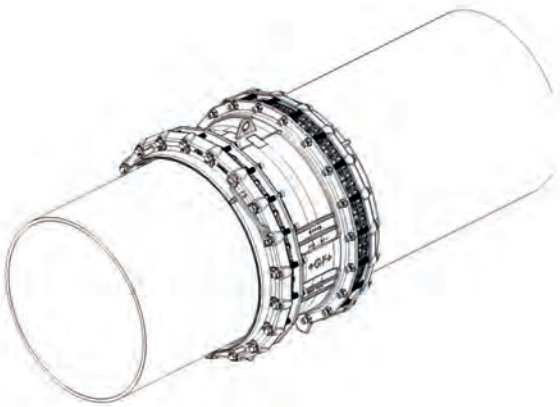
11

CONDUCT A PRESSURE TEST.





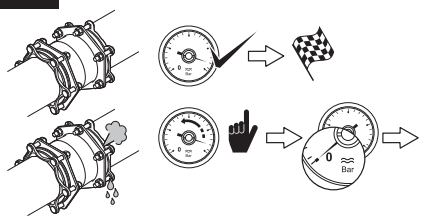
$P_{max} \leq 1{,}5 \times PFA$

D	Dichtheitsprüfung durchführen.
NL	Voer een druktest uit.
F	Procédez à un essai de pression.
NO	Utfør trykktest på hele installasjonen, med minimum det aktuelle driftstrykk før anlegget dekkes til.Trykktestingen må ikke overstige 1,5 x PFA (max arbeidstrykk) i henhold til tabellen.
SE	Utför tryckprovning.
DK	Gennemfør en trykprøvning.
FIN	Aseta painetesti.
PT	Efetuar teste de pressão.
ES	Realizar un test de presión.
IT	Fare test in pressione.
GR	Για τον έλεγχο της στεγανότητας της σύνδεσης πραγματοποιείστε δοκιμή υπό πίεση στον αγωγό για τυχόν διαρροές.
CZ	Provést tlakovou zkoušku.
HU	Hajtson végre nyomáspróbát.
RO	Se realizeaza un test de presiune.
PL	Przeprowadź próbę ciśnieniową.
RUS	Провести опрессовку.

UM/MJ/DN625-DN825/02-22

12

IF PRESSURE TEST FAILS: REINSTALL FITTING.
TEST OK ⇨ INSTALLATION FINISHED.



Disassembly & Reuse

D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief → opnieuw installeren. Test OK → installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.
NO	Trykkprøving negativ → Re-installer kobling. Test OK → installasjon er utført.
SE	Tryckprovning falerar → Ommontera rördelen. Test OK → installation avslutad.
DK	Trykprøvning negativ → Re-installer kobling. Test OK → installationen er udført.
FIN	Paine testi hylätty → asenna uudelleen. Testi OK → asennus suoritettu.
PT	Teste de pressão falhou → Voltar a instalar o acessório → Teste OK → Instalação terminada.
ES	Test de Presion Fallo → Reinstalar el accesorio TEST OK → Instalacion completada
IT	Se test negativo → Reinstallare. Se test positivo → Installazione finita.
GR	Σε περίπτωση που η εγκατάσταση αποτύχει και υπάρχει διαρροή στη σύνδεση → Επανα-εγκαταστήσετε το σύνδεσμο. Σε περίπτωση που η δεν παρατηρηθεί διαρροή στη σύνδεση → η εγκατάσταση του συνδέσμου επί του αγωγού έχει ολοκληρωθεί με επιτυχία.
CZ	Tlaková zkouška není OK → tvarovku znovu namontovat. Tlaková zkouška OK → konec instalace.
HU	Nyomás próba sikertelen → végezze el újra az idom felhelyezését. Próba sikeres → felhelyezés befejezve.
RO	Daca testul de presiune esueaza → Se reinstaleaza fitingul. Daca rezultatul testului este OK → Instalare terminata.
PL	Nieudana próba → Ponowny montaż łącznika. Udana próba → montaż zakończony.
RUS	Опрессовка не пройдена → Установить фитинг снова. Опрессовка пройдена → Установка завершена.

UM/MJ/DN625-DN825/02-22

User manual ST-System

Georg Fischer Waga N.V.

+GF+

GB	User Manual
D	Montageanleitung
NL	Montagehandleiding
F	Manuel d'instruction
NO	Brukermanual
SE	Användarmanual
DK	Montagevejledning
FIN	Käyttömanuaali
ES	Manual de instalacion
PT	Manual de instalação
IT	Manuale D'uso
RO	Manualul utilizatorului
CZ	Návod k montáži
GR	Εγχειρίδιο χρήσης
HU	Szerelési utasítás
RUS	Руководство по установке
PL	Instrukcja Obsługi

ST-System
DN40-DN2200

Georg Fischer Waga N.V.-P.O.Box 290-
8160 AG Epe-The Netherlands-www.waga.nl

User Manual ST-System/02-21

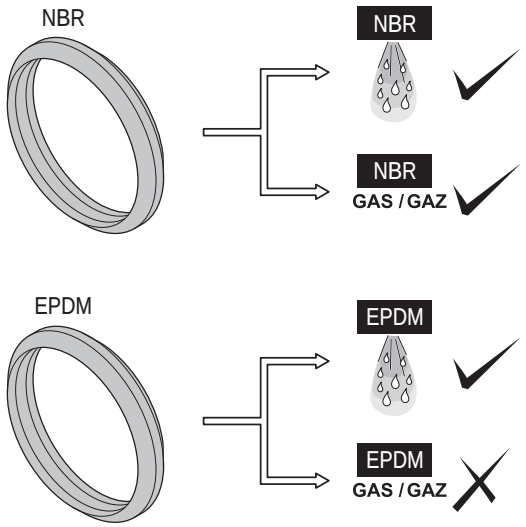
01 **CHECK TABLE FOR MAX. RANGE OF DEDICATED FITTING.**

DN (mm)			Range (mm)		
DN40	-	DN80	+ 2		- 1
DN100	-	DN200	+ 2		- 1,5
DN250	-	DN500	+ 4		- 3
DN600	-	DN1100	+ 5		- 4
DN1200	-	DN1600	+ 5,5		- 5
DN1700	-	DN2200	on request		

THE ST-SYSTEM IS A TAILOR MADE SOLUTION.
IT IS PRODUCED ON CUSTOMER SPECIFICATION ONLY.

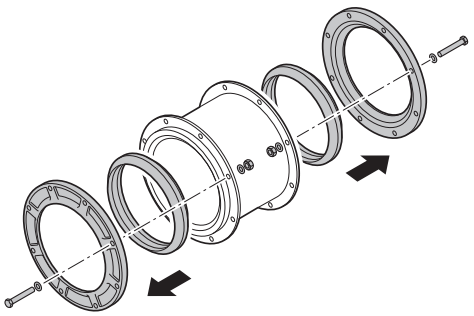
User Manual ST-System/02-21

02



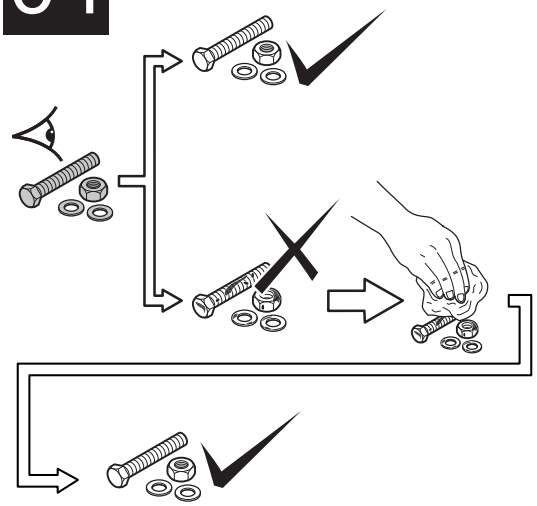
Water = 10, 16 or 25 bar*
Gas = 4 bar*
* Depends on ordered dedicated fitting.

03

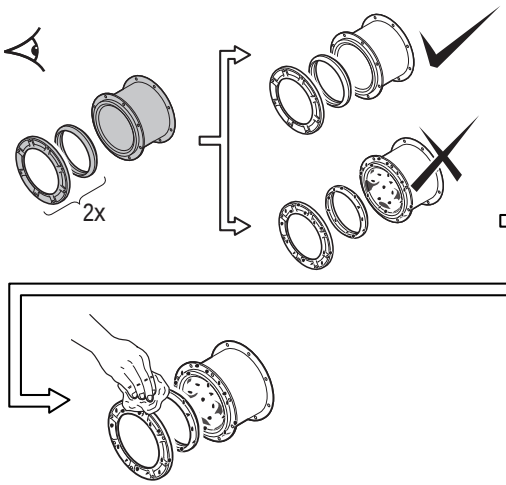


User Manual ST-System/02-21

04

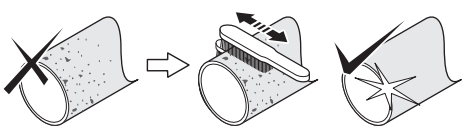


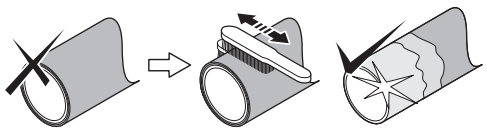
05



User Manual ST-System/02-21

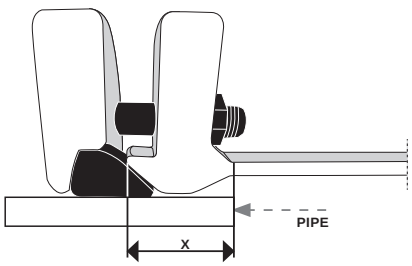
06 REMOVE ALL RUST, DIRT, BURRS, DAMAGES AND ALL FINISHING LAYERS FROM THE PIPE. MOUNT ON MEDIUM CARRYING PIPE MATERIAL ONLY.





D	Von der drucktragenden Rohroberfläche allen Rost, Grat, Schmutz, Schäden und alle Beschichtungen entfernen.
NL	Verwijder alle roest, vuil, bramen, beschadigingen en buislagen. Monteer alleen op de mediumvoerende buis.
F	Eliminez la rouille, la saleté, les bourrelets de soudures, les défauts de surface et toutes les couches de finition du tube. Assemblez seulement sur le matériau principal du tube.
NO	Fjern all rust, løs overflate samt skader på materialet og overflatebehandling.
SE	Avlägsna all rost, smuts, grader och eventuell ytbehandling från röret. Montera endast på mediabärande rörmaterial.
DK	Fjern al rust, snavs, spåner, beskadigelser og alle belægninger på røret. Monter kun på selve det mediebærende rør.
FIN	Poista kaikki ruoste, lika, taite, vauriot ja kasaumat putkesta. Asenna ainoastaan keskivahvalle putkelle.
PT	Remover oxidação, sujidade, rebarbas, e revestimento do tubo.
HU	Távolítson el minden rozsdát, szennyeződést, sorját, sérüléseket és minden fedőréteget a csőről. Csak közvetlenül a közeg szállító csőanyagra helyezze fel az idomot.
ES	Retirar toda la suciedad, polvo, daños y etiquetas de la tuberia. Montar solamente entre tubos.
IT	Rimuovere sporcizia, polvere, intagli e gli strati superficiali della tubazione. Il montaggio deve avvenire sullo strato a contatto del fluido trasportato.
GR	Καθαρίστε όλα τα οξειδωμένα τμήματα, τις επικαθίσεις, τις παραμορφώσεις και τις υλικές βλάβες της επιφάνειας του αγωγού καθώς και τις επιστρώσεις του αγωγού μέχρι τον αγωγό μεταφοράς του υλικού.
CZ	Odstranit všechny nečistoty, rez, otřepy a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Indepartati praful, crestaturile, murdaria, defectele precum si toate straturile de acoperire de pe teava. Se monteaza doar pe materialul conductei.
PL	Usuń wszelkiego rodzaju uszkodzenia, zabrudzenia, zadrapania, rdzę i wierzchnie warstwy na długości rury pokrytej przez łącznik.
RUS	Удалить любые загрязнения, ржавчину, задиры и наплывы, а так же покрытия с поверхности трубы. Устанавливать только на основной материал трубы.

