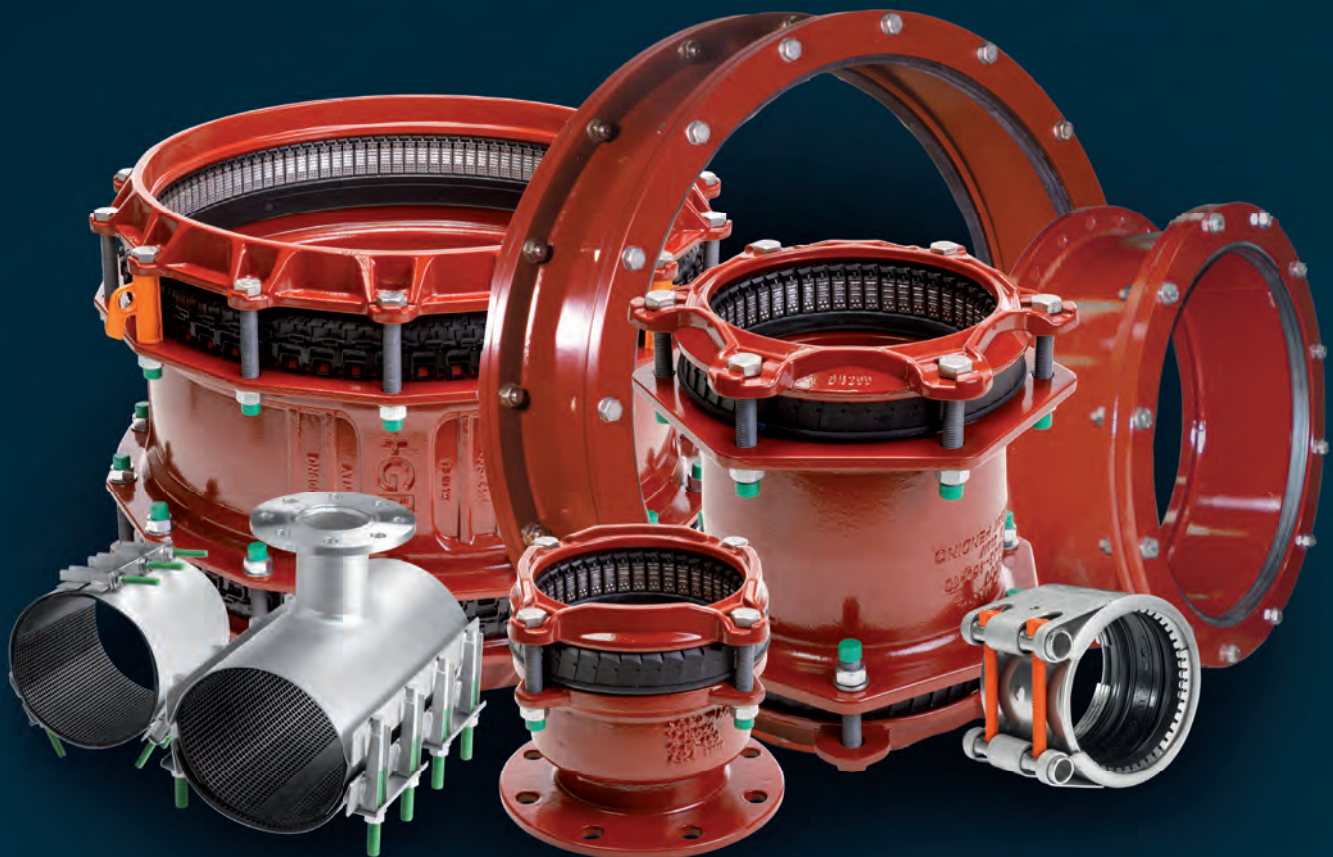


Product Catalogue





Georg Fischer Waga N.V.

For more product
information & documentation
visit our website

www.waga.nl

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 & repair.

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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.

Water & gas



Maintenance & repair

Maintenance and repair in under and above ground piping systems for water and gas requires 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 or 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 or 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 DN400 can perfectly be installed.

House connections and service lines

The last stage of the distribution grid is through pipelines that supply water or 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.

Meet the VIPs



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 fittings



MULTI/JOINT® 3000 Plus



MULTI/JOINT® 3000 Plus

+ Dedicated fittings



ST-System



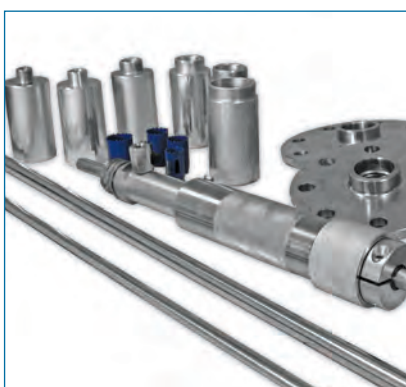
UNI-Coupling

+ Repair clamps & tapping saddles



Multi/Clamp

+ Drilling devices



W400 / W410

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 successfully implemented in the water and gas market in various applications around the world.

+ Reference cases in wide range fittings



MULTI/JOINT® 3000 Plus



MULTI/JOINT® 3000 Plus

+ Reference cases in dedicated fittings



ST-System



UNI-Coupling

+ Reference cases in repair clamps & tapping saddles



Multi/Clamp

+ Reference cases in drilling devices



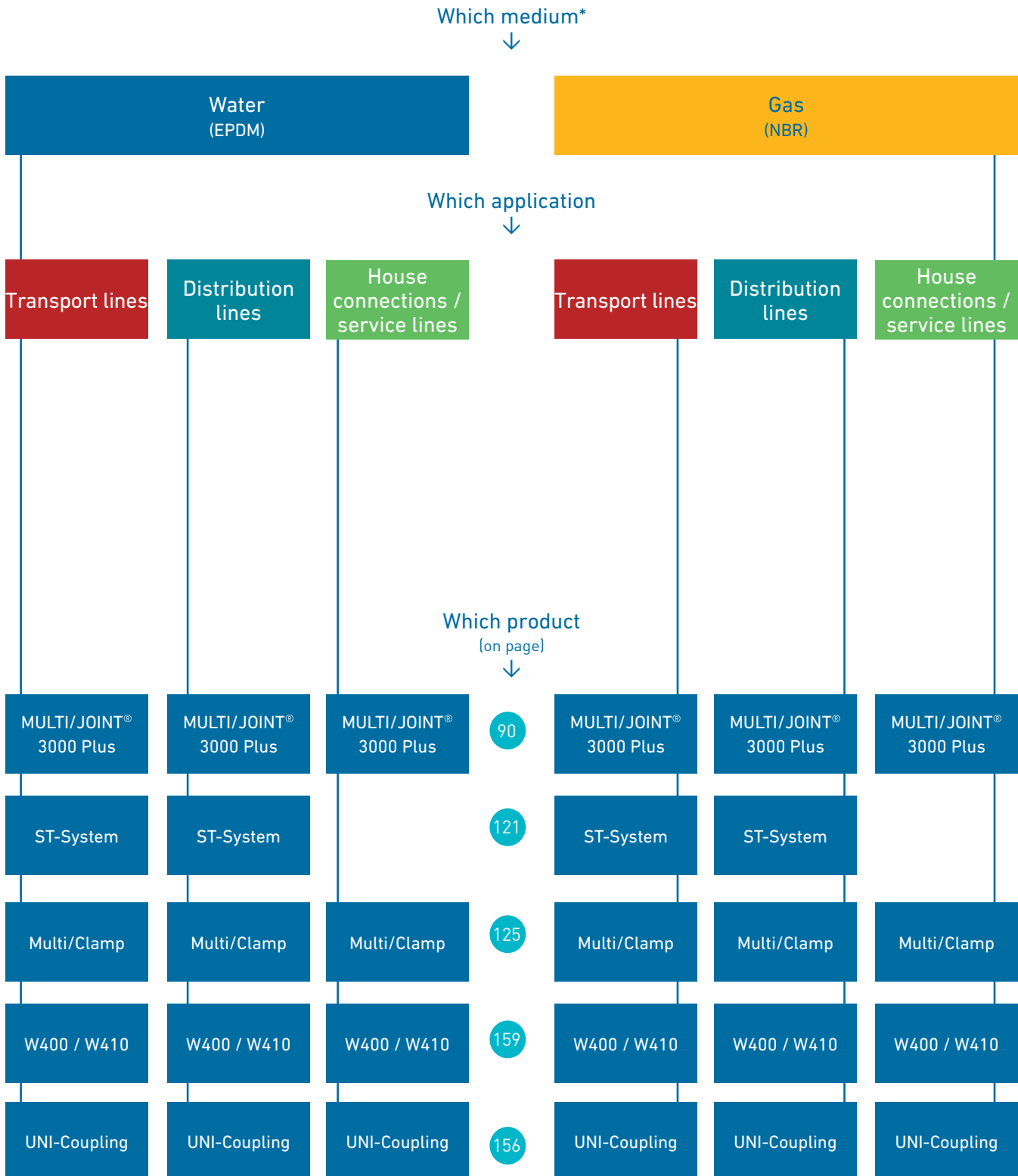
W400 / W410

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® The original!

Perfection in every detail MULTI/JOINT® 3000 Plus



RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ
VON ARMATUREN UND FORMSTÜCKEN



Certified to
NSF/ANSI 61

kiwa



WRAS
APPROVED
PRODUCT



Clamp ring:

ductile cast iron GGG45 EN-GJS-450-10
with Resicoat® epoxy powder coating
type RT 9000 R4

Uni/Fiks ring

Uni/Fikser:

stainless steel A4 (AISI 316)

Varioseal:

rubber gasket
(EPDM or NBR)

Hygiene protection:

Ensures the fitting stays
clean from production
to point of use

Body:

ductile cast iron
GGG45 EN-GJS-450-10
with Resicoat® epoxy
powder coating
type RT 9000 R4

(cap in the

picture:

DN50 -

DN400)

Nuts:

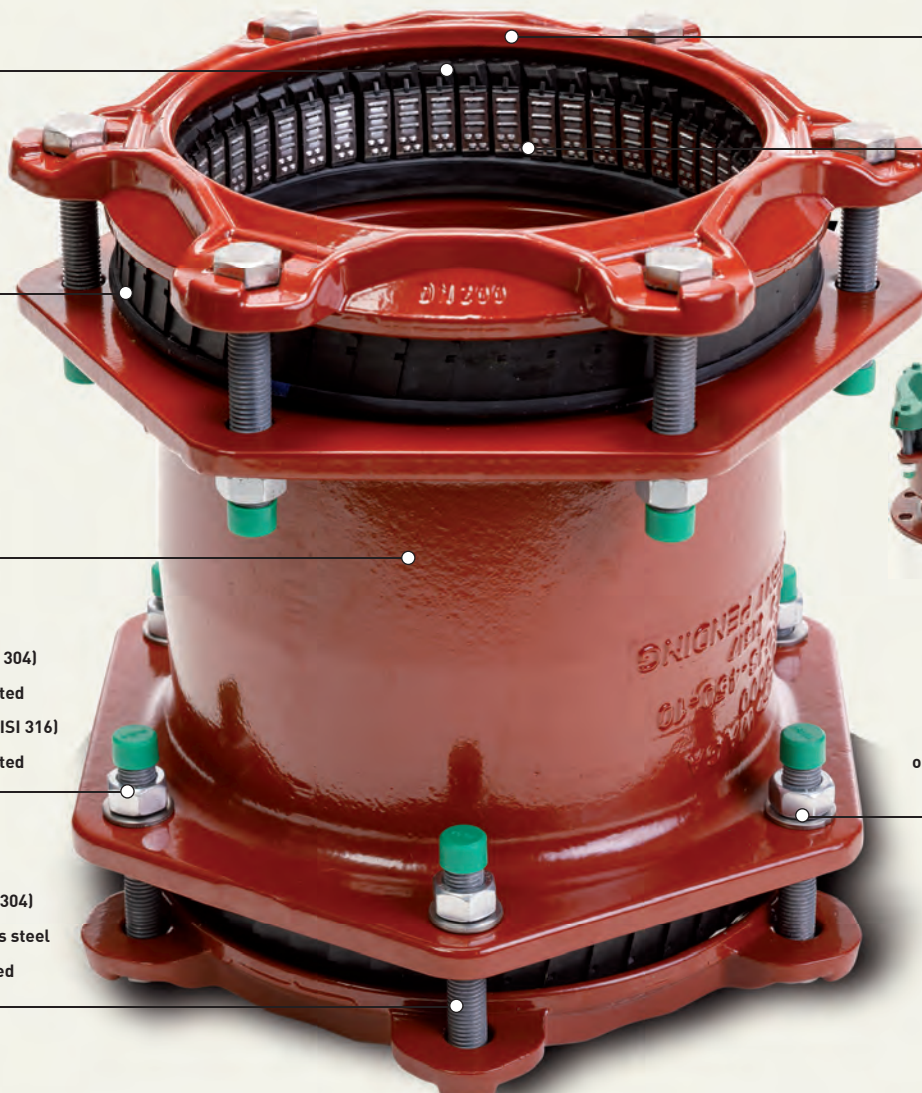
stainless steel A2 (AISI 304)
galvanised and passivated
or stainless steel A4 (AISI 316)
galvanised and passivated

Washer:

stainless steel A2 (AISI 304)
or stainless steel A4 (AISI 316)

Bolts:

stainless steel A2 (AISI 304)
Lubo coated or stainless steel
A4 (AISI 316) Lubo coated



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

Minimum distance between any point of the spigot end and the internal face of the joint gasket.

Ductile cast 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

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.

Conversion table

Convert →		to	multiply by
Area			
0.1550	sq. inch (in ²)	sq. centimetre (cm ²)	6.4516
10.764	sq. feet (ft ²)	sq. metre (m ²)	0.09290
Density			
0.062428	pound/foot (UK)	kilogram/metre ³ (kg/m ³)	16.0185
0.010022	pound/foot (UK)	kilogram/metre ³ (kg/m ³)	99.776
10-3	gram/centimetre ³ (g/cm ³)	kilogram/ metre ³	1000
0.160544	pound/gal (UK)	pound/foot ³ (lb/ft ³)	6.22884
Dynamic viscosity			
103	centipoises (cP)	Pascal second (Pa s)	10-3
2.419	pound/ft hr (lb/ft h)	centipoises (cP)	0.4134
1.000	gram/metre sec (g/m s)	centipoises (cP)	1.000
Length			
0.0393701	inch (in)	millimetre (mm)	25.40
0.28084	feet (ft)	metre (m)	0.3048
1.090361	yard (yd)	metre (m)	0.914400
1010	angstrom (A)	metre (m)	10-10
Mass			
0.035274	ounce (oz)	gram (g)	28.3495
2.20462	pound (lb)	kilogram (kg)	0.453592
0.96207	ton UK (long ton)	tonne (t)	1.01605
Pressure and stress			
9.869*10-3	atmosphere (atm)	kilopascal (kPa)	101.30
0.1450	pound-force/in ² (psi)	kilopascal (kPa)	6.89476
0.01020	kilogram force/cm ² (kgf/cm ²)	kilopascal (kPa)	98.0665
0.06804	atmosphere (atm)	pound-force/in ² (psi)	14.70
20.89	pound-force/ft ² (lbf/ft ²)	kilopascal (kPa)	0.04788
10.000	milibar (mbar)	kilopascal (kPa)	0.1000
33.86	milibar (mbar)	inches mercury (in Hg)	0.02953
68.95	milibar (mbar)	pound-force/in ² (psi)	0.01450
4.015	inches water (in H ₂ O)	kilopascal (kPa)	0.2491
Torque			
0.7376	lb/feet	Nm	1.35
multiply by		to	← convert

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	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	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	452	-	-	457	-	442	-
450	457	464/470	-	457	480	-	-
475	508	-	500	508	-	495	-
500	508	514/521	500	508	532	-	-
550	559	559	-	-	558	548	550
600	609.6	622	630	609	632	635	-

Pipe outside diameters

Coupling DN	AC cl. 10	AC cl. 10 rough. approx.	AC cl. 12	AC cl. 12 rough. approx.	AC cl. 18	AC cl. 10 rough. approx.
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	-	-	-	-	-	-

Pipe chart imperial

Georg Fischer pipe and fittings O.D. chart

MULTI/JOINT®

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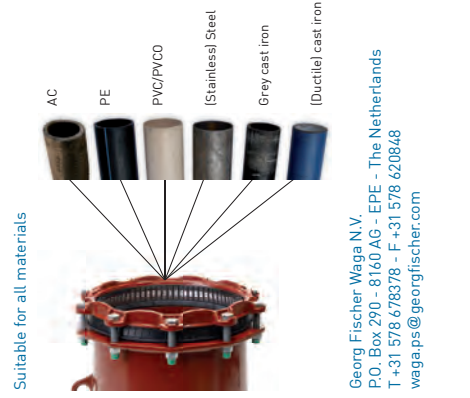
+GF+

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 C905 C909 PVC	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 1/2	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		6.43			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		8.43			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	

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" - 12" = wp 232 psi, 14" - 24" = wp 150 psi

Installation Torque

DN	MULTI/JOINT® size: 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



Pipe chart imperial - 01-2020

Material specifications

Ductile cast 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 1563:1997

Symbol	EN-GJS-450-10 HB 200
Tensile strength R_m	min. 450 N/mm ²
0,2% Proof Stress $R_{p0,2}$	min. 310 N/mm ²
Elongation at break	min. 10%
Modulus at elasticity	169 GN/mm ²
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/mm ²
Tensile strength yield	370 N/mm ²
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 precipitation in the heat-affected zone during welding and a lower susceptibility to intergranular corrosion.

Thermal properties

CTE, linear 20 °C	17.3 µm/m- °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/mm ²
Tensile strength yield	310 N/mm ²
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 20 °C	17.3 µm/m- °C from 0-100 °C
----------------------	--------------------------------

Mechanical properties

AISI 316

Hardness, Brinell	190
Tensile strength, ultimate	620 N/mm ²
Tensile strength yield	415 N/mm ²
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 so-called 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/mm ² 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

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 27 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.

GSK



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 anti friction coating is a dry lubricant. This coating has the property of reducing the torque tension scatter during tightening. This type of coating 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.

EN14525 KIWA, SVGW & ÖVGW



Passivated nuts

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

Anti seize Compounds

Anti seize compounds are used on the threads of fasteners. It prevents galling of mating surfaces on especially the stainless steel fasteners. Furthermore it can provide a barrier to water penetration since the threads are sealed

by use of the compound. On the steel fasteners it therefore also improves the corrosion resistance to allow the parts to be subsequently disassembled even under adverse environmental conditions. We advise to use a lubricant containing molybdenum disulphide or copper, such as Molykote Cu-7439 plus copper past or equivalent. This solid lubricant acts as a high pressure resistant film. It can be used by itself as a dry lubricant as well as in other solid lubricants and in oils and greases.

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 or 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

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

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	8	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	See PN 16									340		395	445	505	565	640	670	780	895	1015	1115	1230	1455
Diameter of bolt circle	K	See PN 16									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	See PN 16									23		23	23	23	28	28	28	31	31	34	34	37	41
Nominal size bolts		See PN 16									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	See PN 40			135	145	160	180	210	240	295		355	410	470	525	585	650	770	840	950	1050	1170	1390
Number of bolts	N	See PN 40			4	4	8	8	8	8	12		12	12	16	16	20	20	20	24	24	28	28	32
Diameter of bolt hole	L	See PN 40			19	19	19	19	19	23	23		28	28	28	31	31	34	37	37	41	41	44	50
Nominal size bolts		See PN 40			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	See PN 40									270	300	360		425	485	555	620	730	845	960	1085	1185	1320	1530
Diameter of bolt circle	K	See PN 40									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	See PN 40									28	28	28		31	31	34	37	37	41	44	50	50	57	57
Nominal size bolts		See PN 40									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	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	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	M20	M20	M24	M24	M24	M24	M24	M24	M27	M27	M30	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	265	300	370	405	430	490	550	580	610	675	735	760	850	1015				
Diameter of bolt circle	K		127			146	165	191	205	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	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)																								
) 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	4	4	8	8	8	8	8	12	12	12	12	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	33	36		
Nominal size bolts			M16			M16	M16	M16	M16	M20	M20	M20	M20	M24	M24	M24	M24	M24	M24	M27	M30	M30	M33			

		DN (mm)																								
ANSI B 16.1 125 LB/ AWWA C-11		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	M25	M25	M29	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																	

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® 3007 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:

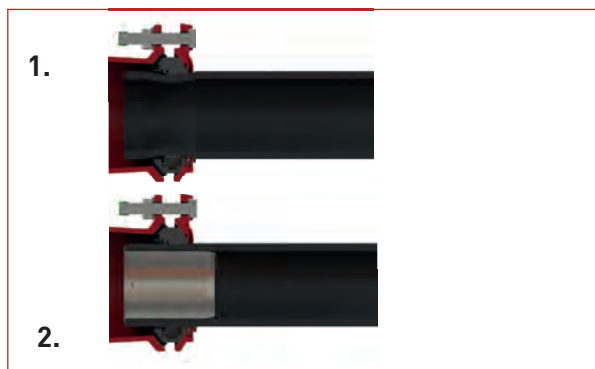
- PP-B, PB and HDPE (80/100/100-RC) pipes with SDR-class 11 or thicker walled

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

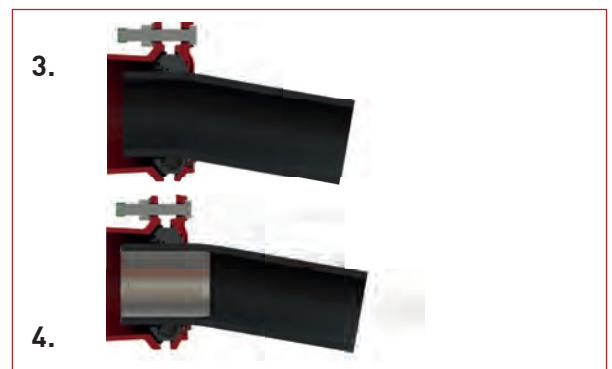
Design and properties

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 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 Economy



Insert with wedge



MULTI/JOINT® 3000 Plus principle

Proven quality

The MULTI/JOINT® 3000 Plus system comprises wide range fittings, flange adaptors, reduction pieces, bends, duck feet bends, end caps and PE adaptors of ductile cast iron in the ranges DN50 - DN600. 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 - 637 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 25 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 ring (Uni/Fleks ring or 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 – DN600 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 – DN600 a clip has been added to fixate the ring in the body of the fitting ensuring easy installation with no interference.

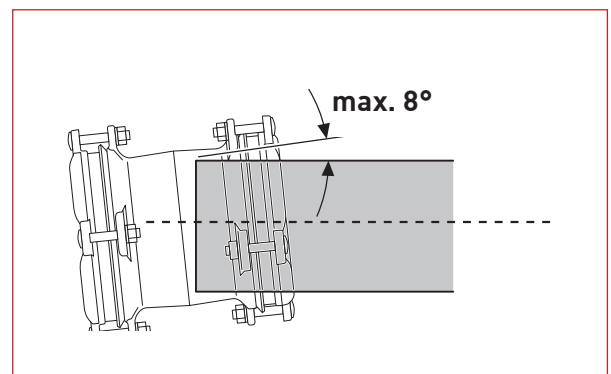
Uni/Fiksers

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 insertions 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.

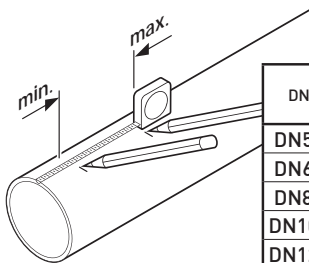
Joint gap

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

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, and it should be no less than the values given in the table below.

Minimum and maximum insertion depth



DN	Minimum (mm)	Maximal (mm)
DN50	84	95
DN65	84	100
DN80	84	115
DN100	90	110
DN125	93	120
DN150	93	120
DN200	100	140
DN225	110	145
DN250	110	170
DN300	110	224
DN350	130	224
DN400	145	224
DN425	170	275
DN450	170	275
DN475	170	275
DN500	170	275
DN550	170	275
DN600	170	275

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.

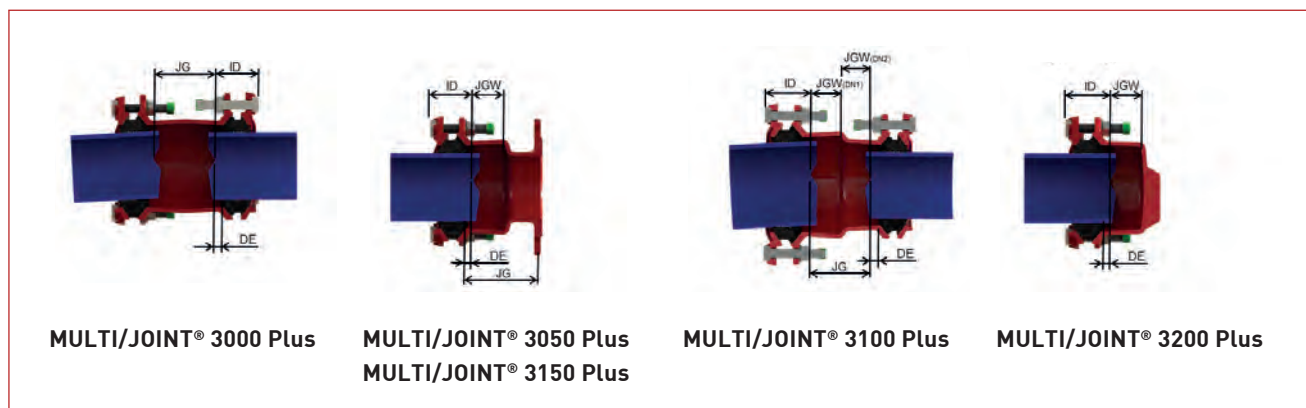
Guidelines on storage of rubber seals

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.

Depth of engagement



Definition and table of dimensions (DN50 - DN600)

	Size (DN)	DE	Small OD				Large OD										
			JGW	JG	ID		JGW	JG	ID								
					min	max			min	max							
Type 3000	50	20	n.a.	88	79	103	n.a.	110	84	108							
	65	20	n.a.	96	79	107	n.a.	110	83	111							
	80	20	n.a.	116	78	116	n.a.	134	84	122							
	100	25	n.a.	116	85	118	n.a.	138	90	123							
	125	25	n.a.	128	85	124	n.a.	148	93	132							
	150	25	n.a.	130	82	122	n.a.	164	93	133							
	200	30	n.a.	170	88	143	n.a.	202	99	154							
	225	30	n.a.	200	96	166	n.a.	236	110	180							
	250	30	n.a.	214	97	174	n.a.	254	112	189							
	300	30	n.a.	222	96	177	n.a.	264	110	191							
	350	30	n.a.	276	98	204	n.a.	366	112	226							
	400	30	n.a.	302	98	222	n.a.	344	112	248							
	425	30	n.a.	200	170	270	n.a.	200	170	270							
	450	30	n.a.	200	170	270	n.a.	200	170	270							
	475	30	n.a.	200	170	270	n.a.	200	170	270							
	500	30	n.a.	200	170	270	n.a.	200	170	270							
	550	30	n.a.	200	170	270	n.a.	200	170	270							
600	30	n.a.	200	170	270	n.a.	200	170	270								
Type 3050* (3080, 3180, 3060, 3400, 3550, 3750)	50	20	44	113	79	108	55	124	84	119							
	65	20	62	131	79	125	69	138	83	132							
	80	20	58	124	78	122	67	133	84	131							
	100	25	58	124	85	123	69	135	90	134							
	125	25	64	137	85	132	74	147	93	142							
	150	25	65	138	82	133	82	155	93	150							
	200	30	86	161	88	155	102	177	99	171							
	250	30	106	183	97	188	124	201	110	206							
	300	30	138	217	96	218	159	238	110	239							
	350	30	144	223	98	246	165	244	112	269							
	400	30	150	156	98	280	174	250	112	303							
	425	30	100	100	170	270	100	100	170	270							
	450	30	100	100	170	270	100	100	170	270							
	475	30	100	100	170	270	100	100	170	270							
	*) 500	30	100	100	170	270	100	100	170	270							
	550	30	100	100	170	270	100	100	170	270							
	*) 600	30	100	100	170	270	100	100	170	270							
Type 3150	50 x 40	20	44	113	79	177	55	124	79	188							
	65 x 80	20	52	121	79	184	69	138	79	201							
	100 x 80	25	58	127	85	192	69	138	85	203							
	125 x 100	25	64	138	85	206	74	148	85	216							
	125 x 150	25	64	138	85	206	74	148	85	216							
	150 x 100	25	65	137	82	204	85	160	93	142							
	200 x 150	30	86	158	88	205	98	173	99	171							
	225 x 200	25	132	207	96	211	150	225	110	225							
	225 x 250	30	70	145	96	151	88	163	110	165							
	300 x 250	30	138	217	96	218	159	238	110	206							
	450 x 400	30	100	100	170	270	100	100	170	270							
500 x 450	30	100	100	170	270	100	100	170	270								
Type 3200	50	20	44	n.a.	79	103	55	n.a.	84	108							
	65	20	62	n.a.	79	121	55	n.a.	83	125							
	80	20	58	n.a.	78	116	67	n.a.	84	122							
	100	25	58	n.a.	85	118	69	n.a.	90	123							
	125	25	64	n.a.	85	124	74	n.a.	93	132							
	150	25	65	n.a.	82	122	82	n.a.	93	133							
	200	30	85	n.a.	88	143	101	n.a.	99	154							
	225	30	100	n.a.	96	166	118	n.a.	110	180							
	250	30	107	n.a.	97	174	127	n.a.	112	189							
	300	30	112	n.a.	96	178	132	n.a.	110	192							
	350	30	120	n.a.	96	178	140	n.a.	110	192							
400	30	125	n.a.	96	178	145	n.a.	110	192								
Type 3100	80 x 65	20	20	58	68	126	78	116	83	126	67	75	142	78	130	78	138
	100 x 80	25	20	58	68	126	85	118	84	128	69	77	146	85	153	80	141
	125 x 100	25	25	60	62	122	85	120	90	122	70	73	143	85	147	85	138
	150 x 100	25	25	60	68	128	82	117	90	125	77	79	156	82	150	82	144
	150 x 125	25	25	63	70	133	82	120	93	127	80	80	160	82	152	82	148
	200 x 150	30	25	80	73	153	88	138	93	131	96	109	205	88	161	83	177
	225 x 200	30	30	98	106	204	96	164	99	172	116	139	255	96	202	96	208
	250 x 225	30	30	107	106	213	97	174	110	173	127	133	260	97	203	97	213
	300 x 250	30	30	111	112	223	96	177	112	178	132	137	269	96	208	96	219
	350 x 300	30	30	116	111	227	96	180	112	178	136	141	277	96	210	96	222
	400 x 350	30	30	121	116	237	96	183	114	180	141	145	286	96	213	96	224
	425 x 400	30	30	100	100	100	170	170	270	270	100	100	100	170	270	170	270
	450 x 400	30	30	100	100	100	170	170	270	270	100	100	100	170	270	170	270
	475 x 425	30	30	100	100	100	170	170	270	270	100	100	100	170	270	170	270
	500 x 450	30	30	100	100	100	170	170	270	270	100	100	100	170	270	170	270
	550 X 500	30	30	100	100	100	170	170	270	270	100	100	100	170	270	170	270

Note: For bend and duckfoot use the same JG & JGW as for the flange adaptors.

- JG: Joint Gap (acc. to TC 203/WG 1 N 217)
 - DE: Depth of engagement (acc. to TC 203/WG 1 N 217)
 - ID: Insertion depth (acc. to ISO 2531)
 - JGW: Joint Gap "Waga"
- For reference purposes.

Coupling



Reduced coupling



Flange adaptor



Reduced flange adaptor



(Reduced) Spigot end



Bend



Reduced duckfoot



PE adaptor



End cap (blind)



End cap (threaded)



User manuals



User manual MULTI/JOINT® 3000 Plus DN50 - DN400

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

MULTI/JOINT® 3000 Plus DN50-DN400



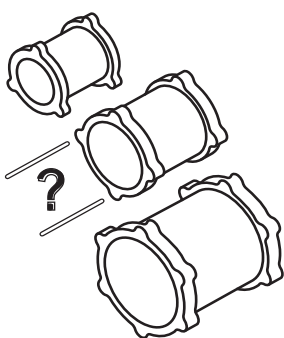
Georg Fischer Waga N.V. - P.O.Box 290-
8160 AG Epe-The Netherlands-www.waga.nl

WA4000/10-19/ML



01

FITTING CHOICE

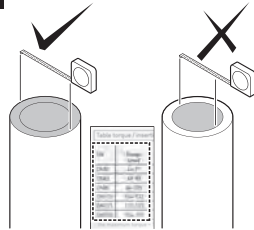


D	Kupplung auswählen	ES	Elegir union
NL	Keuze koppeling	IT	Scelta del giunto
F	Choisir le raccord	GR	Επιλογή συνδέσμου
NO	Valg av kobling	CZ	Výběr spojky
SE	Kopplings val	HU	Idom kiválasztása
DK	Valg af kobling	RO	Alegerea cuplei
FIN	Muhvi vaihtoehdot	PL	Wybór łącznika
PT	Escolha do tipo de ligação	RUS	Выбор фитинга

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01

CHECK TABLE IF CHOSEN FITTING MATCHES PIPE OD.

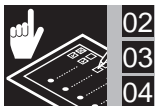


- D** Die Rohraussendurchmesser überprüfen und mit der Tabelle vergleichen.
- NL** Kies de juiste koppeling m.b.v. de tabel.
- F** Vérifiez sur le tableau si le raccord couvre bien le diamètre extérieur du tube.
- NO** Sjekk med tabell at koblingen stemmer overens med utvendig diameter rør.
- SE** Kontrollera om vald rördel stämmer mot rørets yterdiameter.
- 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 diámetros exteriores.

DN	Range (mm)	DN	Range (mm)
DN50	46-71	DN200	192-232
DN65	63-90	DN225	230-268
DN80	84-105	DN250	267-310
DN100	104-132	DN300	315-356
DN125	132-155	DN350	352-393
DN150	154-192	DN400	392-433

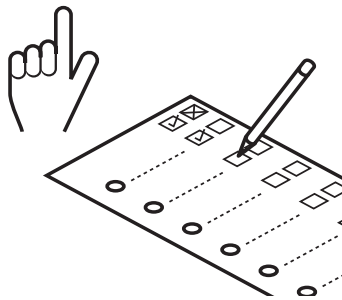
- IT** Controllare sulla tabella se il giunto è idoneo al d.e. del tubo.
- GR** Με βάση το πίνακα μεγεθών, επιβεβαιώστε ότι ο σύνδεσμος είναι κατάλληλος για τη συγκεκριμένη διάμετρο αγωγού στον οποίο πρόκειται να τοποθετηθεί.
- CZ** V tabulce zkontrolovat použitelnost tvarovky v daném rozsahu průměru.
- HU** Ellenőrizze, hogy a kiválasztott idom megfelel-e a cső külső átmérőjéhez.
- RO** Se verifica in tabel daca fittingul ales corespunde Dext al tevii.
- PL** Sprawdź w tabeli czy łącznik pasuje do zewnętrznej średnicy rury.
- RUS** Проверить по таблице совместимость фитинга с трубой.

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02
03
04

PREPARE FITTING FOR INSTALLATION

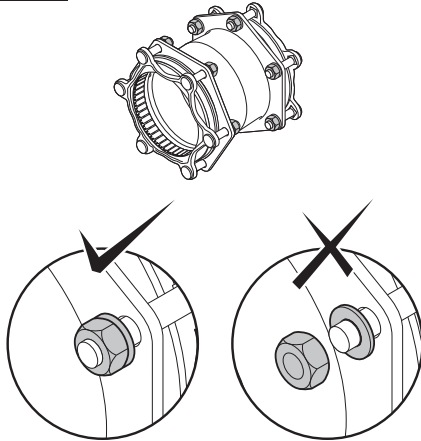


- D** Kupplung für die Montage vorbereiten
- NL** Montageklaar maken
- F** Préparez le raccord pour l'installation
- NO** Forbredelse av kobling
- SE** Förbered kopplingen för installation
- DK** Klargør koblingen til installationen
- FIN** Valmista muhvi asennusta varten
- PT** Preparação da ligação
- ES** Preparar manguito para instalacion
- IT** Preparazione per l'installazione
- GR** Προετοιμασία συνδέσμου για τοποθέτηση
- CZ** Příprava spojky pro instalaci
- HU** Idom előkészítése a felhelyezésre
- RO** Pregătirea cuplei pentru instalare
- PL** Przygotowanie łącznika do instalacji
- RUS** Подготовка фитинга к установке

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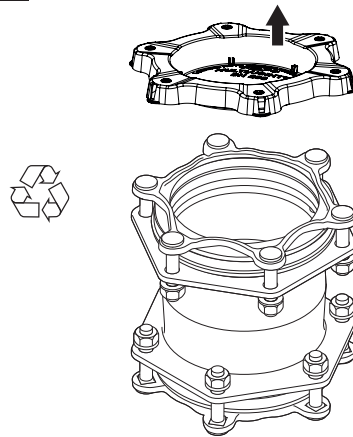
02

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

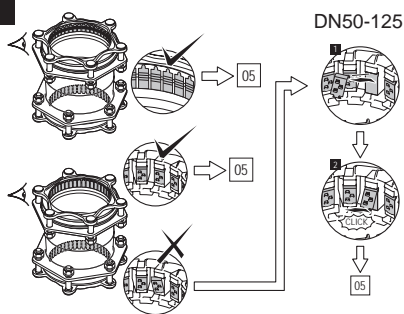
03



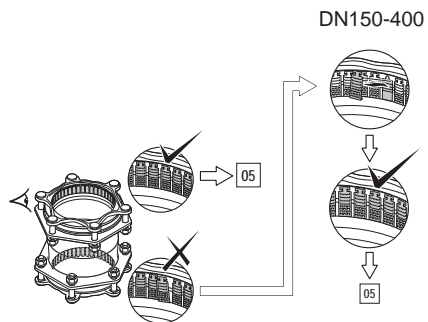
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04

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 plassering.
- SE** Kontrollera om "Fiksers" position är korrekt.
- DK** Kontroller om "Fikernes" placering er korrekt.
- FIN** Tarkista "Fiksen", että asento on oikein.
- PT** Ver se a posição dos "Fiksers" é correto.

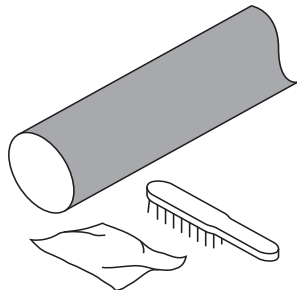


- ES** Revise si los "Fiksers" se encuentran en la posición correcta.
- IT** Controllare gli inserti antisfilo "Fiksers" sono OK.
- GR** Ελέγξτε αν τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος "Fiksers" έχουν αγκυρώσει σωστά πάνω στον αγωγό.
- CZ** Zkontrolovat správnou polohu fixerů.
- HU** Ellenőrizze, hogy a "Fikser"-ek megfelelő helyzetben vannak-e.
- RO** Se verifica dacă poziția elementelor de fixare "Fiksers" este corectă.
- PL** Sprawdzić poprawność ułożenia blaszek.
- RUS** Убедиться в правильности установки "Fiksers" (металлических фиксаторов).

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PIPE PREPARATION



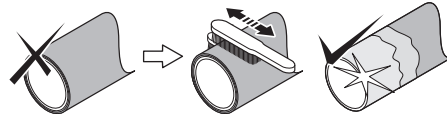
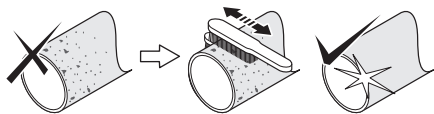
D	Zu verbindende Rohre vorbereiten
NL	Vorbereiden buis
F	Préparez les tubes
NO	Forbredelse av rør
SE	Rörberedning
DK	Klargøring af røret
FIN	Putken esivalmistus
PT	Preparação do tubo

ES	Preparacion de la tubería
IT	Preparazione tubazione
GR	Προετοιμασία Αγωγού
CZ	Příprava trubky
HU	Cső előkészítése
RO	Pregătirea conductei
PL	Przygotowanie rury
RUS	Подготовка труб

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05

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



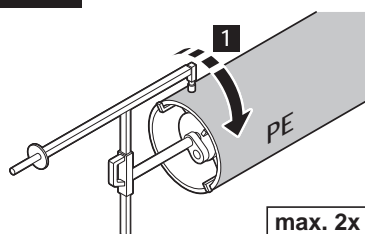
D	Von der drucktragenden Rohroberfläche allen Rost, Grat, Schmutz, Schäden und alle Beschichtungen entfernen.
NL	Verwijder alle roest, vuil, bramen, beschadigingen en buislagen. Monteer alleen op de mediumvoerende buis.
F	Éliminez la rouille, la saleté, les bourrelets de soudures, les défauts de surface 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 røret. 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	Távolítsd 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 tubería. Montar solamente entre tubos.
IT	Rimuovere sporczia, 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, ořezy a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Îndepartati 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.

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06

REMOVE ALL DIRT, BURSS, DAMAGES AND ALL FINISHING LAYERS FROM THE PIPE. USE AN (BY GEORG FISCHER) APPROVED SCRAPING TOOL. MOUNT ON MEDIUM CARRYING PIPE MATERIAL ONLY.



max. 2x

GAS / GAZ

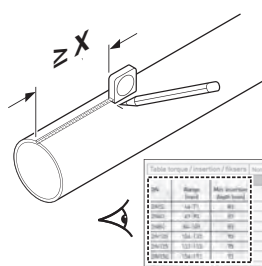
D	Für PE-Rohre ist ein Georg Fischer Schälgerät zu verwenden.
NL	Gebruik een door Georg Fischer goedgekeurde schiller.
F	Utilisez un grattoir mécanique approuvé par Georg Fischer.
NO	Bruk skrapeverktøy godkjent av Georg Fischer.
SE	Använd ett (av Georg Fischer) godkänt skrapverktyg.
DK	Brug et (af Georg 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	Použit 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.

WA4000/10-19/ML

07

CHECK TABLE FOR MINIMUM INSERTION DEPTH (X).