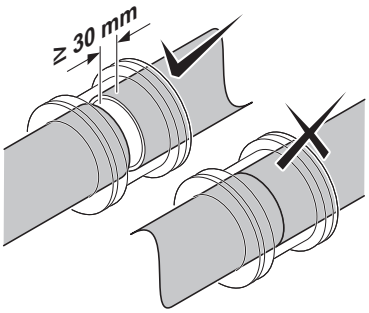
07 CHECK TABLE FOR MINIMUM INSERTION DEPTH (X).



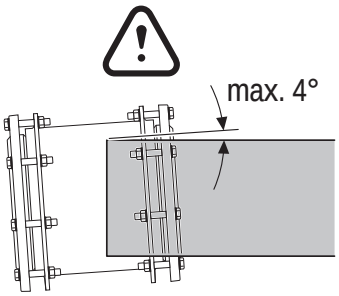
DN	X min.insertion depth (mm)	DN	X min.insertion depth (mm)	DN	X min.insertion depth (mm)
DN100	30	DN400	45	DN1200	90
DN125	30	DN500	50	DN1300	90
DN150	35	DN600	60	DN1400	95
DN200	35	DN700	60	DN1500	95
DN250	45	DN800	70	DN1600	100
DN300	45	DN900	70	›DN1600	on request
DN350	45	DN1000	70		

D	Aus der Tabelle die Einstecktiefe entnehmen.
NL	Zie de tabel voor de minimale insteekdiepte (X).
F	Vérifiez sur le tableau la profondeur d'insertion correcte du tube.
NO	Sjekk med tabell for korrekt innstikksdybde (X).
SE	Kontrollera i tabellen korrekt insticksdjup (X).
DK	Kontroller med tabellen for korrekt indstiksdybde (X).
FIN	Tarkista taulukosta oikea asennus syvyys.
PT	Ver na tabela a profundidade (X) de inserção do tubo no acessório.
ES	Ver tabla para la profundidad de inserción minima.
IT	Controllare sulla tabella la profondità di inserimento (X).
GR	Συμβουλευτείτε τον πίνακα για την υπόδειξη του κατάλληλου βάθους εισαγωγής (X) του συνδέσμου στον αγωγό.
CZ	Zkontrolovat v tabulce správnou hloubku zasunutí (X).
HU	Ellenőrizze a táblázatot a megfelelő betolási mélység érdekében (X).
RO	Se verifica in tabel adancimea corecta de inserare (X).
PL	Korzystając z tabeli określ głębokość nasunięcia łącznika (X).
RUS	Проверить по таблице значение глубины ввода трубы (X).

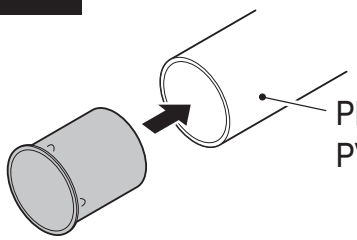
08



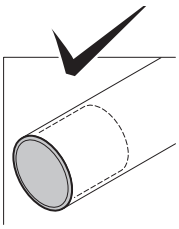
09



10

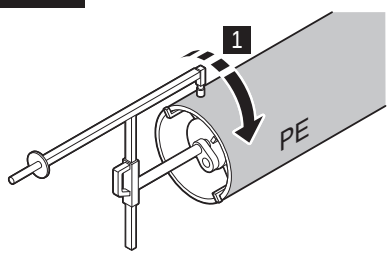


PE, PP-B, PB,
PVC SDR>21



11

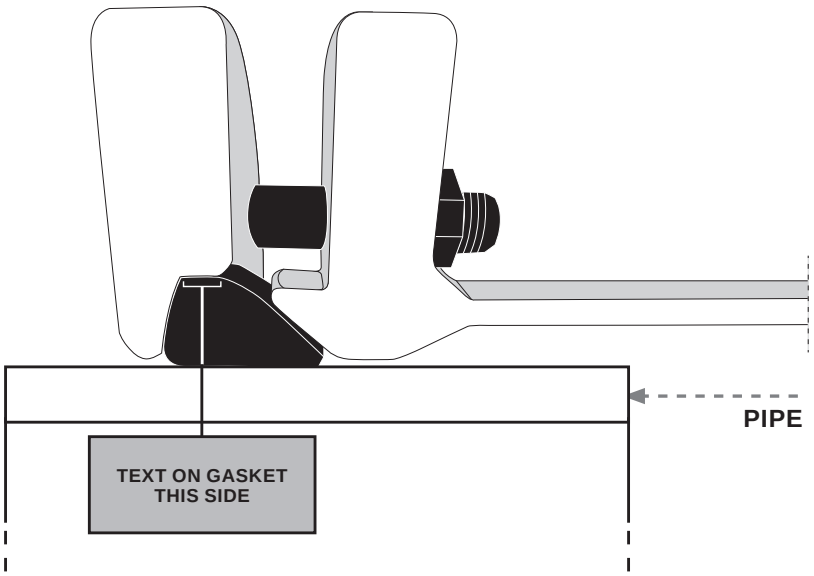
USE AN (BY GEORG FISCHER) APPROVED SCRAPING TOOL.



GAS / GAZ

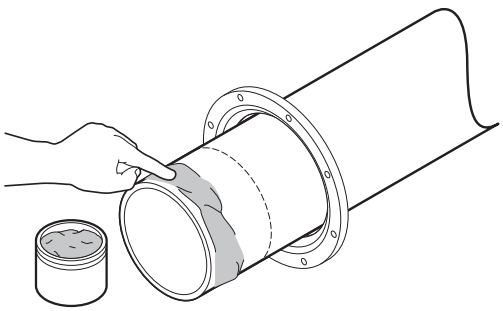
D	Für PE-Rohre ist ein Georg Fischer Schälgerät zu verwenden.
NL	Gebruik een door Georg Fischer goedgekeurde schiller.
F	Utilisez un grattoir mécanique approuvé par Georg Fischer.
NO	Bruk skrapeverktøy godkjent av Georg Fischer.
SE	Använd ett (av Georg Fischer) godkänt skrapverktyg.
DK	Brug et (af Georg Fischer) godkendt skrabeværktøj.
FIN	Käytä (Georg Fischer) hyväksymää karhennus työkalua.
PT	Usar uma ferramenta (Georg Fischer) adequada.
ES	Utilizar un rascador circular Georg Fischer.
IT	Utilizzare in raschiatore approvato da Georg Fischer.
GR	Για τις εργασίες καθαρισμού και λείανσης χρησιμοποιείστε το κατάλληλο (από την GF) εργαλείο.
CZ	Použít škrabku (schválenou Georg Fischer).
HU	Használjon (GF által jóváhagyott) hántoló szerszámot.
RO	Se va utiliza un dispozitiv de raschetat recomandat (de GF).
PL	Użyj skrobaka (Georg Fischer) do przygotowania rury.
RUS	Использовать только разрешенный (компанией Georg Fischer) инструмент для зачистки.

12 CORRECT POSITION OF THE CLAMP RING AND GASKET



User Manual ST-System/02-21

13 APPLY SUITABLE GREASE

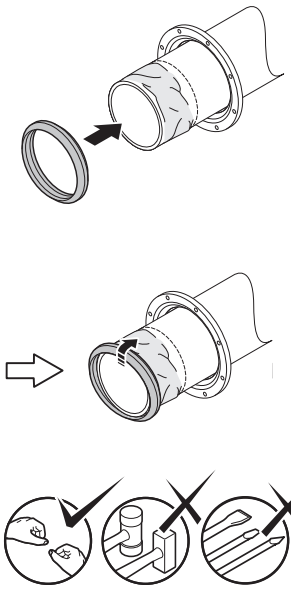


GAS / GAZ

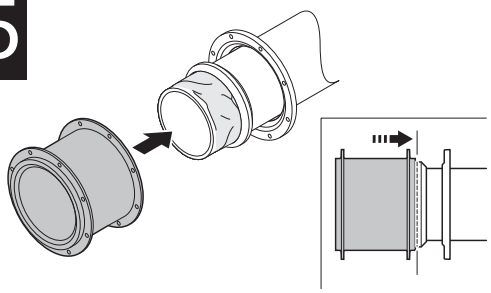
D	Für die Gasanwendung den Dichtungsbereich ausreichend mit Gleitmittel versehen.
NL	Smeer in met een geschikt glijmiddel.
F	Lubrifiez avec une graisse appropriée.
NO	Bruk egnet glidemiddel.
SE	Applicera lämpligt smörjmedel.
DK	Påfør egnet glidemiddel.
FIN	Lisää soveltuva rasva.
PT	Aplicar lubrificante adequado (nunca de origem mineral).
ES	Aplicar la grasa correspondiente.
IT	Applicare lubrificante opportuno.
GR	Τοποθετήστε κατάλληλη ποσότητα λιπαντικής ουσίας στα μηχανικά μέρη του συνδέσμου.
CZ	Aplikovat vhodné mazivo.
HU	Használjon megfelelő kenőanyagot.
RO	Se aplica lubrifiant.
PL	Nałóż warstwę smaru.
RUS	Использовать только подходящую смазку.

User Manual ST-System/02-21

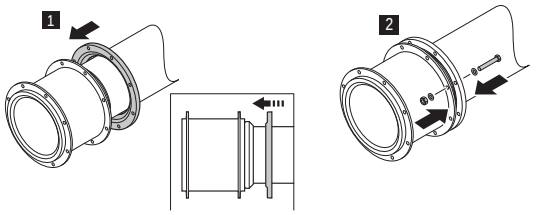
14



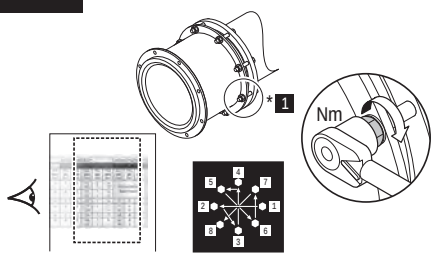
15

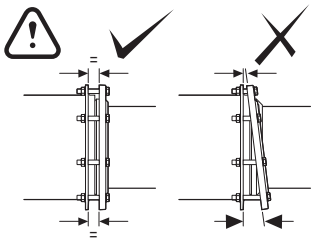


16



17 CHECK TABLE FOR CORRECT TORQUE.



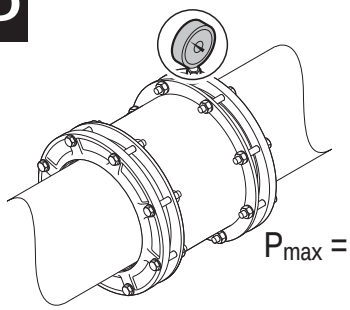


Bolts	Torque (Nm)
M16	55
M20	110
M24	190
M27	280
M30	380

D	Der Tabelle das richtige Schraubendrehmoment entnehmen.
NL	Zie de tabel voor het juiste aandraaimoment.
F	Vérifiez dans les tableaux le couple de serrage à respecter.
NO	Mutrene strammes i kryss, da man skal holde samme avstand mellom koblingshus og trykkflens(gland). Etterstram med en momentnøkkel ihht. Momenttabell.
SE	Kontrollera i tabell korrekt åtdragningsmoment.
DK	Det rigtige tilspændingsmoment findes i tabellen.
FIN	Tarkista taulukosta oikea vääntömomentti.
PT	Ver na tabela a força de aperto.
ES	Ver tabla para el par de apriete.
IT	Controllare la tabella per il serraggio.
GR	Συμβουλευτείτε τον πίνακα για την επιλογή της κατάλληλης στρεπτικής ροπής που θα πρέπει να εφαρμοστεί στον σύνδεσμο, κατά την διαδικασία της σύσφιξης του στον αγωγό.
CZ	Zkontrolovat v tabulce správný utahovací moment.
HU	Ellenőrizze a táblázatot a megfelelő nyomaték érdekében.
RO	Se verifica in tabel valoarea momentului de stangere.
PL	Odczytaj z tabeli odpowiedni moment dokręcania śrub.
RUS	Проверить по таблице соответствующий момент затяжки болтов.

User Manual ST-System/02-21

18 CONDUCT A PRESSURE TEST.

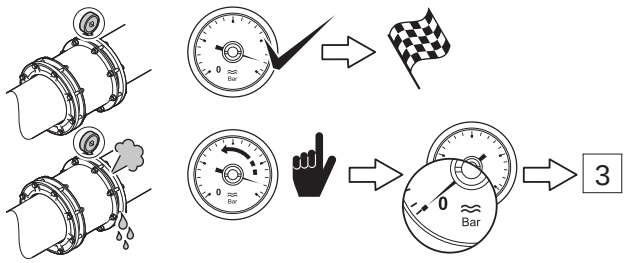


P_{max} = 1.5 x PFA

Water = 10, 16 or 25 bar*
Gas = 4 bar*
* Depends on ordered dedicated fitting.

D	Dichtheitsprüfung durchführen.
NL	Voer een druktest uit.
F	Procédez à un essai de pression.
NO	Utfør trykktest på hele installasjonen, med minimum det aktuelle driftstrykk før anlegget dekkes til.Trykktestingen må ikke overstige 1,5 x PFA (max arbeidstrykk) i henhold til tabellen.
SE	Utför tryckprovning.
DK	Gennemfør en trykprøvning.
FIN	Aseta painetesti.
PT	Efectuar teste de pressão.
ES	Realizar un test de presión.
IT	Fare test in pressione.
GR	Για τον έλεγχο της στεγανότητας της σύνδεσης πραγματοποιείστε δοκιμή υπό πίεση στον αγωγό για τυχόν διαρροές.
CZ	Provést tlakovou zkoušku.
HU	Hajtson végre nyomáspróbát.
RO	Se realizeaza un test de presiune.
PL	Przeprowadź próbę ciśnieniową.
RUS	Провести опрессовку.

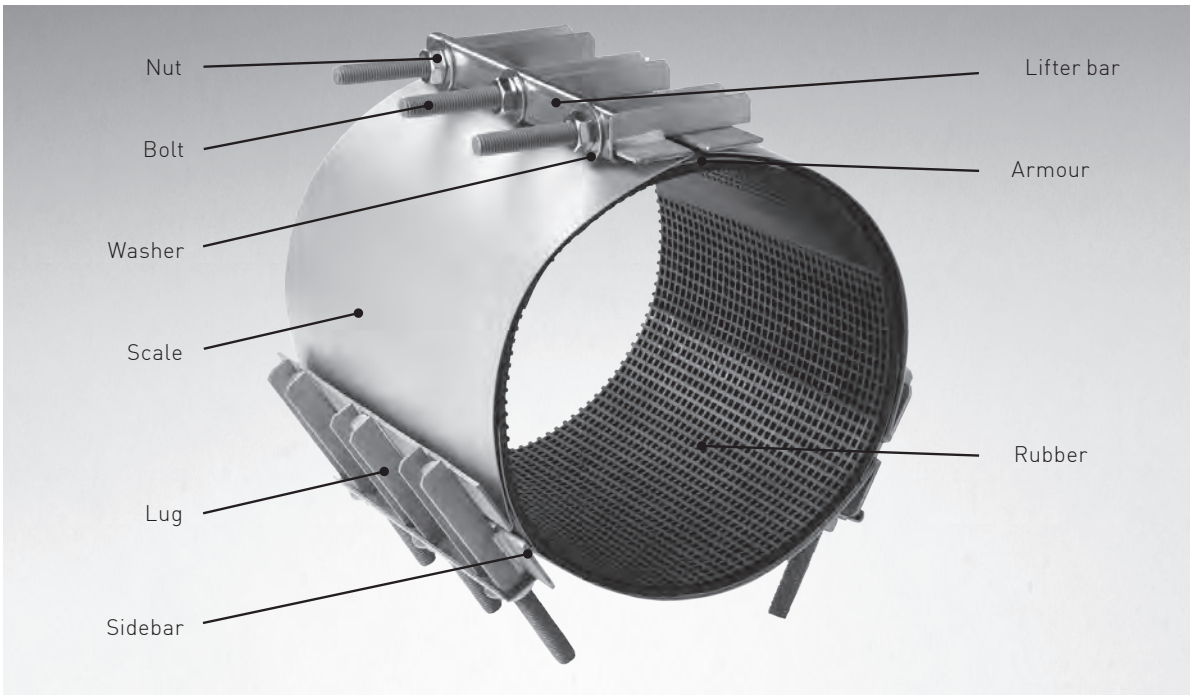
19 PRESSURE TEST FAIL => REINSTALL FITTING. TEST OK => INSTALLATION FINISHED.



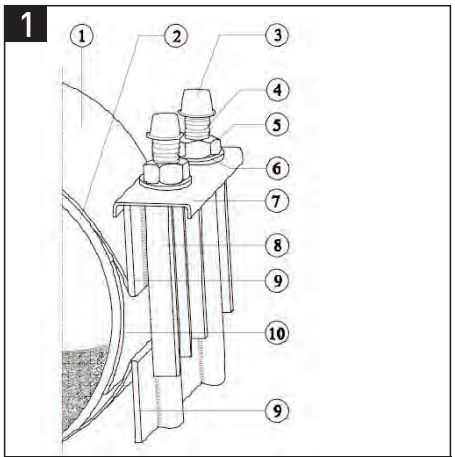
D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief => opnieuw installeren. Test OK => installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.
NO	Trykkprøving negativ => Re-installer kobling. Test OK => installasjon er utført.
SE	Tryckprovning falerar => Ommontera rördelen. Test OK => installation avslutad.
DK	Trykprøvning negativ => Re-installer kobling. Test OK => installationen er udført.
FIN	Paine testi hylätty=> asenna uudelleen. Testi OK => asennus suoritettu.
PT	Teste de pressão falhou => Voltar a instalar o acessório => Teste OK =>Instalação terminada.
ES	Test de Presion Fallo => Reinstalar el accesorio TEST OK=> Instalacion completada
IT	Se test negativo => Reinstallare. Se test positivo => Installazione finita.
GR	Σε περίπτωση που η εγκατάσταση αποτύχει και υπάρχει διαρροή στη σύνδεση => Επανα-εγκαταστήσετε το σύνδεσμο. Σε περίπτωση που η δεν παρατηρηθεί διαρροή στη σύνδεση=> η εγκατάσταση του συνδέσμου επί του αγωγού έχει ολοκληρωθεί με επιτυχία.
CZ	Tlaková zkouška není OK => tvarovku znovu namontovat. Tlaková zkouška OK => konec instalace.
HU	Nyomás próba sikertelen => végezze el újra az idom felhelyezését. Próba sikeres => felhelyezés befejezve.
RO	Daca testul de presiune esueaza => Se reinstaleaza fitingul. Daca rezultatul testului este OK => Instalare terminata.
PL	Nieudana próba => Ponowny montaż łącznika. Udana próba => montaż zakończony.
RUS	Опрессовка не пройдена => Установить фитинг снова. Опрессовка пройдена => Установка завершена.

User manual Multi/Clamp

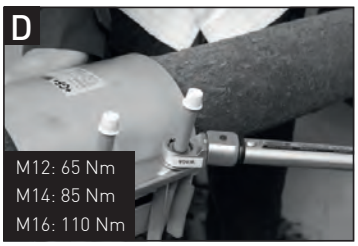
Multi/Clamp



Multi/Clamp Single (1)

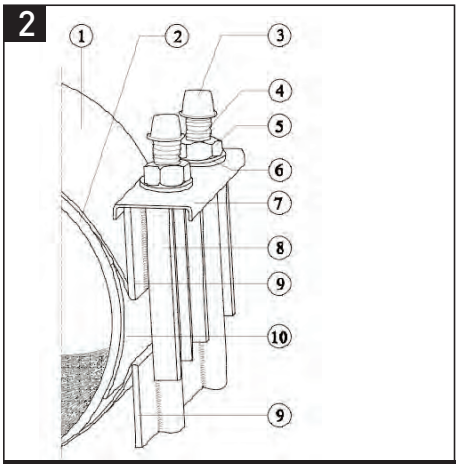


Multi/Clamp Single



Double and Triple (2), Flange (3)

2



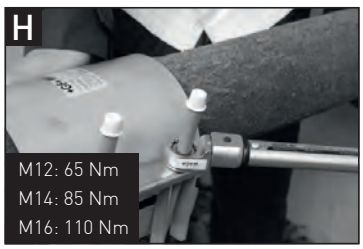
Multi/Clamp Double and Triple

E

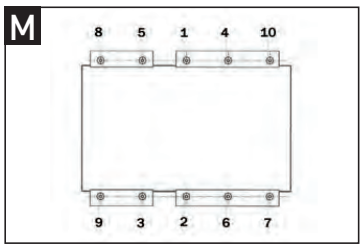
F

G

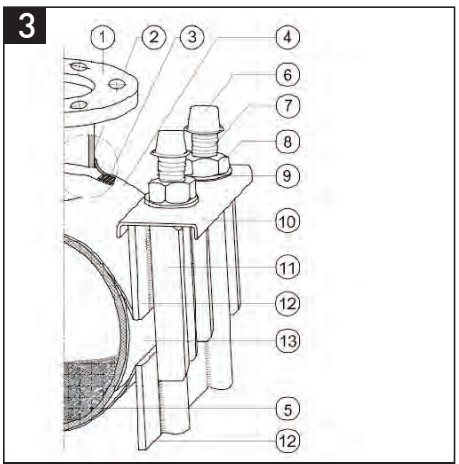
H



M



3



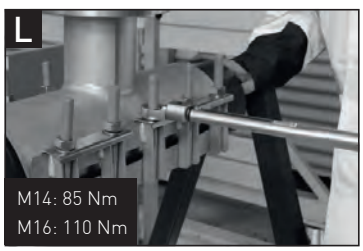
Multi/Clamp Flange

I

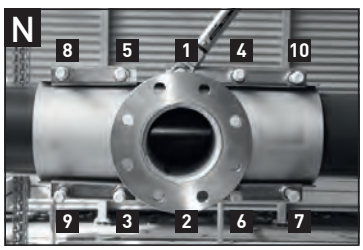
J

K

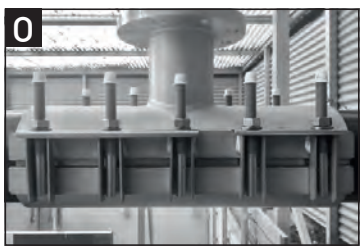
L



N



O



Instruction Manual - Multi/Clamp Single (1), Double and Triple (2) EN

1. Prior to installation

Check the outside diameter of the pipe and make sure that you use the correct clamp dimension.