DN	X Min. insertion depth (mm)*	DN	X Min. insertion depth (mm)*
DN50	84	DN200	100
DN65	84	DN225	110
DN80	84	DN250	110
DN100	90	DN300	110
DN125	93	DN350	130
DN150	93	DN400	145



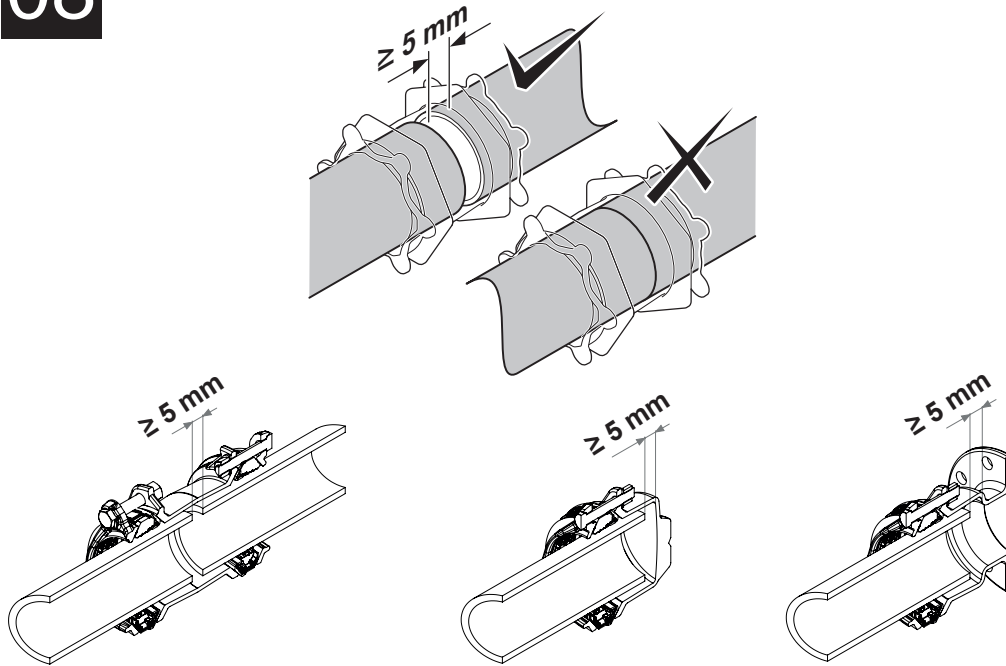
* For maximum joint gap information; see our technical manual or see our website www.waga.nl

D	Aus der Tabelle die Einstecktiefe (X) entnehmen.
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 indstikksdybde (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 mínima (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 betelési mélység érdekében (X).
RO	Se verifica in tabel adancimea corecta de inserare (X).
PL	Korzystając z tabeli określi głębokość nasunięcia łącznika (X).
RUS	Проверить по таблице значение глубины ввода трубы (X).

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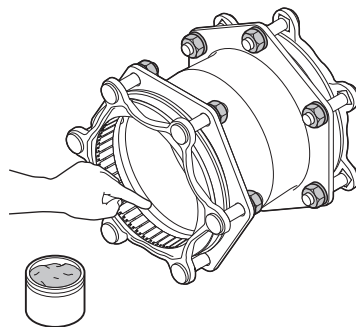
08



WA4000/10-19/ML

09

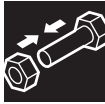
APPLY SUITABLE GREASE ONLY IN GAS APPLICATIONS



GAS / GAZ

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

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10 13
11 13
12 14

INSTALLATION



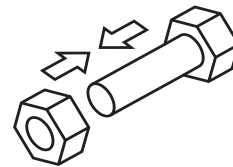
EN:
When manoeuvring the product out of the packaging to the pipe surface, please ensure that the proper lifting procedures are followed. Ensure that local safety and lifting procedures are adopted. All lifting should be done by qualified personnel, with approved equipment.

NL:
Zorg ervoor dat bij het manoeuvreren van het product vanuit de verpakking naar het buisoppervlak, de juiste hijsprocedures in acht worden genomen. U dient de lokale veiligheids- en hijsvoorschriften op te volgen. Het hijsen van producten dient te gebeuren met gekeurde hijsmiddelen en gekwalificeerd personeel.

D:
Bitte stellen Sie eine ordnungsgemäße manuelle Handhabung sicher, wenn das Produkt aus seiner Verpackung entnommen, transportiert und am Rohr angebracht wird. Ist der Einsatz mechanischer Hebezeuge erforderlich, so muss gewährleistet werden, dass sichere Arbeitsverfahren angewendet werden, geprüfte und anerkannte Hebezeuge verwendet werden und von qualifiziertem Personal durchgeführt werden.

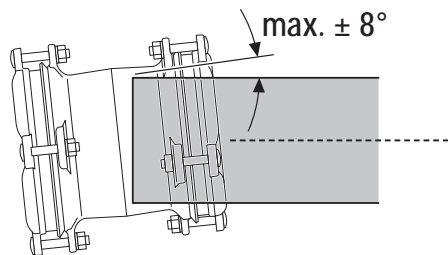
D	Montage
NL	Montage
F	Installation
NO	Montering
SE	Installation
DK	Installation
FIN	Asennus
PT	Instalação

ES	Instalación
IT	Installazione
GR	Installazione
CZ	Instalace
HU	Felhelyezés
RO	Instalarea
PL	Montaż
RUS	Установка



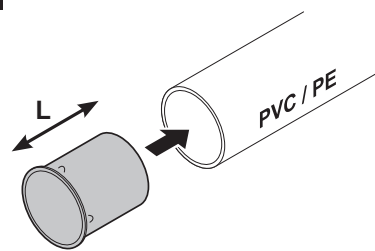
WA4000/10-19/ML

10 NOMINAL ANGULARITY*

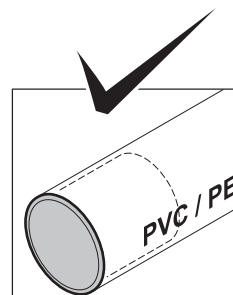


* based on the middle of the range

11



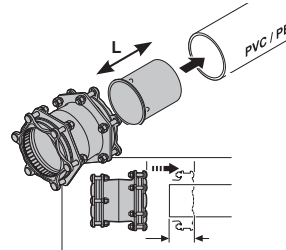
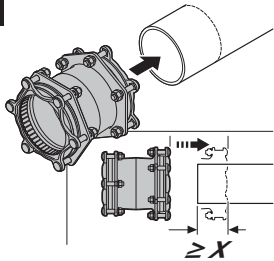
[approved by Georg Fischer Waga N.V.]



WA4000/10-19/ML

12

MAKE SURE "FIKSERS" (METAL GRIPPERS) ARE IN CORRECT POSITION!



PVC / PE



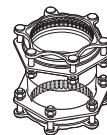
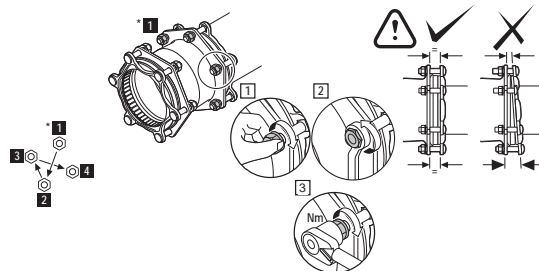
$\geq x + 2,5 \text{ mm} \leq L$

D	Sicherstellen, dass alle Fikser richtig positioniert sind.	ES	Asegurarse de utilizar los Fiksers adecuados en la posición adecuada.
NL	Houd de "Fiksers" in de juiste positie! Bij gebruik steunbus PE/PVC: let op! Max. insteekdiepte \leq lengte steunbus (L).	IT	Controllare che le placche antisfilo metalliche siano fissate.
F	Assurez-vous que les "Fiksers" (les mors métalliques) sont correctement positionnés.	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.
NO	Ved strekkfast løsning sjekk at Fikserne er på plass.	CZ	Zkontrolovat správnou pozici fixerů (zákusné díly).
SE	Säkerställ att "Fiksers" (metal gripbleck) är korrekt positionerade.	HU	Győződjön meg róla, hogy a "Fikser"-ek (fém húzásbiztosítók) megfelelő helyzetben vannak-e!
DK	Vær opmærksom på om "Fikserne" (metal-griberne) sidder korrekt!	RO	Se verifica dacă elementele metalice de fixare "Fiksers" sunt în poziția corectă!
FIN	Varmista "Fikserit" (metalli puristimet) ovat paikallaan.	PL	Upewnić się czy blaszki "Fiksers" są odpowiednio ułożone.
PT	Garantir que os "Fiksers" ("grampos" de metal) estão na posição correto.	RUS	Убедиться в правильности установки "Fiksers" (металлических фиксаторов).

WA4000/10-19/ML

13^a

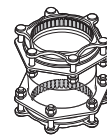
TIGHTEN THE BOLTS WITH THE CORRECT TORQUE.



MULTI/JOINT® 3000 Plus
without Fikser



MULTI/JOINT® 3000 Plus
with Fikser



DN150-400


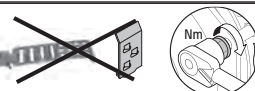
DN50-125

D	Der Tabelle das richtige Schraubendrehmoment entnehmen.	ES	Ver tabla para el par de apriete.
NL	Zie de tabel voor het juiste aandraaimoment.	IT	Controllare la tabella per il serraggio.
F	Vérifiez dans les tableaux le couple de serrage à respecter.	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.
NO	Mutrene strammes i kryss, da man skal holde samme avstand mellom koblingshus og trykklens(gland). Etterstram med en momentnøkkel iht. Momenttabell.	CZ	Zkontrolizte v tabulce správný utahovací moment.
SE	Kontrollera i tabell korrekt åtdragningsmoment.	HU	Ellenőrizze a táblázatot a megfelelő nyomaték érdekében.
DK	Det rigtige tilspændingsmoment findes i tabellen.	RO	Se verifica în tabel valoarea momentului de stangere.
FIN	Tarkista taulukosta oikea vääntömomentti.	PL	Odczytaj z tabeli odpowiedni moment dokręcania śrub.
PT	Ver na tabela a força de aperto.	RUS	Проверить по таблице соответствующий момент затяжки болтов.

WA4000/10-19/ML

13^b

CHECK TABLE FOR INSTALLATION TORQUE AND PRESSURE RATING.

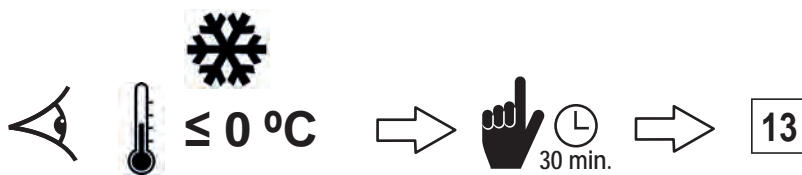
RESTRAINT				NON-RESTRAINT					
MULTI/JOINT® 3000 Plus with Fikser 				MULTI/JOINT® 3000 Plus without Fikser 					
(S)St, CU, DCI, GCI, AC*, GRP*, PVC, PE, PEX, PP-B, PP-H, ABS [* NO guarantee as quality varies!]				(S)St, CU, DCI, GCI, AC, GRP, PVC, PE, PEX, PP-B, PP-H, ABS					
DN	Torque (Nm)	MOP gas (bar)	PFA water (bar)	DN	Torque (Nm)	MOP gas (bar)	PFA water (16 bar)	Torque (Nm)	PFA water (25 bar)
DN50	30	8	16	DN50	30	8	16	30	25
DN65	40			40					
DN80	60			60					
DN100	100			100					
DN125				80	100				
DN150					120			140	
DN200	120			140					
DN225									
DN250	140			140					
DN300					140			140	
DN350	140	140							
DN400			140	140					
		8**	16**						

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

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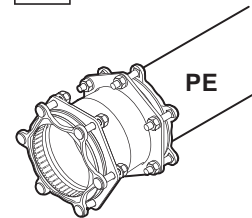
14

≤ 0 °C ONLY ON PE PIPE UNDER FREEZING CONDITIONS, APPLY TORQUE (PRESCRIBED UNDER 13) ONE MORE TIME AFTER 30 MINUTES.



PE

- D** Nur für Einsatz auf PE Röhren bei Temperaturen ≤ 0, das unter 13 ermittelte Schraubendrehmoment nach 30 Minuten noch einmal aufbringen.
- NL** Alleen bij montage op PE bij temperaturen onder 0, het (onder 13) voorgeschreven draaimoment na 30 minuten nog eenmaal aanbrengen.
- F** Répétez l'étape 13 après 30 minutes seulement sur des tubes en PE en temps glacial.
- HU** ≤ 0 °C fagyponat alatti hőmérsékleten, csak PE csöveken, 30 perc elteltével újra nyomatékra kell húzni a 13. oldalon leírtak szerint



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16

TESTING



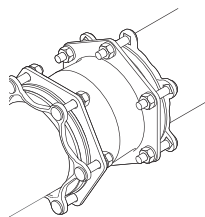
$$P_{\max} \leq 1,5 \times PFA *$$

D	Dichtheitsprüfung
NL	Testen
F	Essais
NO	Trykktesting
SE	Testa
DK	Prøvning
FIN	Testi
PT	Teste

ES	Probar
IT	Test
GR	Έλεγχος/ δοκιμές
CZ	Zkouška
HU	Tesztelés
RO	Testarea
PL	Testowanie
RUS	Испытание

WA4000/10-19/ML

15 CONDUCT A PRESSURE TEST.



13

size	PFA	P	PFA	P
mm	inch	bar	psi	bar
71	3	0	0	0
80	3.15	0	0	0
105	4.13	0	0	0
150	5.91	0	0	0
192	7.56	25	363	1

* PN25 → P_{max} ≤ 30 bar

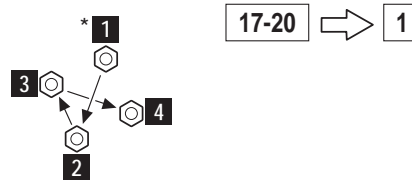
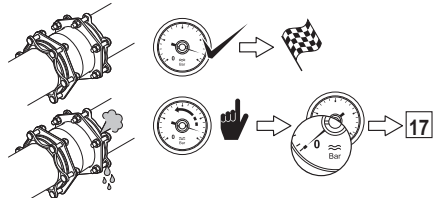
D	Dichtheitsprüfung durchführen.
NL	Voer een druktest uit.
F	Procédez à un essai de pression.
NO	Utfør tryktest på hele installasjonen, med minimum det aktuelle driftstrykk før anlegget dekkes til. Tryktestingen må ikke overstige 1,5 x PFA (max arbeidstrykk) i henhold til tabellen.
SE	Utför tryckprovning.
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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16

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



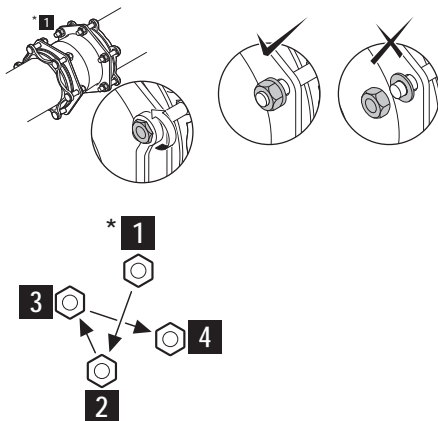
D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief => opnieuw installeren. Test OK => installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai 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-installér 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 fittingul. 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.

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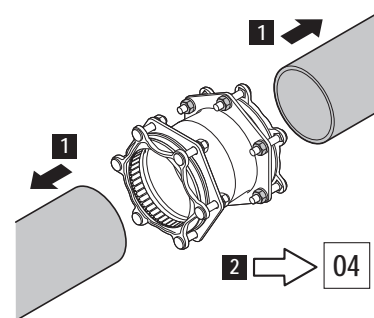
17

DISASSEMBLY



18

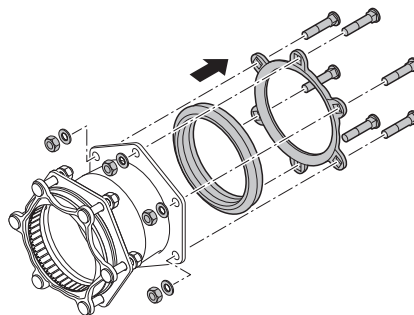
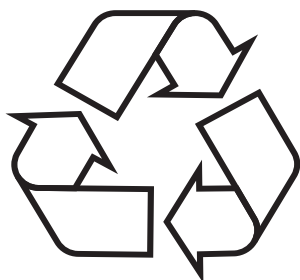
DISASSEMBLY



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20

REUSE



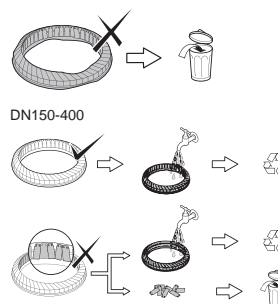
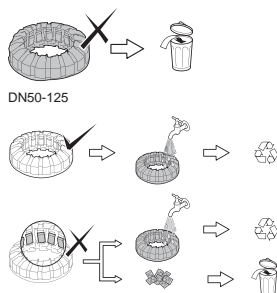
D	Wiederverwendung
NL	Hergebruik
F	Réutilisation
NO	Gjenbruk
SE	Återanvända
DK	Genbrug
FIN	Uudelleen käyttö
PT	Reutilização

ES	Reutilizar
IT	Riutilizzo
GR	Επαναχρησιμοποίηση
CZ	Opětovné použití
HU	Újra felhasználás
RO	Reutilizarea
PL	Ponowne użycie
RUS	Повторное использование

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19

CHECK "FIKSERS" AND GASKET CONDITION.



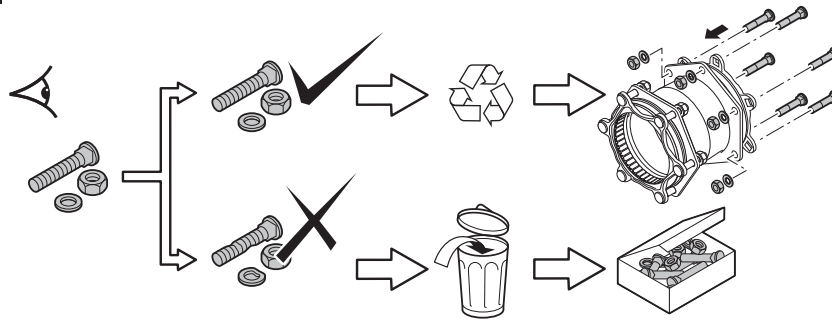
D	Die Dichtung und die Fikser überprüfen, ob diese in unbeschädigten, neuwertigem Zustand sind.
NL	Controleer de conditie van de "Fiksers" en de afdichtingsring.
F	Vérifiez l'état des "Fiksers" et du joint.
NO	Kontroller "Fikserne" og pakningens stand.
SE	Kontrollera "Fiksers" och tätningars kondition.
DK	Kontroller "Fiksernes" og tætningsringens tilstand.
FIN	Tarkista "Fikseri" ja tiiviste kunto.
PT	Ver o estado dos Fiksers" e do anel.

ES	Revisar los "Fiksers" y la Junta.
IT	Controllare gli inserti antisfilo "Fiksers" e la guarnizione.
GR	Ελέγξτε την κατάσταση στην οποία βρίσκονται τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος "Fiksers" και τα παρεμβύσματα.
CZ	Zkontrolovat stav fixerů a těsnění.
HU	Ellenőrizze a "Fikser"-ek és a tömítés állapotát.
RO	Se verifica starea elementele de fixare "Fiksers" si a garniturilor.
PL	Sprawdź stan blaszek i uszczelki.
RUS	Проверить состояние "Fiksers" (металлических фиксаторов) и резинового уплотнения.

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20

CHECK BOLTS, WASHERS AND NUTS.



D	Die Schrauben, Unterlegscheiben und Muttern auf Gebrauchstauglichkeit überprüfen.
NL	Controleer bouten, moeren en onderlegingen.
F	Vérifiez l'état des vis, des rondelles et des écrous.
NO	Kontroller skiver, mutter og bolter.
SE	Kontrollera bultar, brickor och muttrar.
DK	Kontroller bolte, skiver og møtrikker.
FIN	Tarkista lukko, prikka ja mutteri.
PT	Ver o estado dos parafusos, arruelas e porcas.

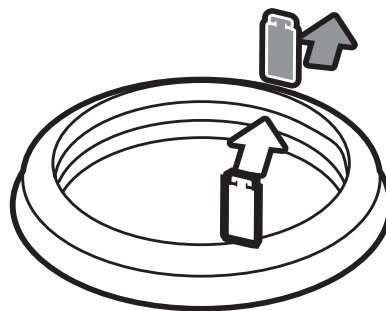
ES	Revisar los tornillos, arandelas y tuercas.
IT	Controllare viti, dadi e rondelle.
GR	Ελέγξτε την κατάσταση των βιδών, των παξιμαδιών και των περικοχλίων αν έχουν εφαρμόσει σωστά.
CZ	Zkontrolovat šrouby, podložky a matky.
HU	Ellenőrizze a csavarokat, anyákat és alátéteket.
RO	Se verifica suruburile si piulitele.
PL	Sprawdź śruby, nakrętki i podkładki.
RUS	Проверить наличие болтов, шайб и гаек.