This clamp may only be installed by authorized installers.

This manual must be read in full before using this product. Liability will be fully rejected by incorrect use or incorrect installation of this product.

2. Preparing the clamp

Note the sequence of the pictures on the fold-out page. 1 + 2

Explanation parts

1. Scale, 2. Rubber, 3. Bolt cap, 4. Bolt, 5. Nut, 6. Washer, 7. Lifter bar, 8. Lug, 9. Sidebar, 10. Armour

- Keep threads free of dust, dirt and any other material that could jeopardize proper tightening.
- Untighten nuts to the end of the bolts, but DO NOT REMOVE THEM.

Apply a suitable lubricant to pipe and rubber in upper and lower scale. This is **NOT** necessary for use on plastic pipe. **DO NOT** use oil-based grease on the gasket or pipe. Do not grease the nuts and bolts.

When installed on PVC or other plastic pipes reduce the recommended torque by 50% in order to avoid the gasket being pushed out.

Always consult your supplier before using Multi/Clamp on plastic pipes. On PE and similar plastic pipes Multi/Clamp repair clamps should only be used as a short term repair solution.

Instruction Manual - Multi/Clamp Single (1), Double and Triple (2) EN

3. Preparing the pipe(s)

- Clean the pipe by scraping the pipe and remove dirt and corrosion. The surface has to be smooth.
- Mark the pipe where the ends of the clamp will be. Make sure that the damaged area is located in the middle of the marked section. After installation use this mark to confirm that the clamp has been properly positioned.

4. Installation

Step 1

=› Multi/Clamp Single (1)

- Open up the clamp and wrap it around the pipe (A).
- Position the clamp in such a way that the bolts are conveniently placed for assembly and tightening.

=› Multi/Clamp Double and Triple (2)

- Place the lifter bar of the underscale over the lugs of the upperscale at one side (E).
- Pull the other side of the underscale over the upperscale (F).
- Position the clamp in such a way that the bolts are conveniently placed for assembly and tightening.
- Check the gasket edges along the sleeve top and bottom halves to be sure they overlap and are not folded.

Make sure that no material sticks to the gasket, which could jeopardize proper sealing as the gasket is wrapped and tightened around the pipe.

If during an under pressure installation the leakage pressure is too high, steps 1 and 2 can be performed beside the pipe fracture or damage.

Step 2

- Snap the lifter bar OVER the lugs (C+G). Do not use force. Make sure that the armour slides under the band and that the gasket tails are not folded under but are lying flat around the pipe.

=› Multi/Clamp Single (1)

- Tighten the nuts by hand first, and then use a torque wrench. The pressure on the bolts will slowly move the bridge plate into place over the sidebar edge.

=> Multi/Clamp Double and Triple (2)

- Pull the sidebars towards each other and tighten the nuts by hand first, then use a torque wrench.

Step 3

- Tighten all nuts evenly in 20 Nm increments using a torque wrench (D+H+M) in specified order.
- **Minimum torque:** M12 (SW19): 65 Nm, M14 (SW22): 85 Nm, M16 (SW24): 110 Nm (PVC -50%).
- Maximum torque = 1,2 x minimum torque.
- The gap between the sleeve halves on either side should be the same when nuts are not fully torqued. Torque all nuts evenly (O).

Step 4

 After 20 minutes retighten with minimum torque.

5. Testing the installation

 Always take safety precautions.

- Always pressure test with no more than the intended working pressure before backfilling. If leakage occurs repeat step 2 and 3, retighten to proper torque according to step 3 and 4. Then pressure test again.
- Backfill carefully around the installed clamp.

Instruction Manual - Multi/Clamp Flange and Thread (3) EN

1. Prior to installation

Check the outside diameter of the pipe and make sure that you use the correct dimension of the clamp.

This clamp may only be installed by authorized installers.

This manual must be read in full before using this product. Liability will be fully rejected by incorrect use or incorrect installation of this product.

2. Preparing the clamp

Note the sequence of the pictures on the fold-out page. 3

Explanation parts

1. Flange, 2. Flange neck, 3. Sealing gasket, 4. Upper scale, 5. Clamp gasket, 6. Bolt cap, 7. Bolt, 8. Nut, 9. Washer, 10. lifter bar, 11. Lug, 12. Sidebar, 13. Armour

- Make sure that the sealing gasket (3) is fitted evenly around the outlet.
- Keep threads free of dust, dirt and any other material that could jeopardize proper tightening.
- Remove nuts, washers and bridge plates from the bolts.

Apply a suitable lubricant to pipe and rubber in upper and lower scale. This is **NOT** necessary for use on plastic pipe. **DO NOT** use oil-based grease on the gasket or pipe. Do not grease the nuts and bolts.

When installed on PVC pipe reduce the recommended torque by 50% in order to avoid the gasket being pushed out.

Always consult your supplier before using Multi/Clamp on plastic pipes. **DO NOT** use Multi/Clamp Flange and Thread on PE and similar plastic pipes.

3. Preparing the pipe(s)

- Clean the pipe by scraping the pipe and remove dirt and corrosion. The surface has to be smooth.
- Mark the pipe where the ends of the clamp will be. After installation use this mark to [illegible] that the clamp has been properly positioned.

Instruction Manual - Multi/Clamp Flange and Thread (3) EN

4. Installation

Step 1

- Place the outlet half of the sleeve on the pipe and move into position (I).

Step 2

- Place the underscale in position with the upperscale (J).
- Make sure that no material sticks to the gasket, which could jeopardize proper sealing as the gasket is wrapped and tightened around the pipe.
- Check the gasket edges along the sleeve top and bottom halves to be sure they overlap and are not folded.

Step 3

- Reinstall the lifter bar, washer and nuts and tighten the nuts by hand (K).
- Tighten all nuts evenly in 20 Nm increments using a torque wrench in the specified order (L+N).
- Minimum torque: M14 (SW22): 85 Nm
  M16 (SW24): 110 Nm
- Maximum torque = 1,2 x minimum torque.
- The gap between the sleeve halves on either side should be the same when nuts are not fully torqued. Torque all nuts evenly (O).

Step 4

After 20 minutes retighten with minimum torque.

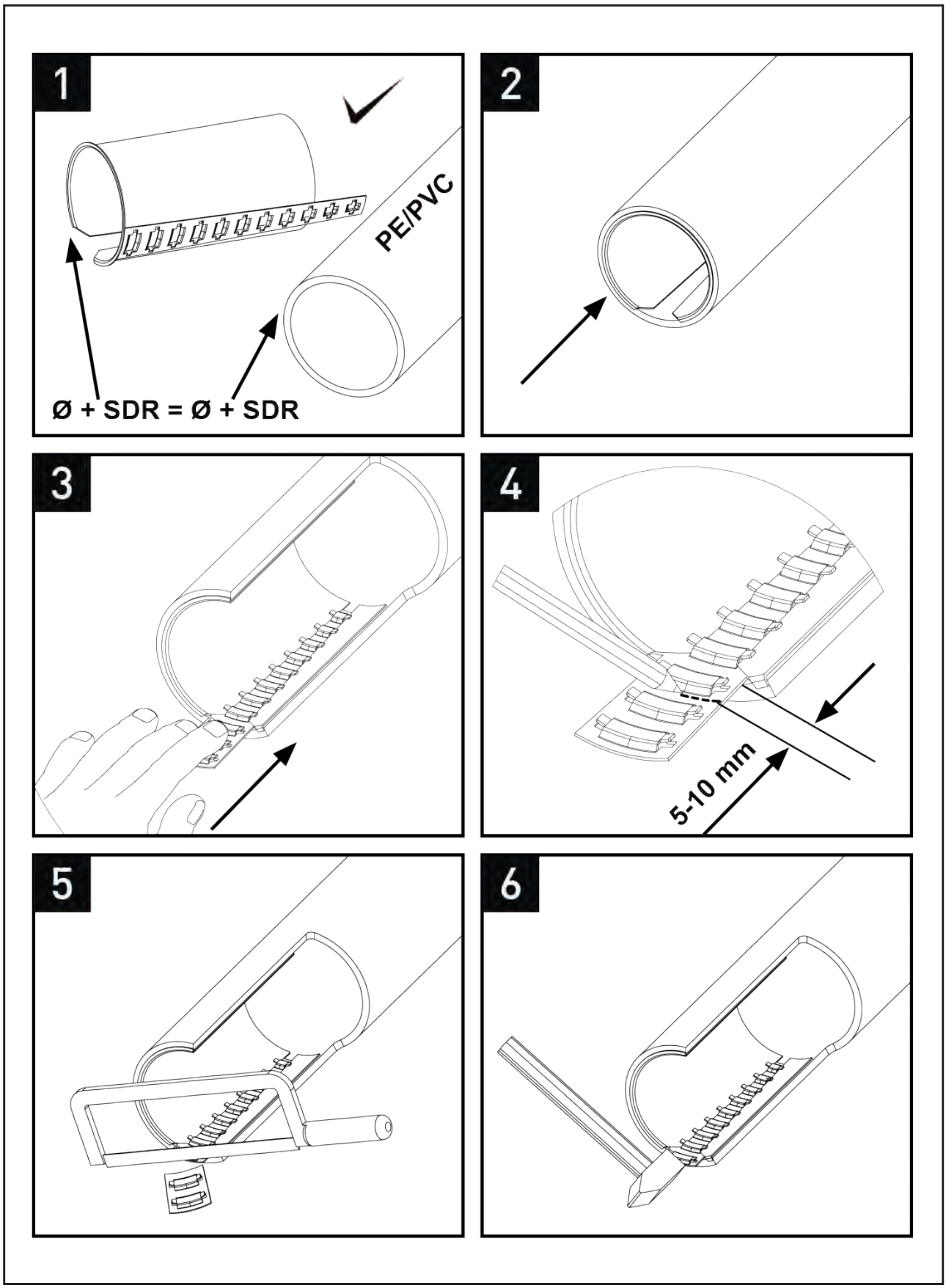
- If necessary support the flange according to standard codes of practice when heavy accessories are attached to it.