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21 24
22 25
23

INSTALLATION/REMOVAL OF "FIKSEERS"



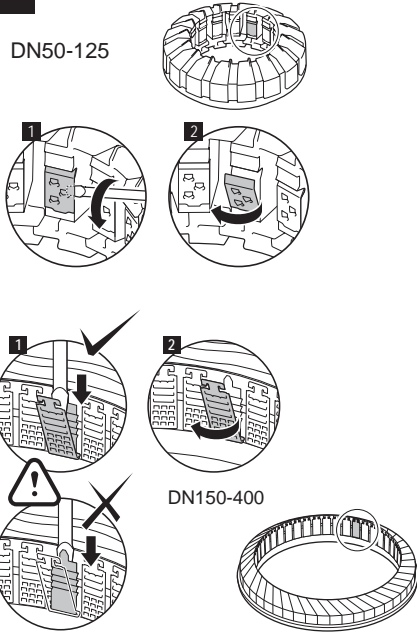
D	Montage/Demontage der Fikser
NL	Fiksers monteren/verwijderen
F	Mise en place / Dépose des "Fiksers"
NO	Montering/fjerning av "Fiksere"
SE	Installation/borttagande av "Fiksers"
DK	Installation/demontering af fikser
FIN	"Fikserien" asennus / poisto
PT	Instalação/Retirar los Fikser

ES	Instalación/Retirar los Fikser
IT	Installazione/rimozione "Fiksers"
GR	Εγκατάσταση/απομάκρυνση των εξαρτημάτων αγκύρωσης "Fiksers"
CZ	Instalace/odstranění fixerů
HU	"Fikser"-ek behelyezésé/eltávolítása
RO	Intalarea/Indepartarea elementelor de fixare "Fiksers"
PL	Montaż/demontaż blaszek "Fiksers"
RUS	Установка/снятие фиксаторов

WA 4000/10-19/ML

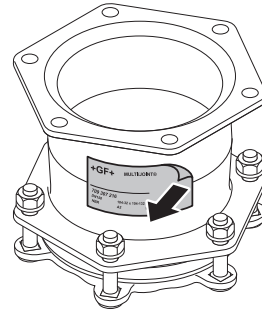
21

DN50-125



DN150-400

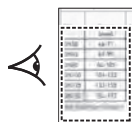
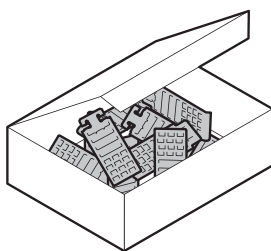
22



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23

CHECK TABLE FOR CORRECT NUMBER OF "FIKSERS" PER DN.



DN	Uni/Fikser	DN	Uni/Fikser
DN50	16	DN200	48
DN65	19	DN225	45
DN80	22	DN250	53
DN100	15	DN300	63
DN125	18	DN350	68
DN150	40	DN400	74

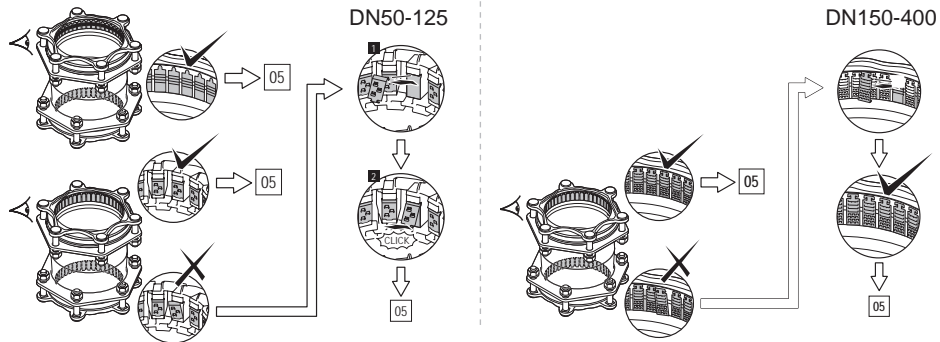
- D** Die Anzahl (laut Tabelle) der Fikser überprüfen.
- NL** Zie de tabel voor juiste aantal "Fiksers" per DN.
- F** Vérifiez dans le tableau le nombre exact de "Fiksers" à installer par DN.
- NO** Sjekk tabell vedrørende antall "Fiksere" mot DN.
- SE** Kontrollera i tabellen för korrekt antal "Fiksers" per DN.
- DK** Kontroller det korrekte antal "Fiksers" pr. DN med tabellen.
- FIN** Tarkista taulukosta oikea "Fikserien" lukumäärä per DN.
- PT** Ver na tabela o numero de "Fiksers" para cada diâmetro.

- ES** Ver Tabla para instalar el numero apropiado de Fiksers por DN.
- IT** Controllare in tabella il numero di "Fiksers" per DN.
- GR** Ελέγξτε από τον πίνακα αν ο σύνδεσμος διαθέτει τον κατάλληλο αριθμό εξαρτημάτων συγκράτησης "Fiksers" ανάλογα με τη διάμετρό του (DN).
- CZ** V tabulce zkontrolovat správný počet fixerů v závislosti na DN.
- HU** Ellenőrizze a táblázatot a megfelelő számú "Fikser" per DN érdekében.
- RO** Se verifica in tabel numarul recomandat de elemente de fixare "Fiksers" pentru un anumit DN
- PL** Odczytaj z tabeli liczbę blaszek przypadających na daną wartość DN.
- RUS** Проверить по таблице количество фиксаторов для данного DN.

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24

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

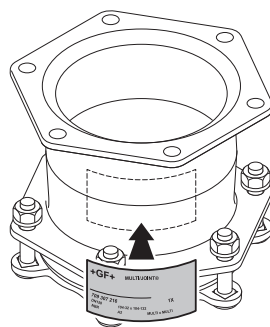


- | | | | |
|------------|--|------------|--|
| D | Sicherstellen, dass alle Fikser richtig positioniert sind. | ES | Revisar si los "Fiksers" se encuentran en la posición correcta. |
| NL | Controleer de juiste positie van de "Fiksers". | IT | Controllare gli inserti antisfilo "Fiksers" sono OK. |
|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

WA 4000/10-19/ML

25

ATTACH NEW STICKER.



- | | | | |
|------------|--|------------|---|
| D | Neues Etikett am Fittingskörper anbringen. | ES | Adjuntar una nueva pegatina. |
| NL | Plaats een nieuwe sticker. | IT | Attaccare. |
| F | Collez la nouvelle étiquette. | GR | Επικολλήστε καινούριο αυτοκόλλητο σήμανσης στον αγωγό μετά τη τοποθέτηση. |
| NO | Monter nytt klistremerke. | CZ | Nalepit nový štítek. |
| SE | Sätt på ny sticker. | HU | Ragasszon fel új címkét. |
| DK | Påsæt ny etiket. | RO | Se lipeste o eticheta noua. |
| FIN | Attach new sticker. | PL | Przylep nową naklejkę. |
| PT | Colocar etiqueta nova. | RUS | Нанести новую наклейку. |

WA 4000/10-19/ML

User manual MULTI/JOINT® 3000 Plus DN425 - DN600

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

MULTI/JOINT® 3000 Plus DN425-DN600



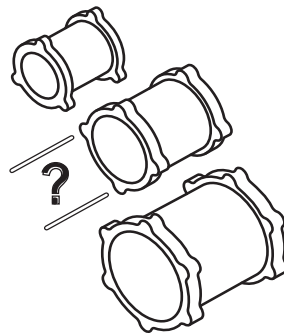
Georg Fischer Waga N.V.-P.O.Box 290-
8160 AG Epe-The Netherlands-www.waga.nl

DN425-DN600/10-19/ML



01

FITTING CHOICE

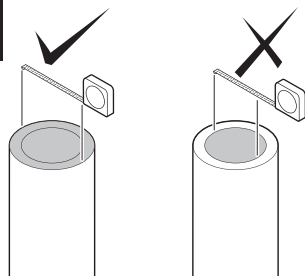


D	Kupplung auswählen	ES	Elegir union
NL	Keuze koppeling	IT	Scelta del giunto
F	Choisir le raccord	GR	Επιλογή συνδέσμου
NO	Valg av kobling	CZ	Výběr spojky
SE	Kopplings val	HU	Idom kiválasztása
DK	Valg af kobling	RO	Alegerea cuplei
FIN	Muhvi vaihtoehdot	PL	Wybór łącznika
PT	Escolha do tipo de ligação	RUS	Выбор фитинга

DN425-DN600/10-19/ML

01

CHECK TABLE IF CHOSEN FITTING MATCHES PIPE OD.

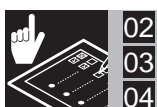


DN	Range (mm)
DN425	432 - 464
DN450	450 - 482
DN475	481 - 513
DN500	500 - 532
DN550	548 - 580
DN600	605 - 637

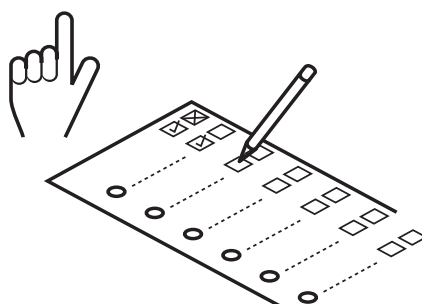
- D** Die Rohraussendurchmesser überprüfen und mit der Tabelle vergleichen.
- NL** Kies de juiste koppeling m.b.v. de tabel.
- F** Vérifiez sur le tableau si le raccord couvre bien le diamètre extérieur du tube.
- NO** Sjekk med tabell at koblingen stemmer overens med utvendig diameter rør.
- SE** Kontrollera om vald rördel stämmer mot rørets 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 diámetros 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 průměru.
- HU** Ellenőrizze, hogy a kiválasztott idom megfelel-e a cső külső átmérőjéhez.
- RO** Se verifica în tabel dacă fittingul ales corespunde Dext al tevi.
- PL** Sprawdź w tabeli czy łącznik pasuje do zewnętrznej średnicy rury.
- RUS** Проверить по таблице совместимость фитинга с трубой.

DN425-DN600/10-19/ML

02
03
04

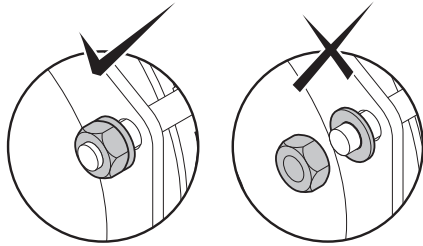
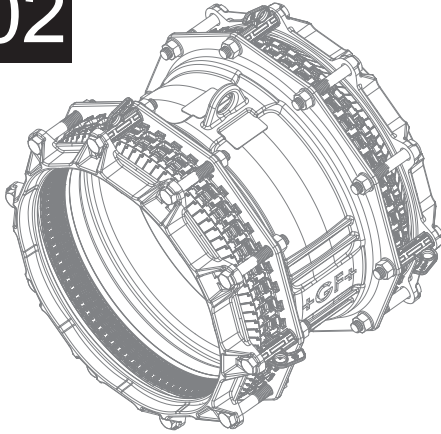
PREPARE FITTING FOR INSTALLATION



- D** Kupplung für die Montage vorbereiten
- NL** Montageklaar maken
- F** Préparez le raccord pour l'installation
- NO** Forbredelse av kobling
- SE** Förbered kopplingen för installation
- DK** Klargør koblingen til installationen
- FIN** Valmista muhvi asennusta varten
- PT** Preparação da ligação
- ES** Preparar manguito para instalacion
- IT** Preparazione per l'installazione
- GR** Προετοιμασία συνδέσμου για τοποθέτηση
- CZ** Příprava spojky pro instalaci
- HU** Idom előkészítése a felhelyezésre
- RO** Pregătirea cuplei pentru instalare
- PL** Przygotowanie łącznika do instalacji
- RUS** Подготовка фитинга к установке

DN425-DN600/10-19/ML

02



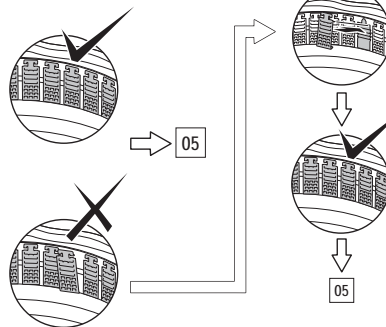
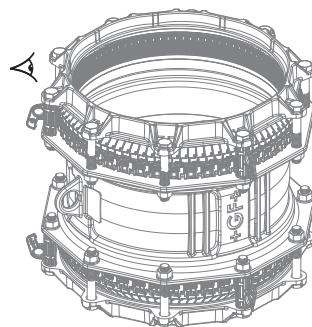
03



DN425-DN600/10-19/ML

04

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



DN425-600

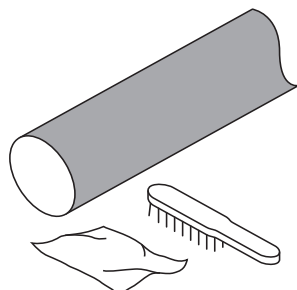
- D** Sicherstellen, dass alle Fikser richtig positioniert sind.
- NL** Controleer de juiste positie van de "Fiksers".
- F** Assurez-vous que les "Fiksers" (les mors métalliques) sont correctement positionnés.
- NO** Kontroller at "Fikserne" er i riktig plassisjon.
- SE** Kontrollera om "Fiksers" position 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 posición 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 dacă poziția elementelor de fixare "Fiksers" este corectă.
- PL** Sprawdź poprawność ułożenia blaszek.
- RUS** Убедиться в правильности установки "Fiksers" (металлических фиксаторов).

DN425-DN600/10-19/ML



PIPE PREPARATION



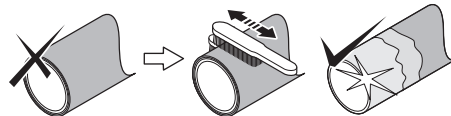
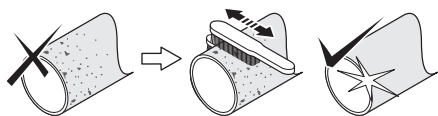
D	Zu verbindende Rohre vorbereiten
NL	Vorbereiden buis
F	Préparez les tubes
NO	Forbredelse av rør
SE	Rörberedning
DK	Klargøring af røret
FIN	Putken esivalmistus
PT	Preparação do tubo

ES	Preparacion de la tubería
IT	Preparazione tubazione
GR	Προετοιμασία Αγωγού
CZ	Příprava trubky
HU	Cső előkészítése
RO	Pregătirea conductei
PL	Przygotowanie rury
RUS	Подготовка труб

DN425-DN600/10-19/ML

05

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



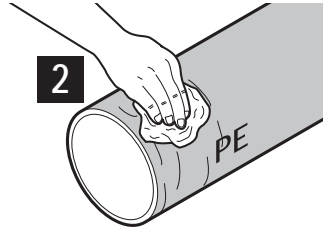
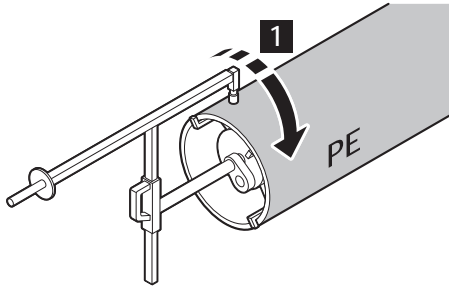
D	Von der drucktragenden Rohroberfläche allen Rost, Grat, Schmutz, Schäden und alle Beschichtungen entfernen.
NL	Verwijder alle roest, vuil, bramen, beschadigingen en buislagen. Monteer alleen op de mediumvoerende buis.
F	Éliminez la rouille, la saleté, les bourrelets de soudures, les défauts de surface 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 røret. Montera endast på mediabärande rörmaterial.
DK	Fjern al rust, snavs, spåner, beskadigelser og alle belægnings på røret. Monter kun på selve det medie bærende rør.
FIN	Poista kaikki ruoste, lika, taitte, vauriot ja kasaumat putkesta. Asenna ainoastaan keskivahvalle putkelle.
PT	Remover oxidação, suzeira, rebarbas, e revestimento do tubo.
HU	Távolítsón 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 tubería. 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, ořepky a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.
RO	Îndepartati 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.

DN425-DN600/10-19/ML

06

USE AN (BY GF) APPROVED SCRAPING TOOL.



GAS / GAZ

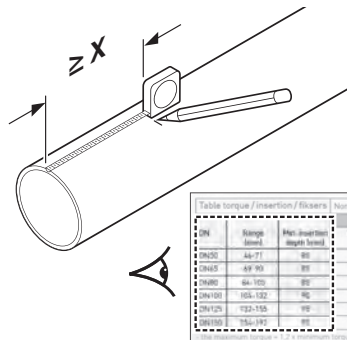
- D** Für PE-Rohre ist ein GF Schälgerät zu verwenden.
- NL** Gebruik een door GF goedgekeurde schiller.
- F** Utilisez un grattoir mécanique approuvé par GF.
- NO** Bruk skrapeverktøy godkjent av GF.
- SE** Använd ett (av GF) godkänt skrapverktyg.
- DK** Brug et (af GF) godkendt skrabeværktøj.
- FIN** 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.

DN425-DN600/10-19/ML

07

CHECK TABLE FOR MINIMUM INSERTION DEPTH (X).



DN	X Min. insertion depth (mm)*
DN425	170
DN450	
DN475	
DN500	
DN550	
DN600	

* For maximum joint gap information; see our technical manual or see our website www.waga.nl

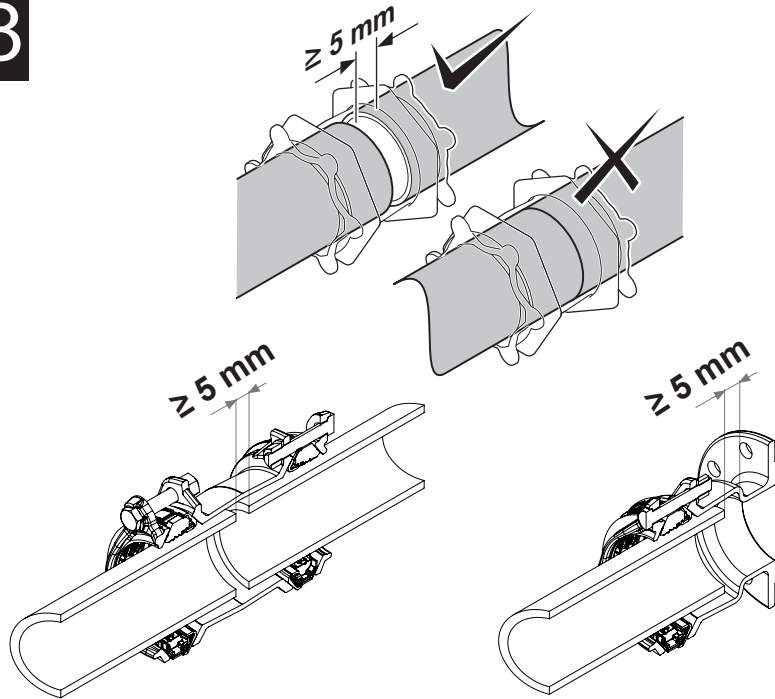


- D** Aus der Tabelle die Einstecktiefe entnehmen (X).
- NL** Zie de tabel voor de minimale insteekdiepte (X).
- F** Vérifiez sur le tableau la profondeur d'insertion (X) correcte du tube.
- NO** Sjekk med tabell for korrekt innstikksdybde (X).
- SE** Kontrollera i tabellen korrekt insticksdjup (X).
- DK** Kontroller med tabellen for korrekt indstikksdybde (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 mínima (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 betelési 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).

DN425-DN600/10-19/ML

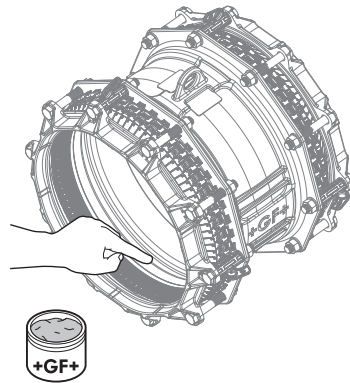
08



DN425-DN600/10-19/ML

09

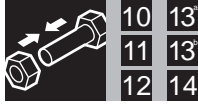
APPLY SUITABLE GREASE



GAS / GAZ

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

DN425-DN600/10-19/ML



10 13
11 13
12 14

INSTALLATION



EN:

When manoeuvring the product out of the packaging to the pipe surface, please ensure that the proper lifting procedures are followed. Ensure that local safety and lifting procedures are adopted. All lifting should be done by qualified personnel, with approved equipment.

NL:

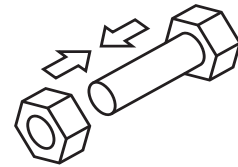
Zorg ervoor dat bij het manoeuvreren van het product vanuit de verpakking naar het buisoppervlak, de juiste hijsprocedures in acht worden genomen. U dient de lokale veiligheids- en hijsvoorschriften op te volgen. Het hijsen van producten dient te gebeuren met gekeurde hijsmiddelen en door gekwalificeerd personeel.

D:

Bitte stellen Sie eine ordnungsgemäße manuelle Handhabung sicher, wenn das Produkt aus seiner Verpackung entnommen, transportiert und am Rohr angebracht wird. Ist der Einsatz mechanischer Hebezeuge erforderlich, so muss gewährleistet werden, dass sichere Arbeitsverfahren angewendet werden, geprüfte und anerkannte Hebezeuge verwendet werden und von qualifiziertem Personal durchgeführt werden.