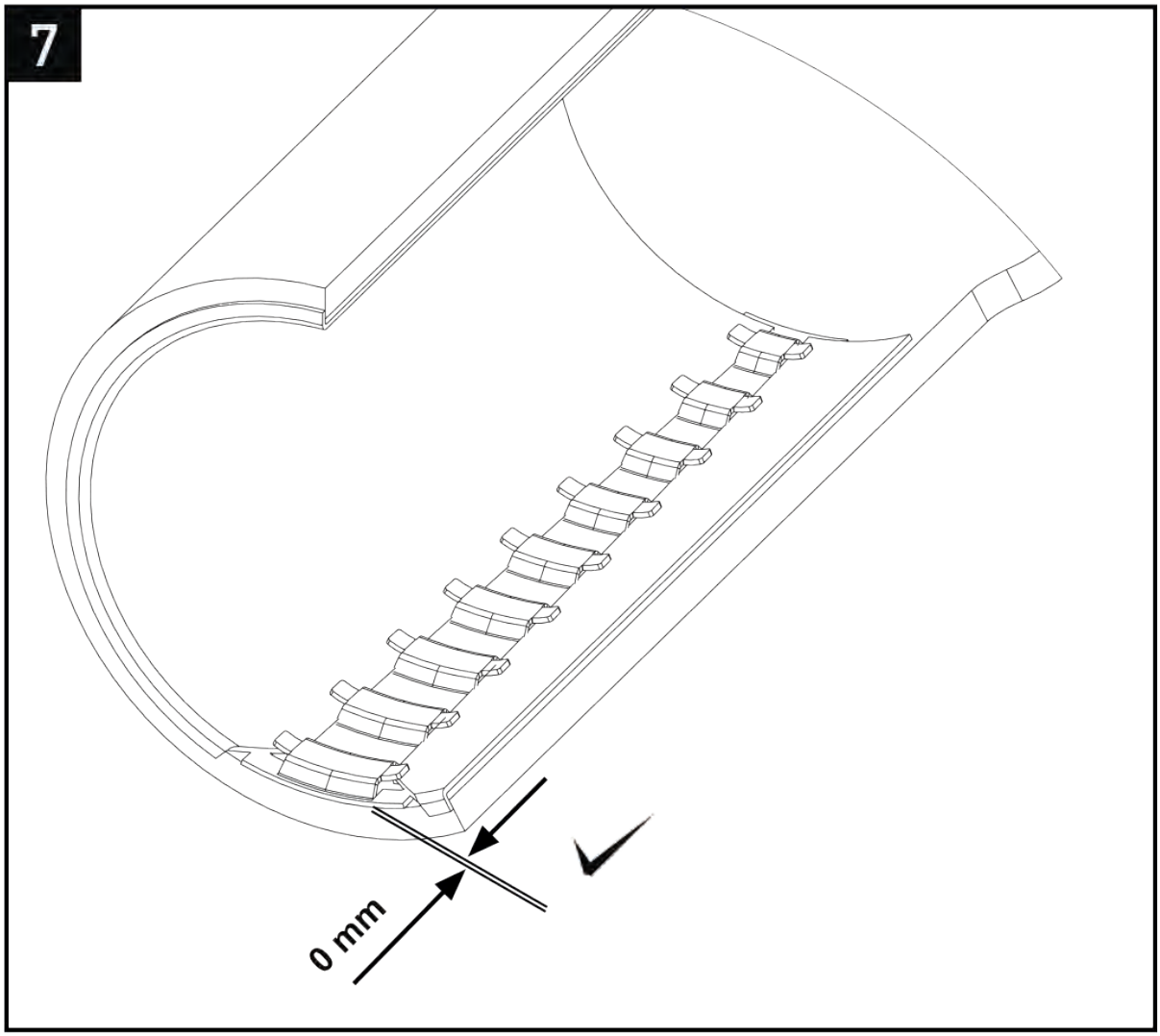
5. Testing the installation

Always take safety precautions.

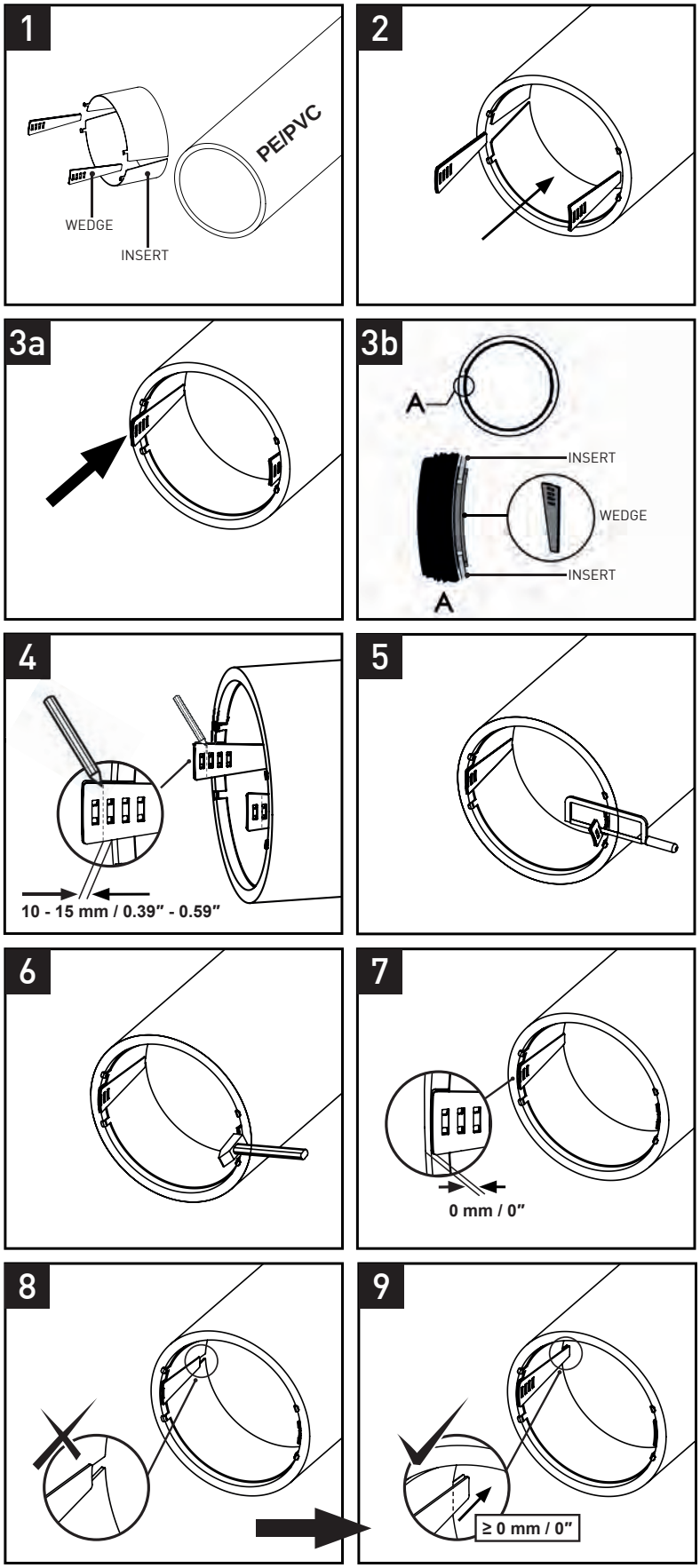
- Always pressure test with no more than the intended working pressure before backfilling the ditch. If leakage occurs repeat step 2 and 3, retighten to proper torque according to step 3 and 4. Then pressure test again.
- Backfill carefully around the installed clamp.

User manual Insert Stiffener
with wedge




7
0 mm

User manual Insert Stiffener
with wedge MJ DN625 - DN800



07-2020

+GF+

When using a MULTI/JOINT® DN625 till DN800 on plastic pipes, the use of an insert stiffener MJ DN625 - DN800 is mandatory

Tender specifications

MULTI/JOINT® 3000 Plus: tender specifications for water

Tender specification for large tolerance fittings for use in fluids like potable water and sewage & waste water; Georg Fischer WAGA MULTI/JOINT® 3000 Plus or equal.

Scope

This tender specification specifies the requirements for large tolerance couplings, flange adaptors and other fittings (hereinafter called mechanical joints), restraint or non restraint, sized DN50 up to and including DN825, for conveying fluids like potable water, waste water and cooling water, suitable for fluid temperatures between -5˚C and 50˚C, suitable to be installed under and above ground, and inside and outside buildings.

The mechanical joints shall be constructed and certified in conformity with **EN 14525**.

Ranges

The mechanical joints shall be suitable **for all pipe materials**, both metal and non-metal, like PE, PVC, GRP, PB, asbestos cement, copper, steel, galvanized steel, stainless steel AISI 304 and AISI 316, grey cast iron, (ductile) cast iron and concrete.

Mechanical joints shall be designed to cover following pipe outside diameters per nominal diameter (see table below).

Separated bolt sets

Couplings shall have **separate bolt sets (misaligned DN50-DN200)** for each socket end, enabling connecting 1 pipe end at a time and ensuring optimal bolt torque at each pipe end.

Possibility of changing configuration on the spot

The mechanical joint shall offer the **possibility of changing the configuration** from restraint to non restraint or vice versa at the time of installation, by either inserting or removing gripping elements on the spot.

Ambient temperature at installation

The mechanical joints with EPDM gasket shall be suitable for installation at ambient temperatures between -20°C and +50°C.

DN size	**Min. range** (mm)	**Max. range** (mm)	**Min. length coupling** (mm)	**Min. length flange adaptor**
50	46	71	206	165
65	63	90	215	170
80	84	105	218	170
100	104	132	228	173
125	132	155	240	192
150	154	192	278	211
200	192	232	303	221
225	230	268	350	216
250	267	310	377	264
300	315	356	384	293
350	352	393	380	291
400	392	433	380	297
425	432	464	460	330
450	450	482	460	330
475	481	513	460	360
500	500	532	460	332
550	548	580	460	330
600	605	637	480	339
625	630	662	657	446
675	665	697	660	509
700	709	741	667	434
750	745	777	667	
800	799	831	667	431
825	837	869	667	455

Marking requirements

All mechanical joints shall be legibly and durably marked. **Marks shall be cast on the body** and shall bear at least the following information:

- The manufacturer's name or mark
- Identification of the year of manufacture
- Identification of ductile iron
- Identification of DN size
- Identification of the range of external diameters that the mechanical can connect

Marking requirements on rubber gasket

All rubber gaskets shall be legibly and durably marked. The rubber gasket shall bear at least the following information:

- The manufacturer's name or mark
- Identification of the year of manufacture
- Identification of the range of external diameters over which the mechanical joint works
- The type of gasket (EPDM or NBR)
- The EN-standard

Additional information to be supplied with the mechanical joint

The following information shall be supplied **on or with** each mechanical joint:

- Installation instructions
- Maximum joint gap
- Maximum allowable angular deflection (8° per side, based on middle of range)
- Pipe materials for which the mechanical joint is intended to be used with non restrained and restrained joints.
- Need for supporting sleeves (inserts)
- Bolt torque
- Information about reusability of the mechanical joint
- Code for traceability

Quality assurance

- The manufacturer's quality system shall conform to ISO 9001:2015
- The manufacturer's environmental system shall conform to ISO 14001:2015
- The manufacturer's international occupational health and safety management system specification shall conform to ISO 45001:2018

Technical support

Product training and technical information.