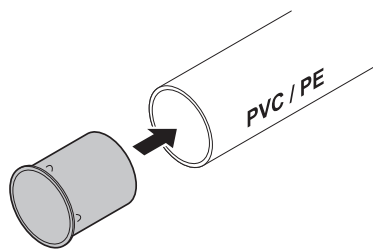
DU	Montage
NL	Montage
F	Installation
NO	Montering
SE	Installation
DK	Installation
FIN	Asennus
PT	Instalação

ES	Instalación
IT	Installazione
GR	Installazione
CZ	Instalace
HU	Felhelyezés
RO	Instalarea
PL	Montaż
RUS	Установка

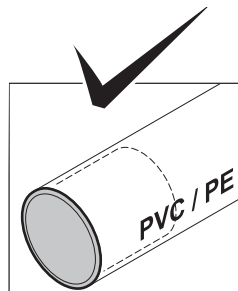


DN425-DN600/10-19/ML

10

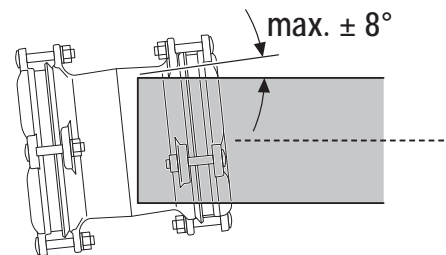


(approved by Georg Fischer Waga N.V.)



11

NOMINAL ANGULARITY*

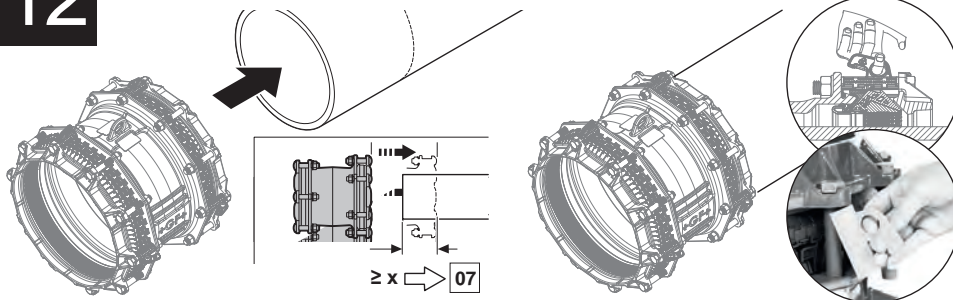


* based on the middle of the range

DN425-DN600/10-19/ML

12

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

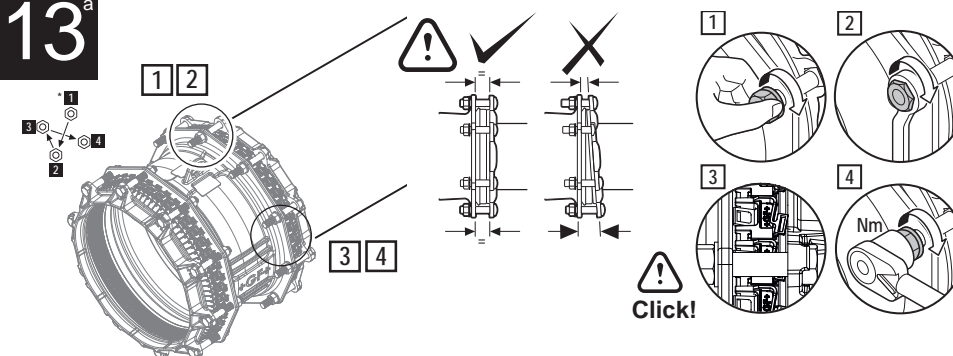


D	Den MULTI/JOINT® 3000 Plus auf das Rohrende schieben und den Transportclip entfernen!	ES	Deslice el MULTI/JOINT® 3000 Plus sobre el extremo del tubo y retire el clip de transporte!
NL	Schuif de MULTI/JOINT® 3000 Plus op het buiseinde en verwijder de transportclips!	IT	Inserire MULTI/JOINT® 3000 Plus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

DN425-DN600/10-19/ML

13^a

TIGHTEN THE BOLTS WITH THE CORRECT TORQUE.







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

DN425-DN600/10-19/ML

13^b

CHECK TABLE FOR INSTALLATION TORQUE AND PRESSURE RATING**.

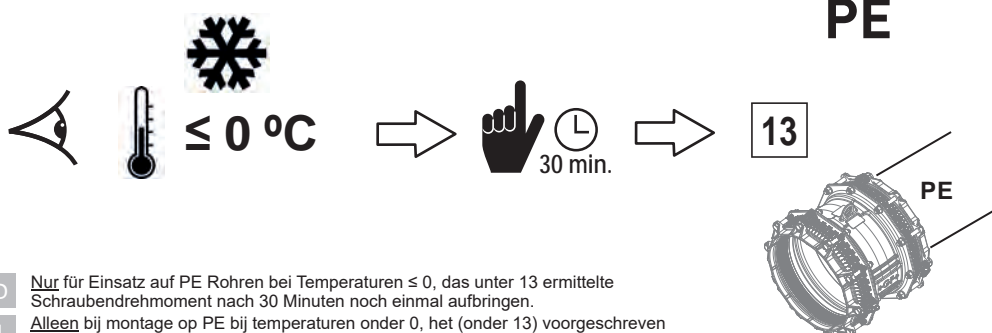
RESTRAINT				NON-RESTRAINT			
MULTI/JOINT® 3000 Plus <u>with Fikser</u>  				MULTI/JOINT® 3000 Plus <u>without Fikser</u>  			
(S)St, CU, DCI, GCI, AC*, GRP*, PVC, PE, PEX, PP-B, PP-H, ABS [* NO guarantee as quality varies!]				(S)St, CU, DCI, GCI, AC, GRP, PVC, PE, PEX, PP-B, PP-H, ABS			
DN	Torque (Nm)	MOP gas (bar)	PFA water (bar)	DN	Torque (Nm)	MOP gas (bar)	PFA water (bar)
DN425	140	5	10	DN425	140	8	16
DN450							
DN475							
DN500							
DN550							
DN600							

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

DN425-DN600/10-19/ML

14

≤ 0 °C ONLY ON PE PIPE UNDER FREEZING CONDITIONS, APPLY TORQUE (PRESCRIBED UNDER 13) ONE MORE TIME AFTER 30 MINUTES.



- D Nur für Einsatz auf PE Röhren bei Temperaturen ≤ 0, das unter 13 ermittelte Schraubendrehmoment nach 30 Minuten noch einmal aufbringen.
- NL Alleen bij montage op PE bij temperaturen onder 0, het (onder 13) voorgeschreven draaimoment na 30 minuten nog eenmaal aanbrengen.
- F Répétez l'étape 13 après 30 minutes seulement sur des tubes en PE en temps glacial.



DN425-DN600/10-19/ML



15
16

TESTING



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

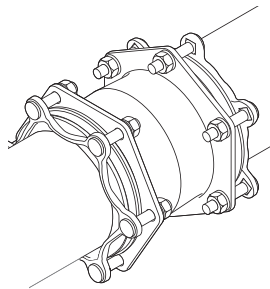
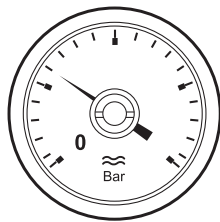
D	Dichtheitsprüfung
NL	Testen
F	Essais
NO	Trykktesting
SE	Testa
DK	Prøvning
FIN	Testi
PT	Teste

ES	Probar
IT	Test
GR	Έλεγχος/ δοκιμές
CZ	Zkouška
HU	Tesztelés
RO	Testarea
PL	Testowanie
RUS	Испытание

DN425-DN600/10-19/ML

15

CONDUCT A PRESSURE TEST.

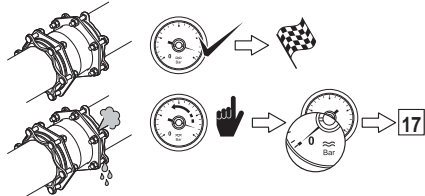


13^b

PN	PFA	PN	PFA
10	15	10	15
16	24	16	24
25	36	25	36
40	60	40	60
63	90	63	90
100	150	100	150
160	240	160	240
250	360	250	360
400	600	400	600
630	900	630	900
1000	1500	1000	1500
1600	2400	1600	2400
2500	3600	2500	3600
4000	6000	4000	6000
6300	9000	6300	9000
10000	15000	10000	15000
16000	24000	16000	24000
25000	36000	25000	36000
40000	60000	40000	60000
63000	90000	63000	90000
100000	150000	100000	150000
160000	240000	160000	240000
250000	360000	250000	360000
400000	600000	400000	600000
630000	900000	630000	900000
1000000	1500000	1000000	1500000
1600000	2400000	1600000	2400000
2500000	3600000	2500000	3600000
4000000	6000000	4000000	6000000
6300000	9000000	6300000	9000000
10000000	15000000	10000000	15000000
16000000	24000000	16000000	24000000
25000000	36000000	25000000	36000000
40000000	60000000	40000000	60000000
63000000	90000000	63000000	90000000
100000000	150000000	100000000	150000000
160000000	240000000	160000000	240000000
250000000	360000000	250000000	360000000
400000000	600000000	400000000	600000000
630000000	900000000	630000000	900000000
1000000000	1500000000	1000000000	1500000000
1600000000	2400000000	1600000000	2400000000
2500000000	3600000000	2500000000	3600000000
4000000000	6000000000	4000000000	6000000000
6300000000	9000000000	6300000000	9000000000
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16000000000	24000000000	16000000000	24000000000
25000000000	36000000000	25000000000	36000000000
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63000000000	90000000000	63000000000	90000000000
100000000000	150000000000	100000000000	150000000000
160000000000	240000000000	160000000000	240000000000
250000000000	360000000000	250000000000	360000000000
400000000000	600000000000	400000000000	600000000000
630000000000	900000000000	630000000000	900000000000
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2500000000000	3600000000000	2500000000000	3600000000000
4000000000000	6000000000000	4000000000000	6000000000000
6300000000000	9000000000000	6300000000000	9000000000000
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16000000000000	24000000000000	16000000000000	24000000000000
25000000000000	36000000000000	25000000000000	36000000000000
40000000000000	60000000000000	40000000000000	60000000000000
63000000000000	90000000000000	63000000000000	90000000000000
100000000000000	150000000000000	100000000000000	150000000000000
160000000000000	240000000000000	160000000000000	240000000000000
250000000000000	360000000000000	250000000000000	360000000000000
400000000000000	600000000000000	400000000000000	600000000000000
630000000000000	900000000000000	630000000000000	900000000000000
1000000000000000	1500000000000000	1000000000000000	1500000000000000
1600000000000000	2400000000000000	1600000000000000	2400000000000000
2500000000000000	3600000000000000	2500000000000000	3600000000000000
4000000000000000	6000000000000000	4000000000000000	6000000000000000
6300000000000000	9000000000000000	6300000000000000	9000000000000000
10000000000000000	15000000000000000	10000000000000000	15000000000000000
16000000000000000	24000000000000000	16000000000000000	24000000000000000
25000000000000000	36000000000000000	25000000000000000	36000000000000000
40000000000000000	60000000000000000	40000000000000000	60000000000000000
63000000000000000	90000000000000000	63000000000000000	90000000000000000
100000000000000000	150000000000000000	100000000000000000	150000000000000000
160000000000000000	240000000000000000	160000000000000000	240000000000000000
250000000000000000	360000000000000000	250000000000000000	360000000000000000
400000000000000000	600000000000000000	400000000000000000	600000000000000000
630000000000000000	900000000000000000	630000000000000000	900000000000000000
1000000000000000000	1500000000000000000	1000000000000000000	1500000000000000000
1600000000000000000	2400000000000000000	1600000000000000000	2400000000000000000
2500000000000000000	3600000000000000000	2500000000000000000	3600000000000000000
4000000000000000000	6000000000000000000	4000000000000000000	6000000000000000000
6300000000000000000	9000000000000000000	6300000000000000000	9000000000000000000
10000000000000000000	15000000000000000000	10000000000000000000	15000000000000000000
16000000000000000000	24000000000000000000	16000000000000000000	24000000000000000000
25000000000000000000	36000000000000000000	25000000000000000000	36000000000000000000
40000000000000000000	60000000000000000000	40000000000000000000	60000000000000000000
63000000000000000000	90000000000000000000	63000000000000000000	90000000000000000000
100000000000000000000	150000000000000000000	100000000000000000000	150000000000000000000
160000000000000000000	240000000000000000000	160000000000000000000	240000000000000000000
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400000000000000000000	600000000000000000000	400000000000000000000	600000000000000000000
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4000000000000000000000	6000000000000000000000	4000000000000000000000	6000000000000000000000
6300000000000000000000	9000000000000000000000	6300000000000000000000	9000000000000000000000
10000000000000000000000	15000000000000000000000	10000000000000000000000	15000000000000000000000
16000000000000000000000	24000000000000000000000	16000000000000000000000	24000000000000000000000
25000000000000000000000	36000000000000000000000	25000000000000000000000	36000000000000000000000
40000000000000000000000	60000000000000000000000	40000000000000000000000	60000000000000000000000
63000000000000000000000	90000000000000000000000	63000000000000000000000	90000000000000000000000
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160000000000000000000000	240000000000000000000000	160000000000000000000000	240000000000000000000000
250000000000000000000000	360000000000000000000000	250000000000000000000000	360000000000000000000000
400000000000000000000000	600000000000000000000000	400000000000000000000000	600000000000000000000000
630000000000000000000000	900000000000000000000000	630000000000000000000000	900000000000000000000000
1000000000000000000000000	1500000000000000000000000	1000000000000000000000000	1500000000000000000000000
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6300000000000000000000000	9000000000000000000000000	6300000000000000000000000	9000000000000000000000000
10000000000000000000000000	15000000000000000000000000	10000000000000000000000000	15000000000000000000000000
16000000000000000000000000	24000000000000000000000000	16000000000000000000000000	24000000000000000000000000
25000000000000000000000000	36000000000000000000000000	25000000000000000000000000	36000000000000000000000000
40000000000000000000000000	60000000000000000000000000	40000000000000000000000000	60000000000000000000000000
63000000000000000000000000	90000000000000000000000000	63000000000000000000000000	90000000000000000000000000
100000000000000000000000000	150000000000000000000000000	100000000000000000000000000	150000000000000000000000000
160000000000000000000000000	240000000000000000000000000	160000000000000000000000000	240000000000000000000000000
250000000000000000000000000	360000000000000000000000000	250000000000000000000000000	360000000000000000000000000
400000000000000000000000000	600000000000000000000000000	400000000000000000000000000	600000000000000000000000000
63000000000			

16

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



17-20 → 01

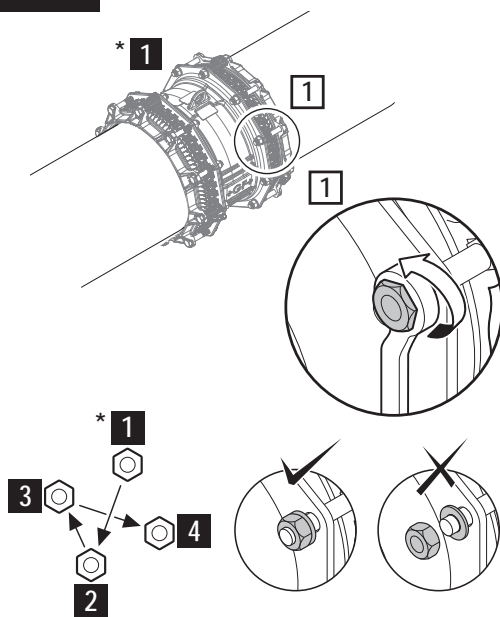
D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.
NL	Druktest negatief → opnieuw installeren. Test OK → installatie gereed.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.
NO	Trykkrøving 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 fittingul. 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 → Установку завершена.

DN425-DN600/10-19/ML

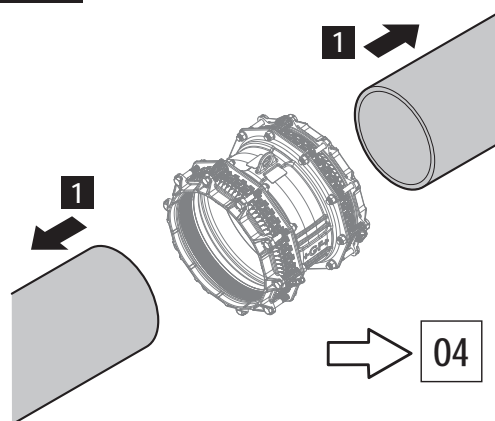
17

DISASSEMBLY



18

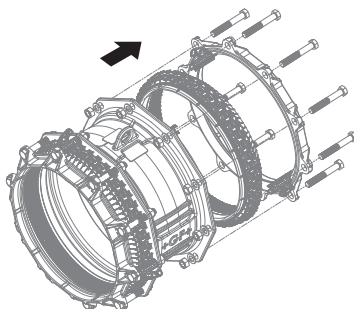
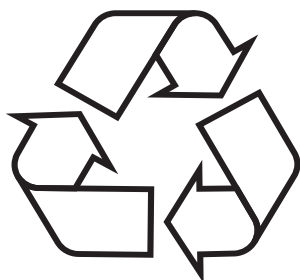
DISASSEMBLY



DN425-DN600/10-19/ML



REUSE



* For MULTI/JOINT® 3000 Plus User Manual re-use, replacing the Uni/Fiksring of DN425 – DN600 see our website www.waga.nl



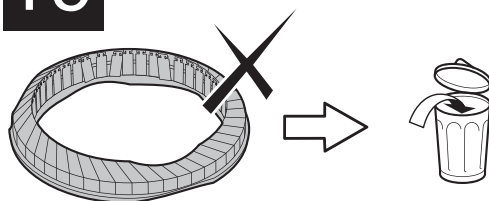
D	Wiederverwendung
NL	Hergebruik
F	Réutilisation
NO	Gjenbruk
SE	Återanvända
DK	Genbrug
FIN	Uudelleen käyttö
PT	Reutilização

ES	Reutilizar
IT	Riutilizzo
GR	Επαναχρησιμοποίηση
CZ	Opětovné použití
HU	Újra felhasználás
RO	Reutilizarea
PL	Ponowne użycie
RUS	Повторное использование

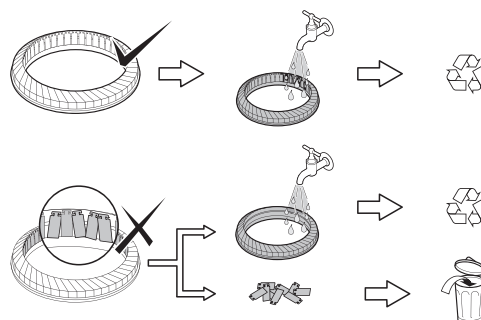
DN425-DN600/10-19/ML

19

CHECK "FIKSERS" AND GASKET CONDITION.



DN425-600



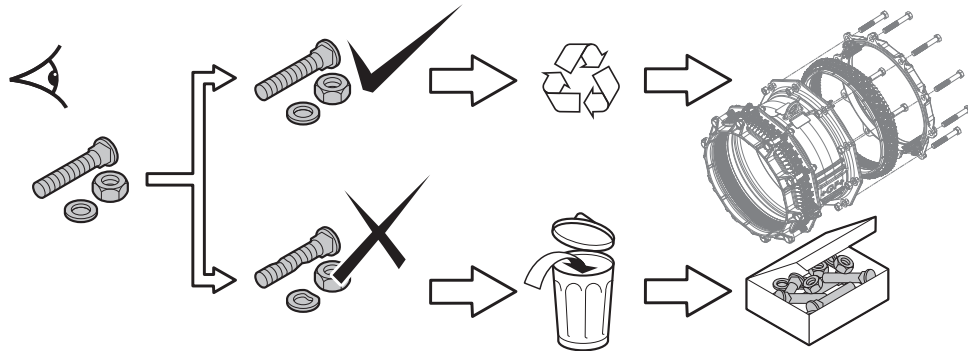
D	Die Dichtung und die Fikser überprüfen, ob diese in unbeschädigten, neuwertigem Zustand sind.
NL	Controleer de conditie van de "Fiksers" en de afdichtingsring.
F	Vérifiez l'état des "Fiksers" et du joint.
NO	Kontroller "Fikserne" og pakningens stand.
SE	Kontrollera "Fiksers" och tätningars kondition.
DK	Kontroller "Fiksernes" og tætningsringens tilstand.
FIN	Tarkista "Fikseri" ja tiiviste kunto.
PT	Ver o estado dos Fiksers" e do anel.

ES	Revisar los "Fiksers" y la Junta.
IT	Controllare gli inserti antisfilo "Fiksers" e la guarnizione.
GR	Ελέγξτε την κατάσταση στην οποία βρίσκονται τα εξαρτήματα αγκύρωσης που διαθέτει ο σύνδεσμος "Fiksers" και τα παρεμβύσματα.
CZ	Zkontrolovat stav fixerů a těsnění.
HU	Ellenőrizze a "Fikser"-ek és a tömítés állapotát.
RO	Se verifica starea elementele de fixare "Fiksers" si a garniturilor.
PL	Sprawdź stan blaszek i uszczelki.
RUS	Проверить состояние "Fiksers" (металлических фиксаторов) и резинового уплотнения.

DN425-DN600/10-19/ML

20

CHECK BOLTS, WASHERS AND NUTS.



D	Die Schrauben, Unterlegscheiben und Muttern auf Gebrauchstauglichkeit überprüfen.
NL	Controleer bouten, moeren en onderlegingen.
F	Vérifiez l'état des vis, des rondelles et des écrous.
NO	Kontroller skiver, mutter og bolter.
SE	Kontrollera bultar, brickor och muttrar.
DK	Kontroller bolte, skiver og møtrikker.
FIN	Tarkista lukko, priikka ja mutteri.
PT	Ver o estado dos parafusos, arruelas e porcas.

ES	Revisar los tornillos, arandelas y tuercas.
IT	Controllare viti, dadi e rondelle.
GR	Ελέγξτε την κατάσταση των βιδών, των παξιμαδιών και των περικοχλίων αν έχουν εφαρμόσει σωστά.
CZ	Zkontrolovat šrouby, podložky a matky.
HU	Ellenőrizze a csavarokat, anyákat és alátéteket.
RO	Se verifica suruburile si piulitele.
PL	Sprawdz śruby, nakrętki i podkładki.
RUS	Проверить наличие болтов, шайб и гаек.

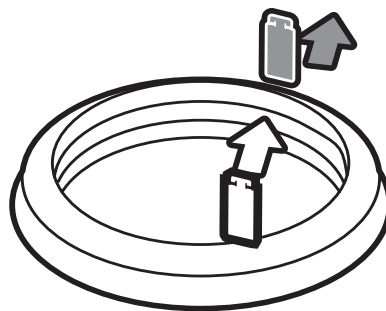
DN425-DN600/10-19/ML



21
22
23

24
25

INSTALLATION/REMOVAL OF "FIKSERS"

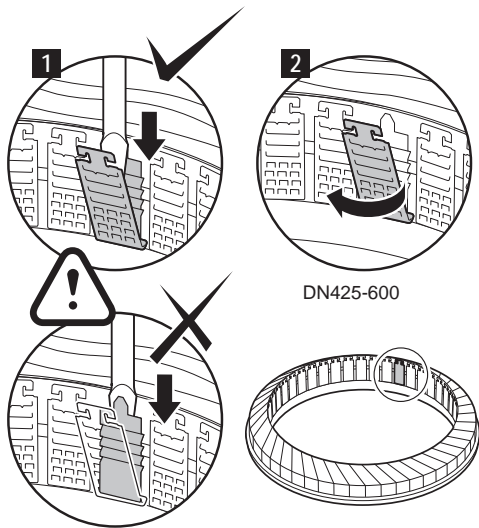


D	Montage/Demontage der Fikser
NL	Fiksers monteren/verwijderen
F	Mise en place / Dépose des "Fiksers"
NO	Montering/fjerning av "Fiksere"
SE	Installation/bortagande av "Fiksers"
DK	Installation/demontering af fikser
FIN	"Fikserien" asennus / poisto
PT	Instalação/Retirar los Fikser

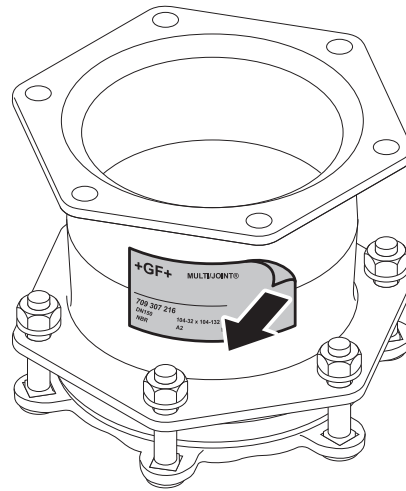
ES	Instalación/Retirar los Fikser
IT	Installazione/rimozione "Fiksers"
GR	Εγκατάσταση/απομάκρυνση των εξαρτημάτων αγκύρωσης "Fiksers"
CZ	Instalace/odstranění fixerů
HU	"Fikser"-ek behelyezés/eltávolítása
RO	Intalarea/Indepartarea elementelor de fixare "Fiksers"
PL	Montaż/demontaż blaszek "Fiksers"
RUS	Установка/снятие фиксаторов

DN425-DN600/10-19/ML

21



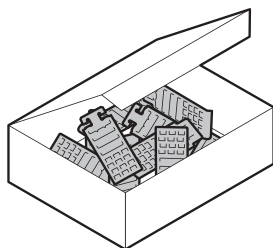
22



DN425-DN600/10-19/ML

23

CHECK TABLE FOR CORRECT NUMBER OF "FIKSERS" PER DN.



DN	Anzahl
DN50	44-71
DN65	68-90
DN80	84-105
DN100	104-132
DN125	132-155
DN150	154-192

DN	Uni/Fikser
DN425	84
DN450	88
DN475	93
DN500	97
DN550	105
DN600	115

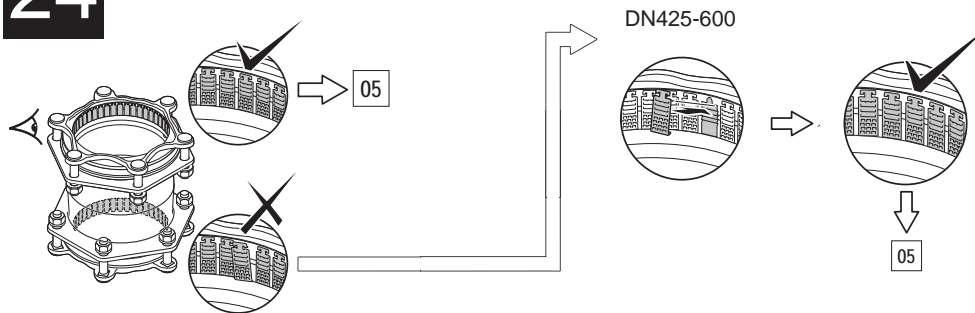
- D** Die Anzahl (laut Tabelle) der Fikser überprüfen.
- NL** Zie de tabel voor juiste aantal "Fiksers" per DN.
- F** Vérifiez dans le tableau le nombre exact de "Fiksers" à installer par DN.
- NO** Sjekk tabell vedrørende antall "Fiksere" mot DN.
- SE** Kontrollera i tabellen för korrekt antal "Fiksers" per DN.
- DK** Kontroller det korrekte antal "Fiksers" pr. DN med tabellen.
- FIN** Tarkista taulukosta oikea "Fikserien" lukumäärä per DN.
- PT** Ver na tabela o numero de "Fiksers" para cada diâmetro.

- ES** Ver Tabla para instalar el numero apropiado de Fiksers por DN.
- IT** Controllare in tabella il numero di "Fiksers" per DN.
- GR** Ελέγξτε από τον πίνακα αν ο σύνδεσμος διαθέτει τον κατάλληλο αριθμό εξαρτημάτων αγκύρωσης "Fiksers" ανάλογα με τη διάμετρό του (DN).
- CZ** V tabulce zkontrolovat správný počet fixerů v závislosti na DN.
- HU** Ellenőrizze a táblázatot a megfelelő számú "Fikser" per DN érdekében.
- RO** Se verifica in tabel numarul recomandat de elemente de fixare "Fiksers" pentru un anumit DN
- PL** Odczytaj z tabeli liczbę blaszek przypadających na daną wartość DN.
- RUS** Проверить по таблице количество фиксаторов для данного DN.

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24

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

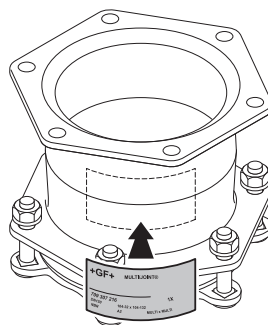


D	Sicherstellen, dass alle Fikser richtig positioniert sind.	ES	Revisar si los "Fiksers" se encuentran en la posición correcta.
NL	Controleer de juiste positie van de "Fiksers".	IT	Controllare gli inserti antisfilo "Fiksers" sono OK.
F	Assurez-vous que les "Fiksers" (les mors métalliques) sont correctement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

DN425-DN600/10-19/ML

25

ATTACH NEW STICKER.



D	Neues Etikett am Fittingskörper anbringen.	ES	Adjuntar una nueva pegatina.
NL	Plaats een nieuwe sticker.	IT	Attaccare.
F	Collez la nouvelle étiquette.	GR	Επικολήστε καινούριο αυτοκόλλητο σήμανσης στον αγωγό μετά τη τοποθέτηση.
NO	Monter nytt klistremerke.	CZ	Nalepit nový štítek.
SE	Sätt på ny sticker.	HU	Ragasszon fel új címkét.
DK	Påsæt ny etiket.	RO	Se lipeste o eticheta noua.
FIN	Attach new sticker.	PL	Przylep nową naklejkę.
PT	Colocar etiqueta nova.	RUS	Нанести новую наклейку.

DN425-DN600/10-19/ML

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/0418/ML

01

CHECK TABLE FOR MAX. RANGE OF DEDICATED FITTING.

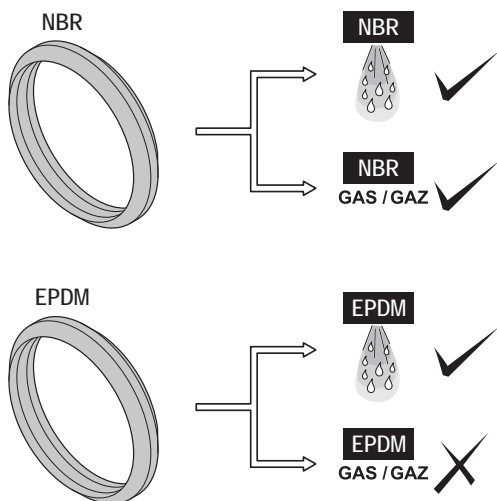
DN (mm)			Range (mm)	
DN40	-	DN80	+ 2	- 1
DN100	-	DN200	+ 2	- 1,5
DN250	-	DN500	+ 4	- 3
DN600	-	DN1100	+ 5	- 4
DN1200	-	DN1600	+ 5,5	- 5
DN1700	-	DN2200	on request	



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

User Manual ST-System/0418/ML

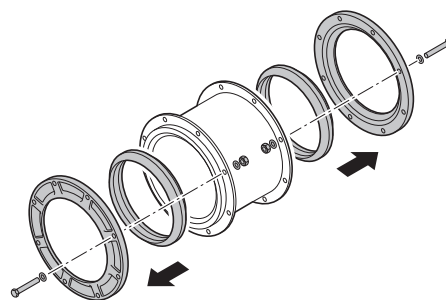
02



Water = 10, 16 or 25 bar*
Gas = 4 bar*

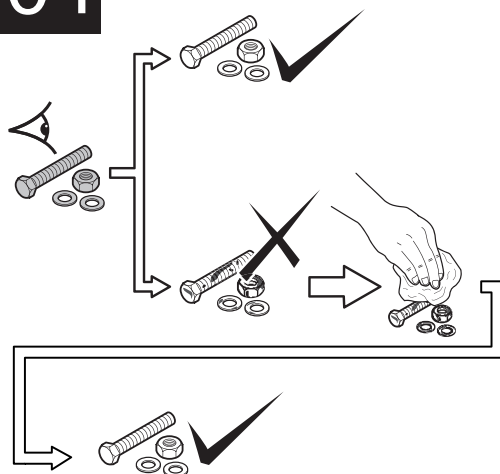
* Depends on ordered dedicated fitting.

03

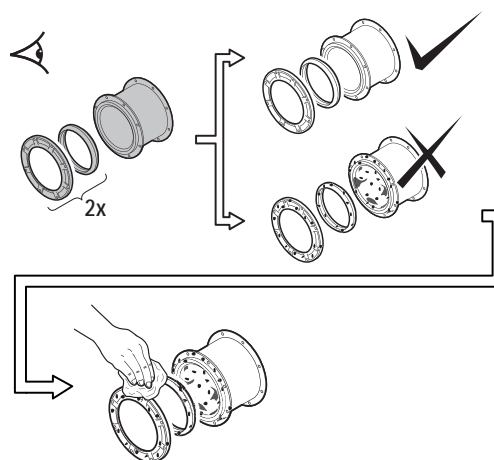


User Manual ST-System/0418/ML

04



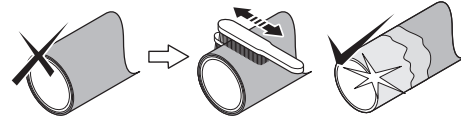
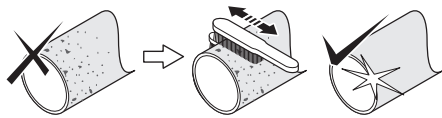
05



User Manual ST-System/0418/ML

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 Éliminez 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 röret. 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 Távolítsa 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 tubería. Montar solamente entre tubos.

IT Rimuovere sporczia, 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, ořehy a všechny dodatečné vrstvy z povrchu trubky. Montovat pouze na trubky určené pro transport médií.

RO Îndepartati praful, crestaturile, murdaria, defectele precum si toate straturile de acoperire de pe teava. Se monteaza doar pe materialul conductei.

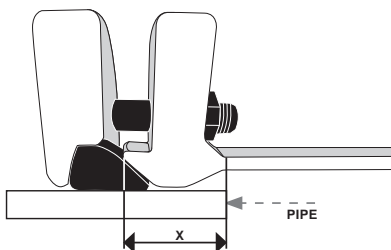
PL Usuń wszelkiego rodzaju uszkodzenia, zabrudzenia, zadrapania, rdzę i wierzchnie warstwy na długości rury pokrytej przez łącznik.

RUS Удалить любые загрязнения, ржавчину, задиры и наплывы, а так же покрытия с поверхности трубы. Устанавливать только на основной материал трубы.

User Manual ST-System/0418/ML

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		
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 indstikksdybde (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 mínima.

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).

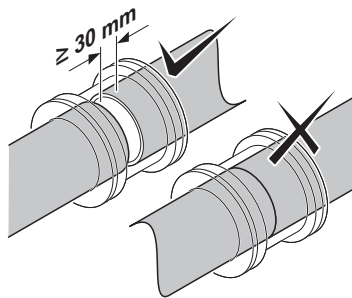
RO Se verifica in tabel adancimea corecta de inserare (X).

PL Korzystając z tabeli określi głębokość nasunięcia łącznika (X).

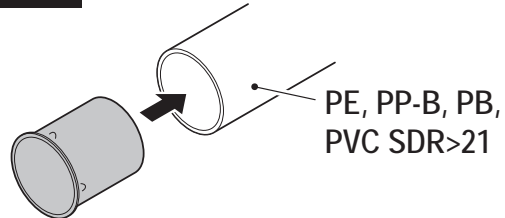
RUS Проверить по таблице значение глубины ввода трубы (X).

User Manual ST-System/0418/ML

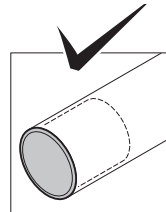
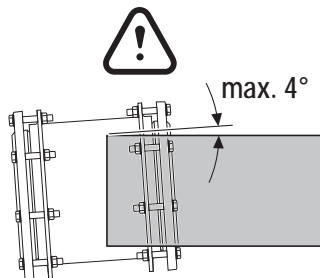
08



10



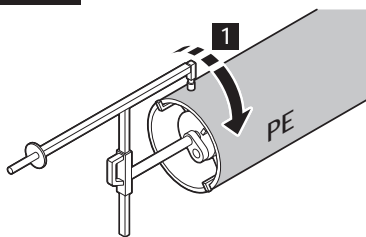
09



User Manual ST-System/0418/ML

11

USE AN (BY GEORG FISCHER) APPROVED SCRAPING TOOL.



GAS / GAZ



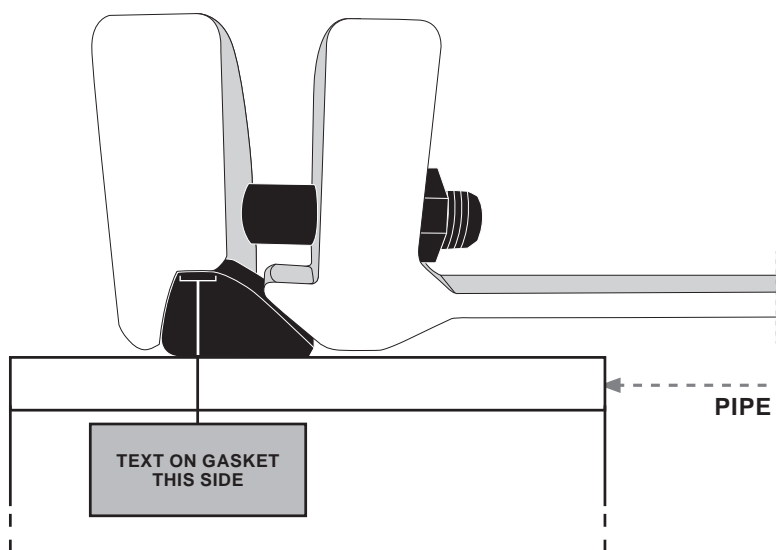
D	Für PE-Rohre ist ein Georg Fischer Schälgerät zu verwenden.
NL	Gebruik een door Georg Fischer goedgekeurde schiller.
F	Utilisez un grattoir mécanique approuvé par Georg Fischer.
NO	Bruk skrapeverktøy godkjent av Georg Fischer.
SE	Använd ett (av Georg Fischer) godkänt skrapverktyg.
DK	Brug et (af Georg 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	Použit 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.

User Manual ST-System/0418/ML

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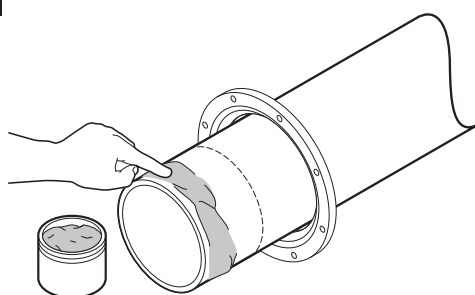
CORRECT POSITION OF THE CLAMP RING AND GASKET



User Manual ST-System/0418/ML

13

APPLY SUITABLE GREASE



GAS / GAZ

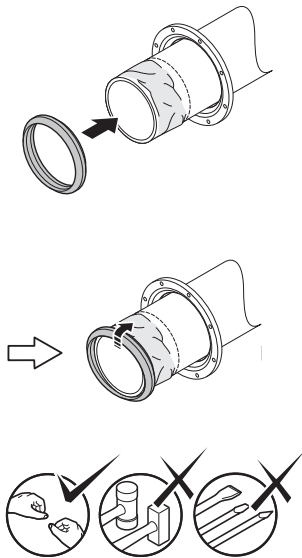


D	Für die Gasanwendung den Dichtungsbereich ausreichend mit Gleitmittel versehen.
NL	Smeer in met een geschikt glijmiddel.
F	Lubrifiez avec une graisse appropriée.
NO	Bruk egnet glidemiddel.
SE	Applicera lämpligt smörjmedel.
DK	Påfør egnet glidemiddel.
FIN	Lisää soveltuva rasva.
PT	Aplicar lubrificante adequado (nunca de origem mineral).

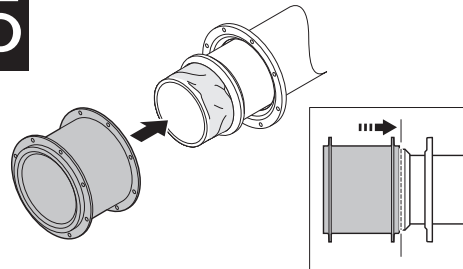
ES	Aplicar la grasa correspondiente.
IT	Applicare lubrificante opportuno.
GR	Τοποθετήστε κατάλληλη ποσότητα λιπαντικής ουσίας στα μηχανικά μέρη του συνδέσμου.
CZ	Aplikovat vhodné mazivo.
HU	Használgjon megfelelő kenőanyagot.
RO	Se aplica lubrifiant.
PL	Nałożyć warstwę smaru.
RUS	Использовать только подходящую смазку.

User Manual ST-System/0418/ML

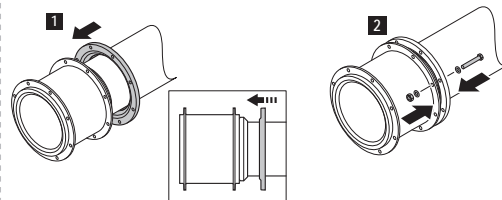
14



15



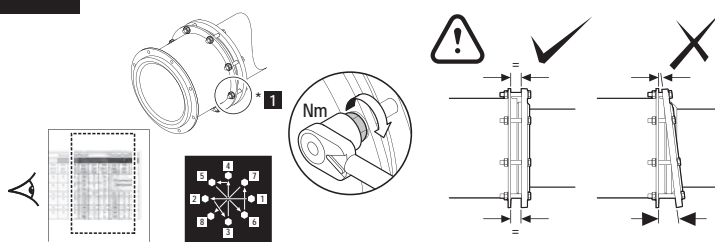
16



User Manual ST-System/0418/ML

17

CHECK TABLE FOR CORRECT TORQUE.



Bolts	Torque (Nm)
M16	50
M20	90
M24	150
M27	220
M30	310

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 trykklens(gland). Etterstram med en momentnøkkel iht. 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.

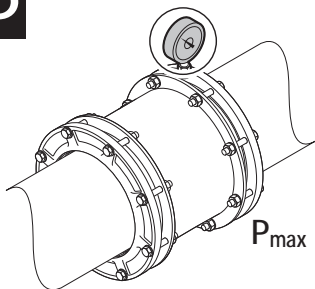
PL Odczytaj z tabeli odpowiedni moment dokręcania śrub.