- The manufacturer or the sales representative shall provide a specialized theoretical and active practical product training given by qualified instructors to enable installers of the above mentioned products to be able to understand and use the products and associated tooling correctly and efficiently under site conditions.
- In addition to the main subject matter all training courses shall additionally cover other associated distribution pipeline products as well as routine repair and maintenance procedures.
- Additional training courses for inspectors, group leaders and teaching staff are to be provided upon request.
- The manufacturer has to provide accurate and easy-to-understand operating instructions in at least one internationally recognized language, which can be used at any subsequent time for reference purposes.
- The manufacturer must have in-house test facilities to execute basic tests.

Hygienic packaging / protection from production to point of use

The manufacturer shall supply the product with a hygienic packaging / protection. The hygienic packaging / protection will be applied during the production / assembly process. The hygienic packaging / protection shall protect the product from dirt, dust and other contaminants during transport and storage till point of use where the hygienic packaging / protection will be removed.

Certification

Products shall bear the EN 14525 certificate of KIWA (BRL-775), ÖVGW (QS-W 503) and SVGW.
Products shall bear the NSF 61 certificate of NSF.
Products with NBR gasket shall bear the Watermark of KIWA for use in potable water.

Material specifications

Body & clamp rings:	All metal parts, except the gripping elements, shall be made of ductile iron in conformity with **EN-GJS-450-10-HB200**.
Coating:	Coating shall be a **Resicoat® RT9000R4 epoxy powder coating** or equal, with a **minimum layer thickness of 250 micron** and chemical resistance of pH 2 up to pH 13. **Coating shall be approved by an internationally accepted institute for potable water or other fluids (e.g. WRc, KIWA, DVGW)** and shall be certified **according the requirements of GSK (Association for Excellent Corrosion Protection with Epoxy resin powder coating)** in accordance with DIN 3476 (P), DIN 30677-2 and EN 14901.
Bolts, Nuts, washers:	Bolts, nuts and washers shall be made of stainless steel A2-70 (AISI 304) or A4-80 (AISI 316). Bolts shall have a **non-chemical dry anti-friction coating to prevent cold- welding** due to fretting. Nuts are galvanized and passivated to prevent galling.
Rubber gasket:	EPDM according to **EN 681-1**, for the **type WA** for cold potable water supply up to 50°C. NBR according to **EN 682** for cold (non) potable water supply, drainage, sewerage and rainwater pipes (continuous flow up to 45°C) with oil resistance.
Gripping elements:	Gripping elements shall be made of stainless steel.
Flanges:	Flanges shall be constructed in such a way that they can be attached to flanges from which the dimensions and tolerances comply to **EN 1092-2**. Flange face shall have concentric grooves. For optimal seal positioning and sealing.
Pressures:	Non restraint: Max. working pressure: 25 bar / 16 bar. Restraint: Max. working pressure: 16 bar / 10 bar. Depending on DN-size and / or pipe material.
Angular deflection:	8° per side, based on middle of range.

MULTI/JOINT® 3000 Plus: tender specifications for gas

Tender specification for large tolerance fittings for use in gas; Georg Fischer Waga MULTI/JOINT® 3000 Plus or equal.

Scope

This tender specification specifies the requirements for large tolerance couplings, flange adaptors and other fittings (hereinafter called mechanical joints), restraint or non restraint, sized DN50 up to and including DN600, for conveying gaseous fuels (gas or natural gas), suitable for temperatures between -5° C and 50° C, suitable to be installed under and above ground and inside and outside buildings. The mechanical joints shall be constructed and certified in conformity with EN 14525.

Ranges

The mechanical joints shall be suitable for all pipe materials, both metal and non-metal, like PE, PVC, GRP, PB, asbestos cement, copper, steel, galvanized steel, stainless steel AISI 304 and AISI 316, grey cast iron, (ductile) cast iron and concrete. Mechanical joints shall be designed to cover pipe outside diameters per nominal diameter (see table).

Separated bolt sets

Couplings shall have separate, misaligned (DN50-DN200), bolt sets for each socket end, enabling connecting 1 pipe end at a time and ensuring optimal bolt torque at each pipe end.

Possibility of changing configuration on the spot

The mechanical joint shall offer the possibility of changing the configuration from restraint to non restraint or vice versa at the time of installation, by either inserting or removing gripping elements on the spot.

Marking requirements

All mechanical joints shall be legibly and durably marked. Marks shall be cast on the body and shall bear at least the following information:

- The manufacturer's name or mark
- Identification of the year of manufacture
- Identification of ductile iron
- Identification of DN size
- Identification of the range of external diameters that the mechanical joint can connect

Marking requirements on rubber gasket

All rubber gaskets shall be legibly and durably marked. The rubber gasket shall bear at least the following information:

- The manufacturer's name or mark
- Identification of the year of manufacture
- Identification of the range of external diameters over which the mechanical joint works.

Ranges

DN-size	Min. range (mm)	Max. range (mm)	Min. length coupling (mm)	Min. length flange adaptor (mm)
DN50	46	71	206	165
DN65	63	90	215	170
DN80	84	105	218	170
DN100	104	132	228	173
DN125	132	155	240	192
DN150	154	192	278	211
DN200	192	232	303	221
DN225	230	268	350	216
DN250	267	310	377	264
DN300	315	356	384	293
DN350	352	393	380	291
DN400	392	433	380	297
DN425	432	464	460	330
DN450	450	482	460	330
DN475	481	513	460	360
DN500	500	532	460	332
DN550	548	580	460	330
DN600	605	637	480	339

- The type of gasket (NBR)
- The EN-standard

Additional information to be supplied with the mechanical joint

The following information shall be supplied on or with each mechanical joint:

- Installation instructions
- Maximum joint gap
- Maximum allowable angular deflection (8° per joint side, based on middle of range)
- Pipe materials for which the mechanical joint is intended to be used with non-restrained and restrained joints
- Need for supporting sleeves (inserts)
- Bolt torque
- Information about re-usability of the mechanical joint
- Code of traceability

Quality assurance

- The manufacturer's quality system shall conform to ISO 9001:2015
- The manufacturer's environmental system shall conform to ISO 14001:2015
- The manufacturer's international occupational health and safety management system specification shall conform to ISO 45001:2018

Technical support

Product training and technical information.

- The manufacturer or the sales representative shall provide a specialized theoretical and active practical product training given by qualified instructors to enable installers of the above mentioned products to be able to understand and use the products and associated tooling correctly and efficiently under site conditions.
- In addition to the main subject matter all training courses shall additionally cover other associated distribution pipeline products as well as routine repair and maintenance procedures.
- Additional training courses for inspectors, group leaders and teaching staff are to be provided upon request.
- The manufacturer has to provide accurate and easy-to-understand operating instructions in at least one internationally recognized language, which can be used at any subsequent time for reference purposes.
- The manufacturer must have in-house test facilities to execute basic tests.

Hygienic packaging / protection from production to point of use

- The manufacturer shall supply the product with a hygienic packaging / protection. The hygienic packaging / protection will be applied during the production / assembly process. The hygienic packaging / protection shall protect the product from dirt, dust and other contaminants during transport and storage till point of use where the hygienic packaging / protection will be removed.

Certification

Products shall bear the KIWA / GASTEQ AR 208 certificate.

Material specifications

Body & clamp rings:	All metal parts, except the gripping elements, shall be made of ductile iron in conformity with EN-GJS-450-10-HB200.
Coating:	Coating shall be a Resicoat® RT9000R4 epoxy powder coating or equal, with a minimum layer thickness of 250 micron and chemical resistance of pH 2 up to pH 13. Coating shall be approved by an internationally accepted institute for gas or other fluids (e.g. WRc, KIWA, DVGW) and shall be certified according the requirements of GSK (Association for Excellent Corrosion Protection with Epoxy resin powder coating) in accordance with DIN 3476 (P) and EN 14901.
Bolts, Nuts, washers:	Bolts, nuts and washers shall be made of stainless steel A2-70 (AISI 304) or A4-80 (AISI 316). Bolts shall have a non-chemical dry anti-friction coating to prevent cold- welding due to fretting. Nuts are galvanized and passivated to prevent galling.
Rubber gasket:	NBR according to EN 682 for gaseous fuel (type GB for hydrocarbon fluids and gaseous fuel).
Gripping elements:	Gripping elements shall be made of stainless steel.
Flanges	Flanges shall be constructed in such a way that they can be attached to flanges from which the dimensions and tolerances comply to EN 1092-2. Flange face shall have concentric grooves. For optimal seal positioning and sealing.
Pressures:	Non restraint: Max. working pressure: 8 bar. Restraint: Max. working pressure: 8 bar / 5 bar. Depending on DN-size and / or pipe material.
Angular deflection:	8° per side, based on middle of range.

ST-System: tender specifications for water & gas

Tender specification for dedicated-sized fittings for use in fluids like potable water, sewage & waste water and gas; Georg Fischer Waga ST-System or equal.

Scope

This tender specification specifies the requirements for dedicated sized couplings, flange adapters and other fittings (hereinafter called mechanical joints), sized DN40 up to and including DN2200, for conveying fluids like potable water, waste water, cooling water and gas, suitable for fluid temperatures between 0° C and 50° C, suitable to be installed under and above ground, and inside and outside buildings. The mechanical joints shall be constructed in conformity with ISO 2531.

Separated bolt sets

On each end of the coupling a separated bolt set will provide an optimal connection to every pipe material.

Quality assurance

- The manufacturer's quality system shall conform to ISO 9001:2015.
- The manufacturer's environmental system shall conform to ISO 14001:2015.
- The manufacturer's international occupational health and safety management system specification shall conform to ISO 45001:2018.

Technical support

- The manufacturer must be able to give technical support and product training by qualified personnel.
- The manufacturer must have in-house test facilities to execute basic tests.

Material specifications

Body & clamp rings:	Steel ST 37-2 (S 235 JR G2) acc. DIN/EN 17100.
Coating:	Coating shall be a Resicoat® RT 9000 R4 epoxy powder coating or equal, with a minimum layer thickness of 250 micron and chemical resistance of pH 2 up to pH 13. Coating shall be approved by an internationally accepted institute for potable water or other fluids (e.g. WRc, KIWA, DVGW) and shall fulfill the requirements of GSK (European quality association for heavy duty corrosion protection).
Bolts, Nuts:	Stainless steel A2 (AISI 304).
Rubber gasket:	NBR (Perbunan) for usage in water and gas. EPDM for usage in potable water.Rubber should be approved by an internationally accepted institute for portable water (e.g. DVGW, WRc).
Flanges	Flanges shall be constructed in such a way that they may be attached to flanges whose dimensions and tolerances comply with EN1092-2.
Pressures:	Max. working pressure: 10, 16 bar or 25 bar for water. Max. working pressure: 4 bar for gas.
Minimum built-in length:	300 mm for all sizes.

Multi/Clamp: tender specifications for water & gas

Tender specification for stainless steel repair clamps, tapping tees and tapping saddles for use in water and gas.

Scope

This tender specification specifies the requirements for repair clamps, tapping tees and tapping saddles for outside pipe diameters 15mm - 1000mm for pipes conveying fluids like potable water, waste water and gas, suitable for fluid temperatures between -10˚C and 70˚C, suitable to be installed under and above ground, and inside and outside buildings.

Quality assurance

- The manufacturer's quality system shall conform to ISO 9001.
- The manufacturer's environmental system shall conform to ISO 14001.

Certification

ACS (France), WRAS (United Kingdom).