RUS Проверить по таблице соответствующий момент затяжки болтов.

User Manual ST-System/0418/ML

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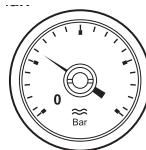
CONDUCT A PRESSURE TEST.



$P_{max} = 1.5 \times PFA$

Water = 10, 16 or 25 bar*
Gas = 4 bar*

* Depends on ordered dedicated fitting.

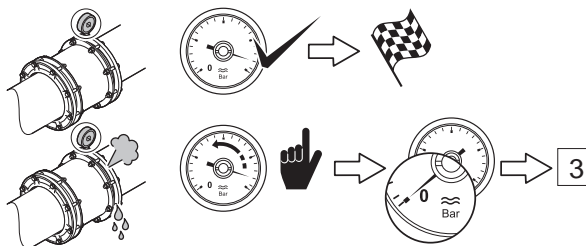


D	Dichtheitsprüfung durchführen.	ES	Realizar un test de presión.
NL	Voer een druktest uit.	IT	Fare test in pressione.
F	Procédez à un essai de pression.	GR	Για τον έλεγχο της στεγανότητας της σύνδεσης πραγματοποιείστε δοκιμή υπό πίεση στον αγωγό για τυχόν διαρροές.
NO	Utfør tryktest på hele installasjonen,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

User Manual ST-System/0418/ML

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

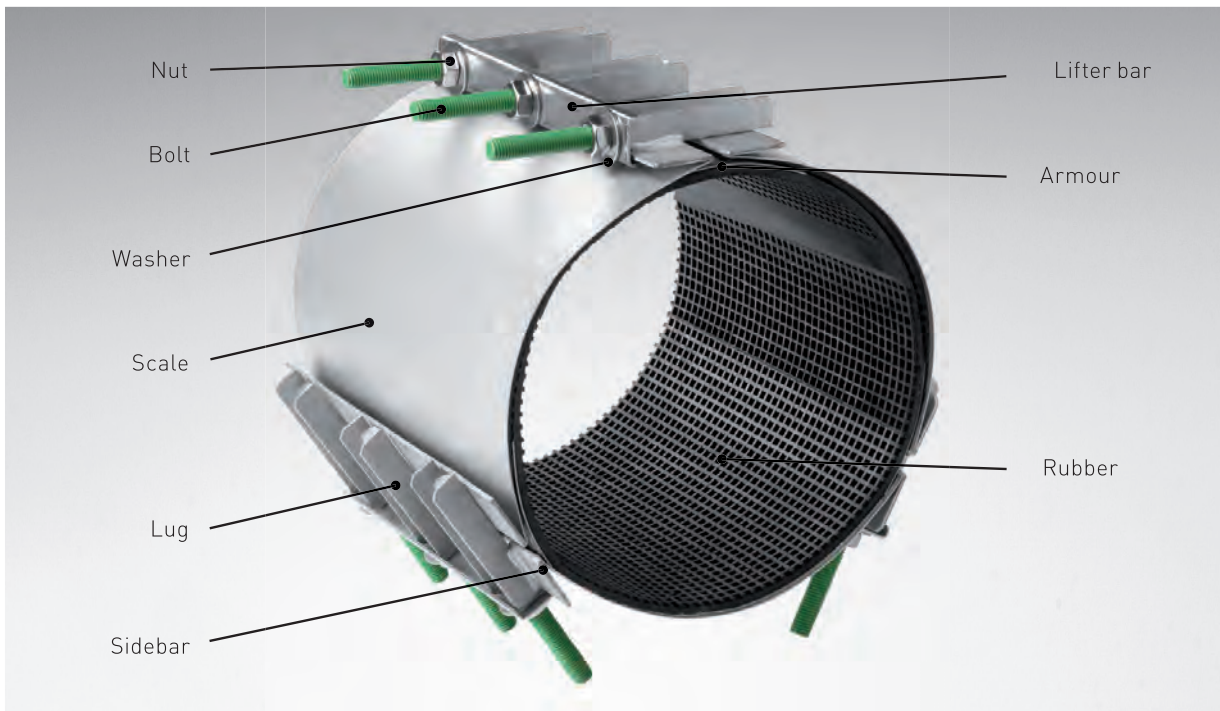


D	Falls die Dichtheitsprüfung eine Undichtheit aufzeigt, den Montagevorgang wiederholen - nach wiederholter, erfolgreicher Dichtheitsprüfung ist die Montage abgeschlossen.	IT	Se test negativo => Reinstallare. Se test positivo => Installazione finita.
NL	Druktest negatief => opnieuw installeren. Test OK => installatie gereed.	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.
F	Mauvais résultat d'essai, réinstallez le raccord. Essai réussi, l'installation est terminée.	CZ	Tlaková zkouška není OK => tvarovku znovu namontovat. Tlaková zkouška OK => konec instalace.
NO	Trykprøvning negativ => Re-installer kobling. Test OK => installasjon er utført.	HU	Nyomás próba sikertelen => végezze el újra az idom felhelyezését. Próba sikeres => felhelyezés befejezve.
SE	Tryckprovning falerar => Ommontera rördelen. Test OK => installation avslutad.	RO	Daca testul de presiune esueaza => Se reinstaleaza fittingul. Daca rezultatul testului este OK => Instalare terminata.
DK	Trykprøvning negativ => Re-installer kobling. Test OK => installationen er udført.	PL	Nieudana próba => Ponowny montaż łącznika. Udana próba => montaż zakończony.
FIN	Paine testi hylätty=> asennus uudelleen. Testi OK => asennus suoritettu.	RUS	Опрессовка не пройдена => Установить фитинг снова. Опрессовка пройдена => Установка завершена.
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		

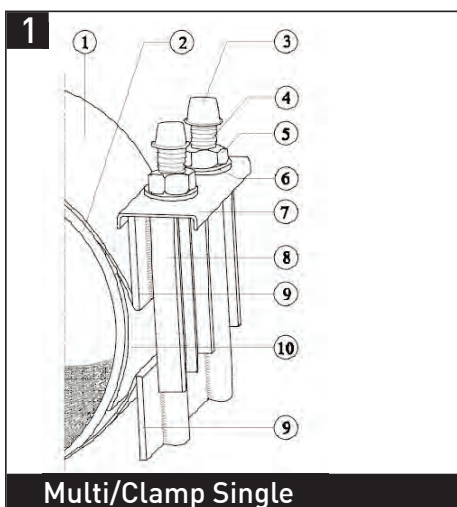
User Manual ST-System/0418/ML

User manual Multi/Clamp

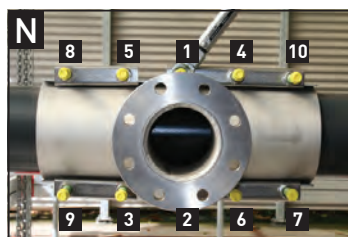
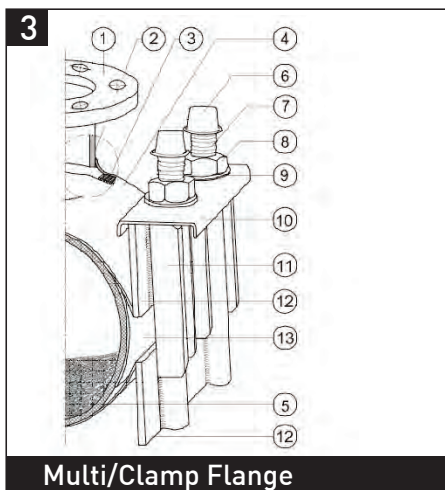
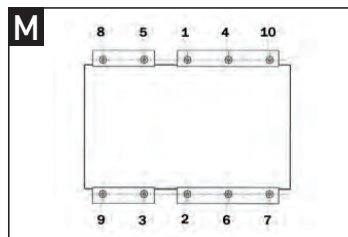
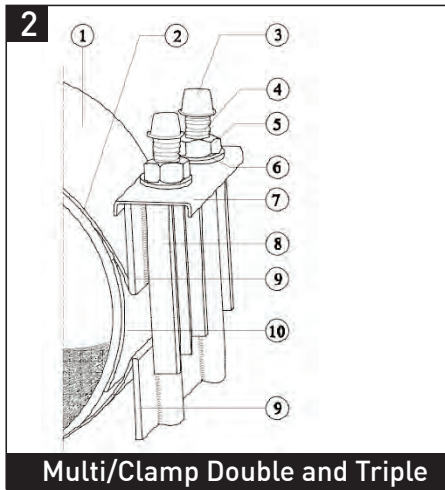
Multi/Clamp




Multi/Clamp Single (1)



Double and Triple (2), Flange (3)



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. 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 extrusion of the gasket.



Always consult your supplier before using Multi/Clamp on 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. 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.

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. **DO NOT** use oil-based grease on the gasket or pipe. Do not grease the nuts and bolts.



Always consult your supplier before using Multi/Clamp on 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 confirm that the clamp has been properly positioned.

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.

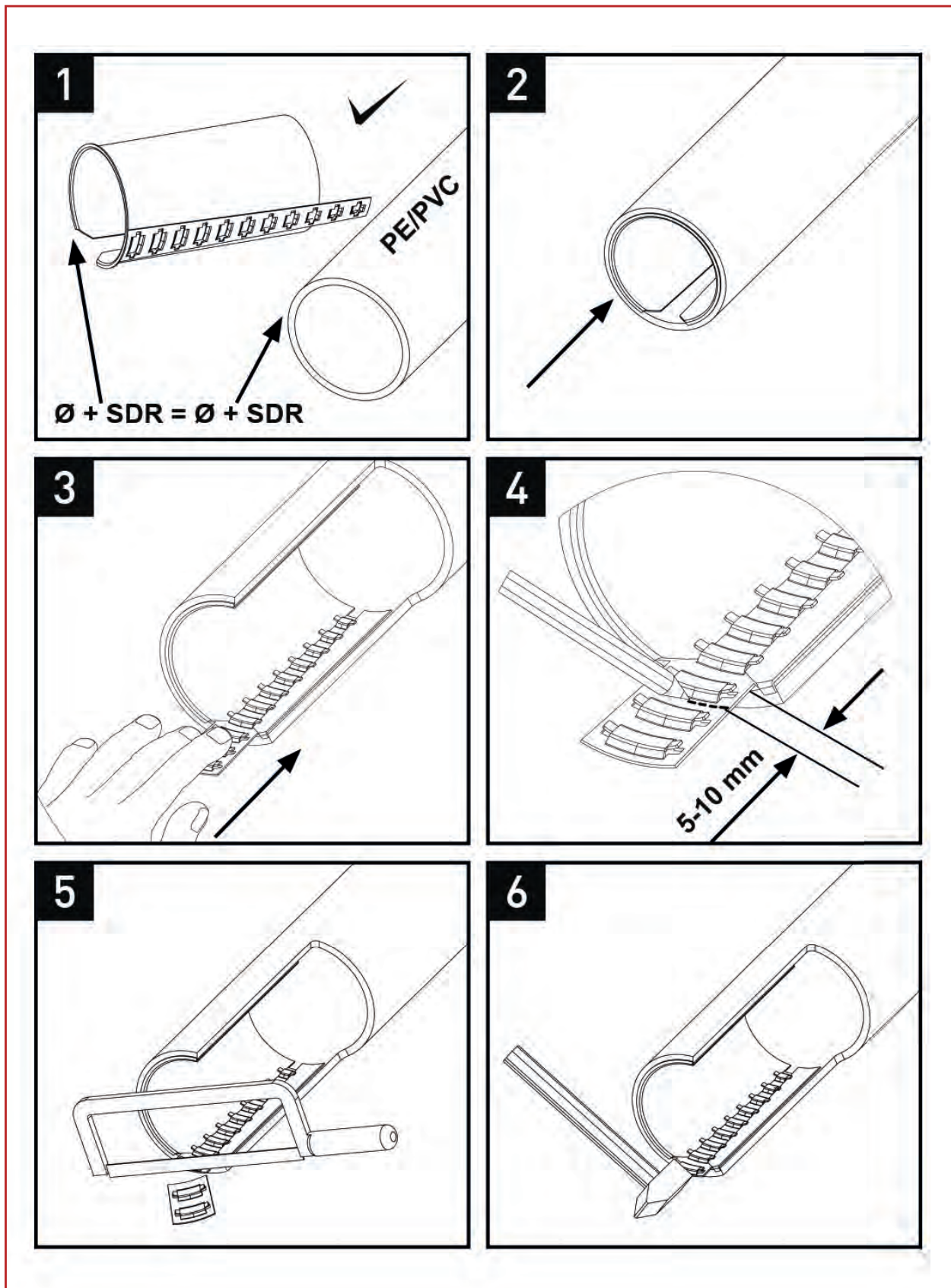
5. Testing the installation



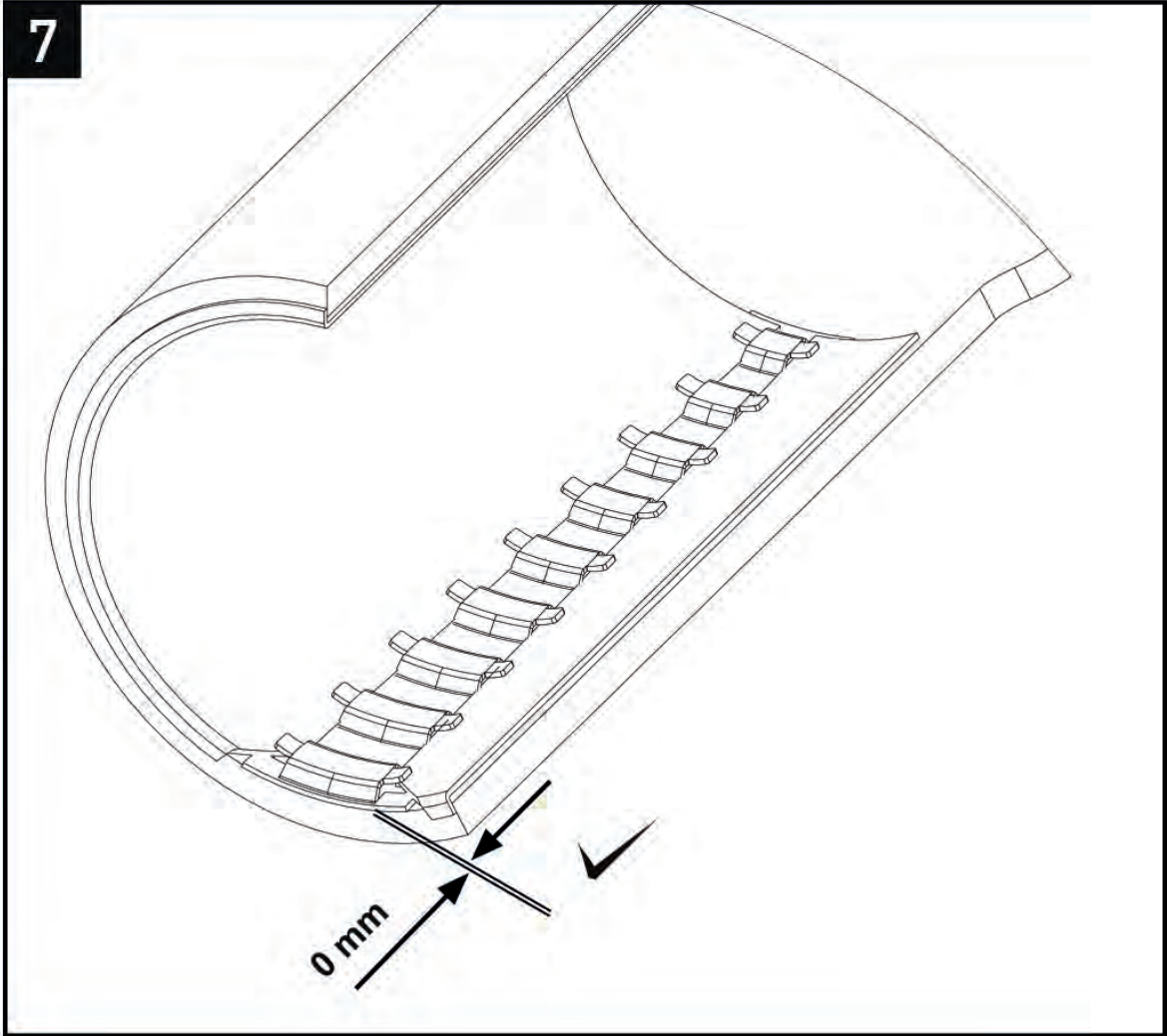
Always take safety precautions.

- 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 Stiffeners



7



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 DN600, 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 pipe outside diameters per nominal diameter. (see table).

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.

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 cast 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

Ranges

DN-size	Min. range (mm)	Max. range (mm)	Min. length coupling (mm)	Min. length flange adaptor (mm)
DN50	46	71	209	179
DN65	63	90	220	187
DN80	84	105	234	183
DN100	104	132	230	181
DN125	132	155	246	196
DN150	154	192	242	194
DN200	192	232	297	224
DN225	230	268	342	240
DN250	267	310	354	260
DN300	315	356	465	336
DN350	352	393	465	336
DN400	392	433	465	336
DN425	432	464	530	365
DN450	450	482	530	365
DN475	481	513	530	365
DN500	500	532	530	365
DN550	548	580	530	365
DN600	605	637	530	365

- 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 cast 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) 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 cast 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	209	179
DN65	63	90	220	187
DN80	84	105	234	183
DN100	104	132	230	181
DN125	132	155	246	196
DN150	154	192	242	194
DN200	192	232	297	224
DN225	230	268	342	240
DN250	267	310	354	260
DN300	315	356	465	336
DN350	352	393	465	336
DN400	392	433	465	336
DN425	432	464	530	365
DN450	450	482	530	365
DN475	481	513	530	365
DN500	500	532	530	365
DN550	548	580	530	365
DN600	605	637	530	365

- 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 cast 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, Nuts and washers:	Bolts, nuts and washers shall be made of stainless steel AISI 304 or AISI 316. Bolts shall have an anti friction PTFE coating to prevent cold-welding due to fretting. Plastic caps on thread to prevent nuts and washers falling off during transport. Stainless steel washer AISI 304 or AISI 316 between nut and lifter bar to prevent galling.
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.