Material specifications

Material:	All metal parts are stainless steel AISI 304 or stainless steel AISI 316L. All metal parts are deburred and passivated after the welding process to restore the corrosion resistance to its original state.
Bolts and nuts:	Bolts and nuts (with integrated washer) shall be made of stainless steel AISI 304 or AISI 316. Bolts shall have no anti-friction coating. Nuts are galvanized and passivated to prevent cold-welding due to fretting. Nut and washer are integrated into one piece. Plastic caps on thread to prevent nuts falling off during transport.
Rubber gasket:	Potable water: EPDM according to EN 681-1 (-10˚C up to +55°C). Water and gas: NBR according to EN 682 (-10˚C up to +70°C). The rubber is tapered with a waffle profile and is fully circled. Seamless rubber lining for every clamp diameter. Rubber is fixed to the stainless steel clamp with special tape. This tape is flexible and reinforced with glass fiber to withstand hot and humid conditions and guarantee a long storage capability.
Armour:	Vulcanized into the rubber gasket.
Lifter bar:	U shaped. Bolt holes in the lifter bar are adjusted to the bolt size, no oversize bolts.
Thread:	According BSP (ISO 228).
Flanges:	Flanges shall be constructed in such a way that they can be attached to flanges from which the dimensions and tolerances comply to EN 1092-2.
Pressures:	Max. working pressure: up to 16 bar water. Max. working pressure: up to 8 bar gas.

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

GEORG FISCHER WAGA N.V. CONDITIONS OF SALE

Article I – General
1. In case of any difference of opinion regarding the contents, purpose and intention of any provision in these general conditions of sale, the most obvious interpretation, based on the Dutch version thereof, shall prevail. Any reference by principal to his own general conditions in any phase of making the agreement with us, is explicitly rejected. Insofar as our conditions are conflicting with principal's conditions of purchase or tender or other conditions, our conditions shall prevail, except in case that and insofar as principal's conditions have explicitly been accepted by us in writing.
2. In these general conditions the following terms that be understood to mean the following:
"Principal": any natural person or legal entity who purchases products from us or to whom we submit offers.
"We" or "us": contractor who has received an order from principal or has entered into an agreement with the letter or he who refers to these general conditions in his offer.
"Products": all objects which are the subject of an agreement, including all results of services rendered by us, such as contracting work, mounting, installation, advice, etc.

Article II – Offers: creation of agreements
1. All our offers or quotations are free of engagement, unless explicitly stated otherwise in writing. Each offer or quotation from us is based on the assumption that we can carry out the order in normal conditions and during regular working hours. An agreement shall only be created if and insofar as we accept an order from principal in writing or if we commence carrying out an order. The date on which the agreement is created shall be the date of dispatch of our written confirmation of the order respectively the first day on which we actually commence carrying out the order.
2. If at principal's request we make any performance priori to the agreement being created, we shall have the right to demand payment for such performance in conformity with the rates then applied by us, unless explicitly otherwise agreed upon in writing.
3. In case of acceptance by us in writing, we shall have no further obligations than those accepted by us in writing. Principal shall be deemed to be bound by his order, for as long as the order has not been refused by us.
4. Stipulations in the order which are additional to or deviating from our offer or quotation shall at all times only be binding for us if and insofar as such stipulations have been explicitly accepted by us in writing.
5. All specifications or figures, measurements, weights and/or other descriptions of the products have been drawn up with due care, but we cannot guarantee that no deviations will occur. Samples, drawings or models, etc. shown or provided shall at all times only be indications of the relevant products.

Article III – Prices
1. Unless explicitly otherwise agreed upon in writing, our prices shall be ex works, which means excluding transport and/or forwarding, packaging, insurance, etc. and excluding duties and taxes and other levies, if any, imposed by the public authorities as well as any costs related to objects made available by principal in the scope of the execution of the order. If delivery free domicile has been agreed upon, expenses involved in special or express transport shall nevertheless be charged to principal separately.
In addition, we shall have the right to charge a small-order surcharge to principal in case of small deliveries.
2. In case that the prices of materials, equipment, components, raw materials, wages, salaries, social security contributions and levies imposed by the public authorities are increased after the date when the agreement was created in conformity with article II clause 1 and before the order has been fully executed, we shall have the right to increase our prices accordingly.
3. We shall have the right to invoice additional work carried out by us separately, also when the additional work has not been ordered in writing and/or the price thereof has not been agreed upon in advance. For calculating the price for additional work, the provisions in the preceding clauses of this article shall be analogously applicable. Applicability of 7a: 1646 Dutch Civil Code is explicitly excluded.
4. If mounting or installation of products delivered is explicitly included in our confirmation of the order and is therefore part of the agreement entered into with principal, the price referred to in this article shall have been calculated so as to include mounting or installation of the products and completing the products ready for operation at the location specified in the agreement. The costs and financial consequences of obligations of principal referred to separately in article VI shall not be included in this price, except if and insofar as they have been explicitly included in our confirmation of the order.

Article IV – Packaging
Unless explicitly agreed upon otherwise in writing, the products shall be provided with a type of packaging – if necessary and at our exclusive discretion – in which they are customarily sold, duly observing the provision in article III clause 1. Unless otherwise agreed upon in writing with principal, we shall not take back the packaging materials.

Article V – Documents, appliances and advice
1. Cost estimates, plans, drawings, statements of measurements and weights or other documents as well as appliances such as models, moulds, stamps, dies and tools pertaining to offers or deliveries drawn up, manufactured or made available shall remain our property at all times – also if the cost of manufacturing has been charged to principal – and shall be returned to us at our first request.
2. Except when we have given our consent in writing, principal undertakes that the documents, appliances and information provided by us as referred to in the preceding clause shall not be copied or imitated or made available for inspection to or put at the disposal of third parties, whether fore reusing them or not. We shall have the right to demand from principal that he gives his cooperation to signing a declaration of secrecy submitted to him by us.
3. Duly observing the provision in article II, clause 5, we shall only be bound by any advice, calculation, information and specification provided by us regarding capacities, results and/or performance to be expected of products to be supplied by us or operations to be carried out by us, if and insofar as such particulars have been included in our written confirmation of the order or from part of the written agreement entered into separately by us and principal.

Article VI – Mounting; installation
1. Principal shall ensure that necessary facilities, provisions and conditions for the mounting or installation operations to be carried out by us have been or are complied with timely and properly. Such facilities and other activities to be conducted in this scope shall be for the account and at the risk of principal at all times.
2. Principal shall ensure for his account and at his risk that our engineers are enabled to carry out their operations. He provides the appliances required, duly observing necessary safety regulations and other precautions and gives the assistance required, either personally or by helpers made available by him. Principal shall ensure that suitable accommodation and other personal facilities are available to our engineers.
3. Travelling expenses shall be charged to principal separately. In deviation from the provision in article III, clause 4, we reserve the right to charge additional labour costs in case that in our opinion, in deviation from the assumption referred to in article II, clause 1, we are necessitated to carry out the operations outside regular working hours and/or in special conditions.
4. The provision in article VII regarding the period of delivery is analogously applicable to the mounting or installation period agreed upon. A period during which machineries, installations, etc. are running in is not included in the mounting or installation period agreed upon with us.
5. Duly observing the provisions in this article, that which has been provided in the relevant articles of these conditions shall be applicable to price, delivery, risk and warranty in respect of mounting or installation.

Article VII – Period of delivery
1. The period of delivery, which is also understood to be the period for the operations to be carried out by us, shall commence on the day stated in our written confirmation of the order. If certain details, drawings, etc. are needed or certain formalities are required to be fulfilled for the execution of the order, the period of delivery shall commence on a later date, being the date on which all details, drawings, etc. are in our possession or the date on which the formalities required have been fulfilled. In case that an advance payment is demanded by us when the order is placed, the period of delivery shall commence on a later date that the date of the written acceptance of the order or the date of receipt of said documents, this later date being the date on which we receive said payment.
2. Periods of delivery stated by us shall not constitute a deadline and are always free of engagement. Solely expiration thereof does not result in our being in default. We shall make every effort to observe the periods of delivery stated as exactly as possible. Except for willfulness or gross negligence, our exceeding the period of delivery does not give principal the right to demand compensation, to refuse to take receipt of the product or to full or partial rescission of the agreement.

Article VIII – Force majeure
1. Force majeure on our part shall be understood to mean: any circumstance independent from our will due to which fulfillment of our obligations to principal is fully or partly prevented or due to which fulfillment of our obligations cannot be demanded from us in reason, irrespective of whether this circumstance was foreseeable at the time when the agreement was entered into. We shall notify principal of a situation constituting force majeure as soon as possible.
2. In any case all situations constituting force majeure, such as war, threat of war, civil war, riot, taking of hostages, war risk, fire, damage caused by water and flooding, strike, occupation of the company, lock-out, lack of labour or raw materials, defects in machines or installations, disruptions in energy supply, all and any both in our company and in that of third parties from whom we have to buy all or part of the materials or raw materials, as well as during storage or transport, whether executed by ourselves or not, and furthermore due to all other causes that have arisen for which we cannot be blamed or which have arisen through no action of ours, shall relieve us from any obligation to fulfill our obligations, including the period of delivery, for as long as the situation preventing us from doing so continues to exist. Claims for compensation due to partial or total non-fulfillment shall also be excluded in the above mentioned cases.
3. When the situation constituting force majeure has continued for two months, we shall have the right to rescind the agreement in part of in full. In such case principal shall not be entitled to any compensation.

Article IX – Delivery
When the relevant products have left our factory or when we have notified principal in writing that the products are ready to be dispatched, they shall be deemed to have been delivered, without prejudice to the provision in article XI and irrespective of our obligation, if any, to fulfill mounting and/or installation obligations. Consequently, the place of delivery is our factory, even if delivery free domicile and/or free transport has been agreed upon by us. In case that the order is delivered in parts, the separate batches as such shall be deemed to have been delivered.

Article X – Risk
1. The risk shall be transferred to principal at the time of delivery in the sense of article IX. In case of damage to products caused by destruction of the packaging, too, the provision in the preceding sentence shall be in full force and effect.
2. If the products are not, not timely or not properly taken by principal, principal shall be in default without any notice of default being required. We shall then have the right to store the products for the account and at the risk of principal or to sell them to a third party. The selling price, increased by the interest and alls expenses, shall remain payable by principal; however, as the case arises, the net proceeds of the sale to a third party shall be deducted.
3. Unless otherwise agreed upon with principal in writing, dispatch and/or transport of the products, if such operations are arranged by us, shall be for the account and at the risk of principal and the products shall not be insured against transport risks by us. Even if we have given a declaration to the carrier that any damage during transport shall be for our account, transport risks shall nevertheless be for the account of principal and we are not obliged to take steps to recover any damage. If desired, we may transfer our rights in respect of the carrier to principal.
4. Except in case that such has been explicitly otherwise agreed upon in writing, products which have been provided to us for treatment, repair or inspection shall be held by us at the risk of principal. We undertake to hold and treat the products provided to us by principal with due care.

Article XI – Reservation of ownership
1. The ownership of the products shall only be transferred to principal when he has fulfilled all obligations ensuing from the relevant agreement or from any agreement related thereto. Obligations shall be understood to include, in addition to payment of the purchase price, the operations conducted or to be conducted in respect of the products as well as payment of all surcharges, interest rates, taxes and costs, etc. in respect thereof pursuant to the agreement.
2. It shall not be permitted to principal to alienate, raise a loan on or pledge the products or contribute the products to a mortgage or to transfer the products to third parties in any other manner. It shall be permitted to principal to treat, process or use the products in the scope of his normal business operations.
3. Principal shall immediately enable us to take back the products, without any notice of default or legal intervention being required. Without prejudice to the other rights to which we are entitled, we are irrevocably authorized by principal now, in case the occasion arises, to dismount and take into our possession the products supplied by us and fixed to movable or immovable objects, in the event that principal does not, not timely or not properly fulfill his (financial) obligations contracted to us, without any notice of default of legal intervention being required.
4. Principal shall be obliged to notify us in writing without delay of the fact that third parties (possibly) exercise rights on the products on which our reservation of ownership is resting. In the event that principal appears not to have complied with this obligation, he shall forfeit a penalty of 15% of the unpaid part of the amounts payable by him to which the reservation of ownership is applicable, without prejudice to the other rights in respect of said amounts payable by him to which we are entitled.
5. Each payment we receive from principal shall in the first instance serve as payment of amounts receivable by us from principal regarding which a reservation of ownership in the sense of clause 1 of this article is not applicable (any longer).

Article XII – Credit surcharge
The invoice amount may be increased by us by a credit surcharge which is stated separately on the invoice. When the invoice amount is paid within thirty days from the invoice date, said surcharge does not have to be included in the payment.

Article XIII – Payment
1. Unless otherwise agreed upon in writing, payment of the purchase price and/or the price agreed upon for operations to be carried out or carried out by us shall be made, at our discretion, either cash on delivery or within thirty days from the date of delivery in accordance with the provision in article IX. All payments shall be made without any deduction of discount or of amounts receivable from us. In case that principal holds the view that he may have any claims, in whatever form, in respect of the delivery or the execution of the order, this shall not relieve him from the obligation to pay in the manner agreed upon and he shall not have the right to defer his obligation to pay.
2. Payment of additional work shall be effected as soon as we have invoiced such work to principal.
3. We shall have the right, if at any time we entertain reasonable doubts about principal's creditworthiness, to demand, before proceeding with (any further) performance, full or partial prepayment of the purchase price or that principal gives adequate security, for example by means of a bank guarantee or secret pledging of products supplied by us. In such case we shall also have the right to dispatch products exclusively subject to the condition cash on delivery.
4. In case that we have agreed with principal that payment shall be effected through a bank or when security is given by means of documentary credit or bank guarantees, principal undertakes that such transaction shall take place through a first-class bank at all times. If we hold reasonable doubts about said qualification, we shall have the right to reject the bank proposed and to designate another bank.
5. Solely due to any term of payment having expired, principal shall be in default by the operation of the law. In that case all amounts payable by principal to us shall fall fully and immediately due, without prejudice to the other rights to which we are entitled.
6. On all amounts which have not been paid on the last day of the term of payment at the latest, interest shall be payable by principal, without any notice of default being required, as from that day, equal to the legal interest rate then applicable in The Netherlands increased by a 2% surcharge. Every time, after expiration of a year the amount on which interest is charged is increased by the interest payable for that year. If principal has not paid the amount and interest payable after expiration of another term of payment stated in writing, principal shall be obliged to compensate us for all expenses incurred in and out of court, which are determined at 15% minimum of the outstanding amount payable and will amount to € 250,- minimum, excluding VAT, at all times.
7. We shall have the right to keep in our possession objects of principal which have been put at our disposal in connection with the order granted to us and to defer returning such objects until principal has fulfilled all his financial obligations to us.

Article XIV – Rescission
1. In case that principal does not, not timely, or not properly fulfill any of his obligations ensuing from the agreement entered into with us, he shall be in default and we shall have the right, without any notice of default or legal intervention being required:
- to suspend performance of the agreement and the agreements directly related thereto until adequate security has been given for payment; and/or
- to rescind full or partly the agreement and the agreements directly related thereto;
all and any without prejudice to the other rights to which we are entitled and without our being obliged to give any compensation.
2. In case of bankruptcy or a moratorium of principal's business or his business being shut down or liquidated, all agreements with principal shall be rescinded by the operation of the law, unless we notify principal within a reasonable period that we wish (part of) the relevant agreement(s) to be performed, in which case we shall have the right, without any notice of default being required:
- to suspend performance of the relevant agreements until adequate security has been given for payment; and/or
- to suspend all our financial obligations, if any, on whatever account to principal;
all and any without prejudice to the other rights to which we are entitled and without our being obliged to give any compensation.
3. If an event occurs as referred to in clause 1 or clause 2 of this article, all amounts payable by principal to us shall fall immediately and fully due and we shall have the right to take back the products involved. In that case we shall have the right to enter the sites and buildings of principal for the purpose of taking the products into our possession. Principal shall be obliged to take measures required for providing the opportunity to us to exercise our rights.

Article XV – Cancellation
1. If principal wishes to cancel the order placed with us and we have agreed thereto in writing, principal shall be obliged – except for a written agreement reading otherwise – to take over from us the materials and raw materials bought by us, whether on the basis of a forward contract or not, whether treated or processed or not, at the price paid by us, including labour costs, and to compensate us for such losses as loss of profit by paying 15% of the price agreed upon; all and any without prejudice to any other rights to which we are entitled. In case that we have entered into a currency ensuing from the cancellation.
2. Principal shall be obliged at all times to indemnify us against claims of third parties ensuing from the cancellation of the order.

Article XVI – Inspection and complaints
1. Principal shall be obliged to inspect the products or cause the products to be inspected carefully immediately after their arrival at the place of destination or after completion of the operations carried out by us or – if this happens earlier – after receipt by himself or by a third party acting on his instructions. Any complaints about defects to the products owing to defects in materials or manufacture, as well as deviations as regards quantity, weight, composition or quality between the products delivered and the description previously provided in the confirmation of the order and/or the invoices, shall be notified to us in writing within fourteen days from the date of arrival of the products or completion of the operations, without prejudice to the provision in clause 3 of this article. However, if a test or inspection has been conducted at our factory, complaints shall be submitted during such test or inspection and confirmed in writing.
2. Any defects which in reason cannot be established within the period stipulated hereinbefore shall be notified to us in writing immediately when they have been established but within the applicable warranty period at the latest. Complaints about invoices shall exclusively be submitted in writing within fourteen days from the date of receipt of the invoices, the date of receipt being determined as being the day following the date of the relevant invoice.
3. Slight deviations with the customary tolerances shall not constitute any grounds fro principal to complain, apply for compensation or request cancellation of the order.
4. If complaints are not submitted within the periods stipulated in this article, any claim of principal pertaining to such defects shall be null and void.
5. When principal discovers any defect, he shall be obliged to discontinue the application, treatment, processing or installation of the relevant products immediately and he shall give his full cooperation required by us for investigating the complaint, which includes giving us the opportunity to conduct an on-site investigation into the conditions of treatment, processing, installation and/or application or cause such investigation to be conducted.
6. Principal shall not have the right to complain about products in respect of which we cannot verify the complaint. Principal shall not be free to return the products before we have agreed thereto in writing.

Article XVII – Warranty
1. We grant warranty on defects in materials and manufacture for twelve months from delivery by principal to end user, however, for eighteen months maximum from delivery in the sense of article IX. Our warranty comprises our repairing the defects at our expense or – at our exclusive discretion – taking back the relevant products fully or partly and replacing them by new products. If we replace (components of) products supplied so as to fulfill our warranty obligations, the replaced (components of) products shall become our property.
All expenses exceeding the obligation referred to hereinbefore in this article shall be for the account of principal, such expenses including carriage, travelling expenses and costs of dismounting and mounting. In case that we carry out repairs to products supplied to fulfill our warranty obligations, the relevant products shall fully remain at the risk of principal.
2. Our warranty shall not be effective:
A. if the defects have resulted from injudicious application or from causes other than defective materials or manufacture;
B. if we deliver used materials or used products in accordance with the order;
C. if the cause of the defects cannot be clearly demonstrated;
D. if not all instructions provided for using the products and other specifically applicable warranty instructions have been complied with strictly and fully.
3. If products are provided for treatment, repair, etc. warranty shall only be granted for the good quality of the execution of the treatments ordered. On components which we do not manufacture ourselves, warranty shall be restricted to the warranty granted to us by our suppliers.
If we have undertaken to mount or install the products, our warranty obligation in respect thereof shall only be applicable in case of defective mounting or installation. In such case the warranty granted by us shall commence on the day when mounting or installation has been completed by us in our opinion, on the understanding that in that case the warranty period shall expire in any case nine months from delivery in the sense of article IX.
4. Our warranty shall be null and void if:
A. the relevant defects are the result or regulations issued by public authorities related to the quality or the nature of the materials used or to manufacture;
B. principal makes modifications and/or repairs to the products supplied, or causes modifications and/or repairs to be made, at his own initiative during the warranty period;
C. principal does not, not timely or not properly fulfill any obligation ensuing from this agreement or any other agreement related thereto, such as the obligations regarding inspection and complaints stipulated in these conditions.
5. Unless explicitly otherwise agreed upon, we shall be exclusively obliged to comply with the warranty obligations stipulated in this article within The Netherlands.

Article XVIII – Liability
1. Our liability shall be limited to complying with the warranty obligation described in article XVII.
2. Except in case of our own willfulness or gross negligence and except for our warranty obligations, we shall at no time be liable for any damage suffered by principal, including consequential damage, emotional injury, loss or profits or damage to the environment or damage resulting from liability to third parties.
3. In the event that and insofar as we are still held liable in any case by the competent court, despite the provision in clauses 1 and 2 of this article, our liability to principal on whatever account shall be limited for each event (in which a related series of events shall be considered to be one event) in all cases to the size of the relevant contract price excluding VAT.
4. Principal shall be obliged to indemnify us and compensate us for all expenses, losses and interests which might have arisen for us as a direct consequence of claims of third parties on us in respect of events, acts or omissions during or in the scope of the execution of the order for which, pursuant to these conditions, we are not liable to principal.
5. We shall not be liable for violation of any patents, licenses or other rights of third parties by using information which has been made available to us by or on behalf of principal for the execution of the order. If in the written agreement entered into with principal or in our confirmation of the order we refer to technical, safety, quality and/or other regulations pertaining to the products, principal shall be deemed to be acquainted with such regulations, unless he notifies us of the contrary without delay. We shall then give him further information on said regulations. Principal undertakes to inform his customers in writing of said regulations at all times.

Article XIX – Applicable law; competent court
1. Dutch law shall be applicable to all agreements entered into with us, of which these conditions are a part, either in full or in part. Parties shall be deemed to elect domicile at the place where we are established.
2. Any disputes arising from agreements entered into with us or these general conditions shall be subjected, insofar as not laid down otherwise by the law, to the decision of the competent court whose jurisdiction includes the place where we are established, unless explicitly otherwise agreed upon by parties.
3. The applicability of the Viennese Contract of Sale is excluded, unless parties have explicitly otherwise agreed upon.

Article XX – Filing
These General Terms and Conditions are filed at the Chamber of Commerce at Oost Nederland at Enschede dated 1 January 1994 under no. 080 58749.

Article XXI – Registration
Georg Fischer Waga N.V. «GF+ has been registered under the Business Names Act with the Chamber of Commerce at Oost Nederland at Enschede under no. 080 58749.

Notes

Georg Fischer Waga N.V.

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