Product range





MULTI/JOINT® 3000 Plus

90



MULTI/JOINT® Accessories

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ST-System fittings

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Multi/Clamp

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W400 / W410 drilling devices

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UNI-Coupling stainless steel couplings

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MULTI/JOINT® 3000 Plus

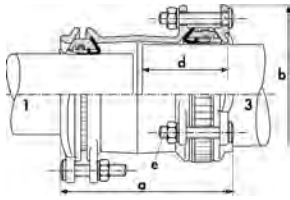
MULTI/JOINT® 3000 Plus (DN50 - DN600)



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

Model:

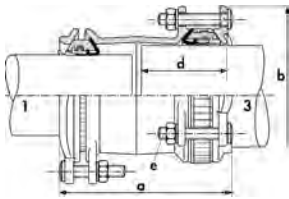
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600



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	4.900
65	709 301 012	1 54 323 060	709 301 312	1 54 323 060	5.800
80	709 301 014	1 54 323 060	709 301 314	1 54 323 060	7.500
100	709 301 016	1 54 323 060	709 301 316	1 54 323 060	9.200
125	709 301 018	1 54 323 060	709 301 318	1 54 323 060	12.000
150	709 301 020	1 54 323 060	709 301 320	1 54 323 060	17.400
200	709 301 024	1 54 323 060	709 301 324	1 54 323 060	29.800
225	709 301 026	1 54 323 060	709 301 326	1 54 323 060	40.000
250	709 301 028	1 54 323 060	709 301 328	1 54 323 060	44.200
300	709 301 032	1 54 323 060	709 301 332	1 54 323 060	57.400
350	709 301 036	1 54 323 060	709 301 336	1 54 323 060	61.200
400	709 301 040	1 54 323 060	709 301 340	1 54 323 060	86.800
425	709 301 042	1 54 323 070	709 301 342	1 54 323 070	96.800
450	709 301 072	1 54 323 070	709 301 372	1 54 323 070	100.200
475	709 301 073	1 54 323 070	709 301 373	1 54 323 070	98.300
500	709 301 074	1 54 323 070	709 301 374	1 54 323 070	99.900
550	709 301 076	1 54 323 070	709 301 376	1 54 323 070	114.900
600	709 301 078	1 54 323 070	709 301 378	1 54 323 070	146.000

table continued on the next page



DN	a	b	d	e	PN Water	MOP Gas
(mm)	(mm)	(mm)	(mm)	(mm)	(bar)	(bar)
50	209 - 233	164	95	3xM12	25	8
65	220 - 250	186	100	3xM12	25	8
80	234 - 262	204	115	3xM12	25	8
100	230 - 268	236	110	3xM16	25	8
125	246 - 282	264	120	4xM16	25	8
150	242 - 298	304	120	4xM16	25	8
200	297 - 351	354	140	6xM16	25	8
225	342 - 404	386	145	6xM20	25	8
250	354 - 424	432	170	6xM20	25	8
300	384 - 460	495	224	8xM20	25	8
350	384 - 460	533	224	8xM20	25	8
400	384 - 460	570	224	10xM20	25	8
425	530 - 580	623	275	10xM20	16	8
450	530 - 580	641	275	10xM20	16	8
475	530 - 580	672	275	10xM20	16	8
500	530 - 580	691	275	10xM20	16	8
550	530 - 580	739	275	12xM20	16	8
600	530 - 580	796	275	14xM20	16	8



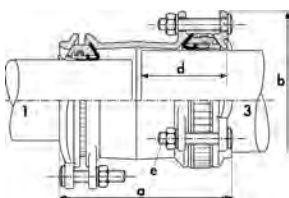
MULTI/JOINT® 3007 Plus Wide Range Coupling, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

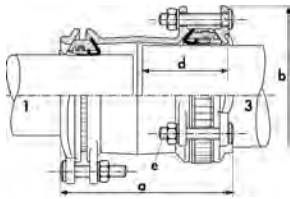
Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas



DN	Range 1	Range 3	NBR / A2 Code	PF	EPDM / A2 Code	PF	Weight (kg)
(mm)	(mm)	(mm)					
50	46 - 71	46 - 71	709 305 210	1 54 323 061	709 305 610	1 54 323 061	4.900
65	63 - 90	63 - 90	709 305 212	1 54 323 061	709 305 612	1 54 323 061	5.800
80	84 - 105	84 - 105	709 305 214	1 54 323 061	709 305 614	1 54 323 061	7.500
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	12.000
150	154 - 192	154 - 192	709 305 220	1 54 323 061	709 305 620	1 54 323 061	17.400
200	192 - 232	192 - 232	709 305 224	1 54 323 061	709 305 624	1 54 323 061	29.800
225	230 - 268	230 - 268	709 305 226	1 54 323 061	709 305 626	1 54 323 061	40.000
250	267 - 310	267 - 310	709 305 228	1 54 323 061	709 305 628	1 54 323 061	44.200
300	315 - 356	315 - 356	709 305 232	1 54 323 061	709 305 632	1 54 323 061	57.400
350	352 - 393	352 - 393	709 305 236	1 54 323 061	709 305 636	1 54 323 061	61.200
400	392 - 433	392 - 433	709 305 240	1 54 323 061	709 305 640	1 54 323 061	86.800
425	432 - 464	432 - 464	709 305 242	1 54 323 071	709 305 642	1 54 323 071	96.800
450	450 - 482	450 - 482	709 305 272	1 54 323 071	709 305 672	1 54 323 071	100.200
475	481 - 513	481 - 513	709 305 273	1 54 323 071	709 305 673	1 54 323 071	98.300
500	500 - 532	500 - 532	709 305 274	1 54 323 071	709 305 674	1 54 323 071	99.900
550	548 - 580	548 - 580	709 305 276	1 54 323 071	709 305 676	1 54 323 071	115.600
600	605 - 637	605 - 637	709 305 278	1 54 323 071	709 305 678	1 54 323 071	146.000

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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	4.900
65	709 305 012	1 54 323 061	709 305 312	1 54 323 061	5.800
80	709 305 014	1 54 323 061	709 305 314	1 54 323 061	7.500
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	12.000
150	709 305 020	1 54 323 061	709 305 320	1 54 323 061	17.400
200	709 305 024	1 54 323 061	709 305 324	1 54 323 061	29.800
225	709 305 026	1 54 323 061	709 305 326	1 54 323 061	40.000
250	709 305 028	1 54 323 061	709 305 328	1 54 323 061	44.200
300	709 305 032	1 54 323 061	709 305 332	1 54 323 061	57.400
350	709 305 036	1 54 323 061	709 305 336	1 54 323 061	61.200
400	709 305 040	1 54 323 061	709 305 340	1 54 323 061	86.800
425	709 305 042	1 54 323 071	709 305 342	1 54 323 071	96.800
450	709 305 072	1 54 323 071	709 305 372	1 54 323 071	100.200
475	709 305 073	1 54 323 071	709 305 373	1 54 323 071	98.300
500	709 305 074	1 54 323 071	709 305 374	1 54 323 071	99.900
550	709 305 076	1 54 323 071	709 305 376	1 54 323 071	115.600
600	709 305 078	1 54 323 071	709 305 378	1 54 323 071	146.000

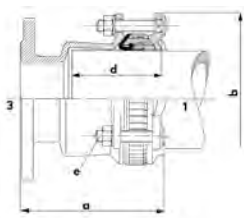
DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	209 - 233	164	95	3xM12	16	8
65	220 - 250	186	100	3xM12	16	8
80	234 - 262	204	115	3xM12	16	8
100	230 - 268	236	110	3xM16	16	8
125	246 - 282	264	120	4xM16	16	8
150	242 - 298	304	120	4xM16	16	8
200	297 - 351	354	140	6xM16	16	8
225	342 - 404	386	145	6xM20	16	8
250	354 - 424	432	170	6xM20	16	8
300	384 - 460	495	224	8xM20	16	8
350	384 - 460	533	224	8xM20	16*	8*
400	384 - 460	570	224	10xM20	16*	8*
425	530 - 580	623	275	10xM20	10	5
450	530 - 580	641	275	10xM20	10	5
475	530 - 580	672	275	10xM20	10	5
500	530 - 580	691	275	10xM20	10	5
550	530 - 580	739	275	12xM20	10	5
600	530 - 580	796	275	14xM20	10	5



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

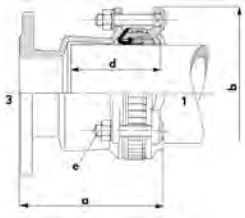
Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600



DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pat- tern	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

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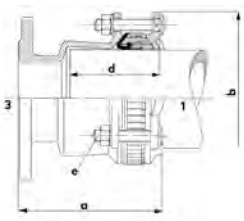


DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	NBR / A2 Code	PF	
125	132 - 155	125	PN16	709 351 218	1 54 323 060	
150	154 - 192	150	PN16	709 351 220	1 54 323 060	
200	192 - 232	200	PN10	709 351 224	1 54 323 060	
200	192 - 232	200	PN16	709 351 225	1 54 323 060	
250	267 - 310	250	PN10	709 351 228	1 54 323 060	
250	267 - 310	250	PN16	709 351 229	1 54 323 060	
300	315 - 356	300	PN10	709 351 232	1 54 323 060	
300	315 - 356	300	PN16	709 351 233	1 54 323 060	
350	352 - 393	350	PN10	709 351 236	1 54 323 060	
350	352 - 393	350	PN16	709 351 237	1 54 323 060	
400	392 - 433	400	PN10	709 351 238	1 54 323 060	
400	392 - 433	400	PN16	709 351 239	1 54 323 060	
NEW	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	
200	709 351 625	1 54 323 060	709 351 025	1 54 323 060	
250	709 351 628	1 54 323 060	709 351 028	1 54 323 060	
250	709 351 629	1 54 323 060	709 351 029	1 54 323 060	
300	709 351 632	1 54 323 060	709 351 032	1 54 323 060	
300	709 351 633	1 54 323 060	709 351 033	1 54 323 060	
350	709 351 636	1 54 323 060	709 351 036	1 54 323 060	
350	709 351 637	1 54 323 060	709 351 037	1 54 323 060	
400	709 351 638	1 54 323 060	709 351 038	1 54 323 060	
400	709 351 639	1 54 323 060	709 351 039	1 54 323 060	
NEW	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	5.600	
65	709 351 312	1 54 323 060	5.400	
80	709 351 314	1 54 323 060	6.700	
100	709 351 316	1 54 323 060	8.000	
125	709 351 318	1 54 323 060	10.800	
150	709 351 320	1 54 323 060	14.800	
200	709 351 324	1 54 323 060	23.600	
200	709 351 325	1 54 323 060	21.700	
250	709 351 328	1 54 323 060	33.200	
250	709 351 329	1 54 323 060	31.100	
300	709 351 332	1 54 323 060	40.800	
300	709 351 333	1 54 323 060	40.500	
350	709 351 336	1 54 323 060	52.100	
350	709 351 337	1 54 323 060	55.200	
400	709 351 338	1 54 323 060	70.800	
400	709 351 339	1 54 323 060	65.100	
NEW	450	709 351 372	1 54 323 070	75.000
	500	709 351 374	1 54 323 070	91.000
	600	709 351 378	1 54 323 070	117.800

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DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50	179 - 194	164	100	3xM12	25	8	4
65	187 - 198	186	95	3xM12	25	8	4
80	183 - 197	204	115	3xM12	25	8	8
100	181 - 200	236	110	3xM16	25	8	8
125	196 - 214	264	120	4xM16	25	8	8
150	194 - 222	304	120	4xM16	25	8	8
200	224 - 251	354	140	6xM16	25	8	8
200	224 - 251	354	140	6xM16	25	8	12
250	260 - 295	432	170	6xM20	25	8	12
250	260 - 295	432	170	6xM20	25	8	12
300	294 - 333	495	224	8xM20	25	8	12
300	294 - 333	495	224	8xM20	25	8	12
350	294 - 333	533	224	8xM20	25	8	16
350	294 - 333	533	224	8xM20	25	8	16
400	294 - 333	570	224	10xM20	25	8	16
400	294 - 333	570	224	10xM20	25	8	16
NEW 450	365 - 390	660	275	10xM20	16	8	16
500	365 - 390	715	275	10xM20	16	8	20
600	365 - 390	840	275	14xM20	16	8	20



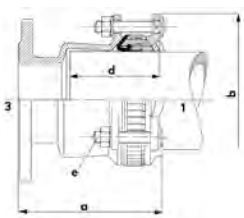
MULTI/JOINT® 3057 Plus Wide Range Flange adaptor, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

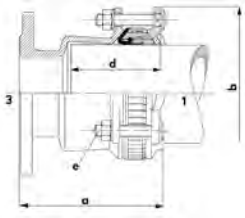
Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas



DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pat- tern	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	709 355 224	1 54 323 061
200	192 - 232	200	PN16	709 355 225	1 54 323 061
250	267 - 310	250	PN10	709 355 228	1 54 323 061
250	267 - 310	250	PN16	709 355 229	1 54 323 061
300	315 - 356	300	PN10	709 355 232	1 54 323 061
300	315 - 356	300	PN16	709 355 233	1 54 323 061
350	352 - 393	350	PN10	709 355 236	1 54 323 061
350	352 - 393	350	PN16	709 355 237	1 54 323 061
400	392 - 433	400	PN10	709 355 238	1 54 323 061
400	392 - 433	400	PN16	709 355 239	1 54 323 061
NEW 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

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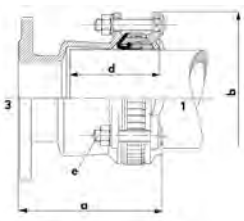


DN (mm)	EPDM / A2 Code	PF	NBR / A4 Code	PF
50	709 355 610	1 54 323 061	709 355 010	1 54 323 061
65	709 355 612	1 54 323 061	709 355 012	1 54 323 061
80	709 355 614	1 54 323 061	709 355 014	1 54 323 061
100	709 355 616	1 54 323 061	709 355 016	1 54 323 061
125	709 355 618	1 54 323 061	709 355 018	1 54 323 061
150	709 355 620	1 54 323 061	709 355 020	1 54 323 061
200	709 355 624	1 54 323 061	709 355 024	1 54 323 061
200	709 355 625	1 54 323 061	709 355 025	1 54 323 061
250	709 355 628	1 54 323 061	709 355 028	1 54 323 061
250	709 355 629	1 54 323 061	709 355 029	1 54 323 061
300	709 355 632	1 54 323 061	709 355 032	1 54 323 061
300	709 355 633	1 54 323 061	709 355 033	1 54 323 061
350	709 355 636	1 54 323 061	709 355 036	1 54 323 061
350	709 355 637	1 54 323 061	709 355 037	1 54 323 061
400	709 355 638	1 54 323 061	709 355 038	1 54 323 061
400	709 355 639	1 54 323 061	709 355 039	1 54 323 061
NEW 450	709 355 672	1 54 323 071	709 355 072	1 54 323 071
500	709 355 674	1 54 323 071	709 355 074	1 54 323 071
600	709 355 678	1 54 323 071	709 355 078	1 54 323 071

DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50	709 355 310	1 54 323 061	5.600
65	709 355 312	1 54 323 061	5.400
80	709 355 314	1 54 323 061	6.700
100	709 355 316	1 54 323 061	8.000
125	709 355 318	1 54 323 061	10.800
150	709 355 320	1 54 323 061	14.800
200	709 355 324	1 54 323 061	23.600
200	709 355 325	1 54 323 061	21.700
250	709 355 328	1 54 323 061	33.200
250	709 355 329	1 54 323 061	31.100
300	709 355 332	1 54 323 061	48.800
300	709 355 333	1 54 323 061	40.500
350	709 355 336	1 54 323 061	52.100
350	709 355 337	1 54 323 061	55.200
400	709 355 338	1 54 323 061	70.800
400	709 355 339	1 54 323 061	65.100
NEW 450	709 355 372	1 54 323 071	75.000
500	709 355 374	1 54 323 071	91.000
600	709 355 378	1 54 323 071	118.100

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50	179 - 194	164	100	3xM12	16	8	4
65	187 - 198	186	95	3xM12	16	8	4
80	183 - 197	204	115	3xM12	16	8	8
100	181 - 200	236	110	3xM16	16	8	8
125	196 - 214	264	120	4xM16	16	8	8
150	194 - 222	304	120	4xM16	16	8	8
200	224 - 251	354	140	6xM16	16	8	8
200	224 - 251	354	140	6xM16	16	8	12
250	260 - 295	432	170	6xM20	16	8	12
250	260 - 295	432	170	6xM20	16	8	12
300	294 - 333	495	224	8xM20	16	8	12
300	294 - 333	495	224	8xM20	16	8	12
350	294 - 333	533	224	8xM20	16*	8*	16
350	294 - 333	533	224	8xM20	16*	8*	16
400	294 - 333	570	224	10xM20	16*	8*	16

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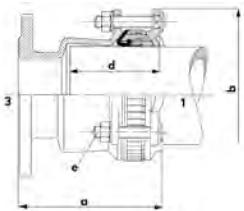
	DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
	400	294 - 333	570	224	10xM20	16*	8*	16
NEW	450	365 - 390	660	275	10xM20	10	5	16
	500	365 - 390	715	275	10xM20	10	5	20
	600	365 - 390	840	275	14xM20	10	5	20



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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

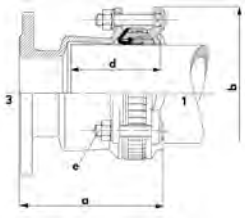


	DN (mm)	DN (inch)	Range 1 (mm)	Range 1 (inch)	Flange 3 (mm)	Flange 3 (inch)	NBR / A2 Code	PF
	80	3	84 - 105	3.307 - 4.133	80	3	709 355 240	1 54 323 061
	100	4	104 - 132	4.094 - 5.196	100	4	709 355 242	1 54 323 061
	150	6	154 - 192	6.062 - 7.559	150	6	709 355 244	1 54 323 061
	200	8	192 - 232	7.559 - 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
	709 355 640	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)
	709 355 340	1 54 323 061	6.900
	709 355 342	1 54 323 061	8.000
	709 355 344	1 54 323 061	15.000
	709 355 346	1 54 323 061	23.400
	709 355 348	1 54 323 061	33.100
	709 355 350	1 54 323 061	42.500
	709 455 394	1 54 323 061	84.400
reduced	709 455 389	1 54 323 071	72.000
reduced	709 455 391	1 54 323 071	80.000

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	a (inch)	b (inch)	d (inch)	e (inch)	PSI Water (psi)	No. of bolt holes flange
	7.205 - 7.756	8.031	4.528	3xM12	232	4
	7.126 - 7.874	9.291	4.331	3xM16	232	8
	7.638 - 8.740	11.969	4.724	4xM16	232	8
	8.819 - 9.882	13.937	5.512	6xM16	232	8
	10.236 - 11.614	17.008	6.693	6xM20	232	12
	11.575 - 13.110	19.488	8.819	8xM20	232	12
	14.016 - 15.551	20.630	10.827	10xM20	150	16
reduced	14.370 - 15.354	24.528	10.827	10xM20	150	16
reduced	14.370 - 15.354	26.457	10.827	10xM20	150	16

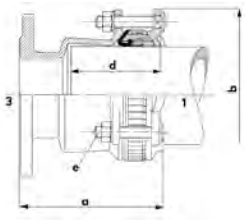
PF 1 54 323 061

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



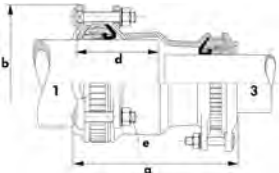
Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600



	DN (mm)	Range 1 (mm)	Flange 3 (mm)	EPDM / A4 Code	Weight (kg)
	50	46 - 71	50	709 355 510	5.600
	65	63 - 90	65	709 355 512	6.500
	80	84 - 105	80	709 355 514	6.500
	100	104 - 132	100	709 355 517	8.600
	150	154 - 192	150	709 355 521	14.000
	200	192 - 232	200	709 355 526	21.700
	250	267 - 310	250	709 355 529	31.100
	300	315 - 356	300	709 355 533	40.500
reduced	125	132 - 155	100	709 455 533	11.800
reduced	125	132 - 155	150	709 455 539	13.200
reduced	225	230 - 268	200	709 455 559	29.700
reduced	225	230 - 268	250	709 455 581	29.700

	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
	179 - 194	164	100	3xM12	16	8	4
	187 - 198	186	95	3xM12	16	8	4
	183 - 197	204	115	3xM12	16	8	4
	181 - 200	236	110	3xM16	16	8	4
	194 - 222	304	120	4xM16	16	8	8
	224 - 251	354	140	6xM16	16	8	8
	260 - 295	432	170	6xM20	16	8	8
	294 - 333	495	224	8xM20	16	8	12
reduced	197 - 215	264	120	4xM16	16	8	4
reduced	276 - 294	264	120	4xM16	16	8	8
reduced	274 - 301	386	190	6xM20	16	8	8
reduced	212 - 239	386	130	6xM20	16	8	8



MULTI/JOINT® 3100 Plus Wide Range Reduced Coupling, non restraint

Model:

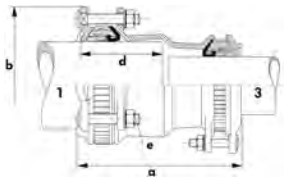
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600

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
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			
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	8.000
100 - 125	709 401 032	1 54 323 060	709 401 332	1 54 323 060	11.600
100 - 150	709 401 036	1 54 323 060	709 401 336	1 54 323 060	15.200
125 - 150	709 401 038	1 54 323 060	709 401 338	1 54 323 060	14.400
150 - 200	709 401 048	1 54 323 060	709 401 348	1 54 323 060	24.800
200 - 225	709 401 078	1 54 323 060	709 401 378	1 54 323 060	37.000
225 - 250	709 401 082	1 54 323 060	709 401 382	1 54 323 060	44.200
250 - 300	709 401 086	1 54 323 060	709 401 386	1 54 323 060	49.000
300 - 350	709 401 088	1 54 323 060	709 401 388	1 54 323 060	54.000
300 - 400	709 401 089	1 54 323 060	709 401 389	1 54 323 060	69.260
350 - 400	709 401 090	1 54 323 060	709 401 390	1 54 323 060	65.200
400 - 425	709 401 093	1 54 323 070	709 401 393	1 54 323 070	85.900
400 - 450	709 401 092	1 54 323 070	709 401 392	1 54 323 070	92.000
425 - 475	709 401 095	1 54 323 070	709 401 395	1 54 323 070	99.700
450 - 500	709 401 094	1 54 323 070	709 401 394	1 54 323 070	106.700
500 - 550	709 401 096	1 54 323 070	709 401 396	1 54 323 070	112.900
550 - 600	709 401 097	1 54 323 070	709 401 397	1 54 323 070	130.000

DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50 - 65	242 - 268	186	95	3xM12/3xM12	25	8
65 - 80	242 - 268	204	115	3xM12/3xM12	25	8
80 - 100	232 - 265	236	110	3xM12/3xM16	25	8
100 - 125	238 - 275	264	120	3xM16/4xM16	25	8

table continued on the next page



DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
100 - 150	276 - 323	304	120	4xM16/4xM16	25	8
125 - 150	276 - 322	304	120	4xM16/4xM16	25	8
150 - 200	265 - 321	354	120	4xM16/6xM16	25	8
200 - 225	340 - 398	386	145	6xM16/6xM20	25	8
225 - 250	358 - 424	432	170	6xM20/6xM20	25	8
250 - 300	356 - 426	490	170	6xM20/8xM20	25	8
300 - 350	446 - 530	534	225	8xM20/8xM20	25	8
300 - 400	462 - 546	571	240	8xM20/10xM20	25	8
350 - 400	470 - 554	574	240	8xM20/10xM20	25	8
400 - 425	500 - 550	623	275	10xM20/10xM20	16	8
400 - 450	500 - 550	641	275	10xM20/10xM20	16	8
425 - 475	555 - 605	672	275	10xM20/10xM20	16	8
450 - 500	555 - 605	691	275	10xM20/10xM20	16	8
500 - 550	550 - 600	739	275	12xM20/10xM20	16	8
550 - 600	550 - 600	796	275	12xM20/14xM20	16	8



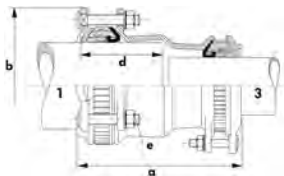
MULTI/JOINT® 3107 Plus Wide Range Reduced Coupling, restraint, Uni/Fiksers

Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

Note:

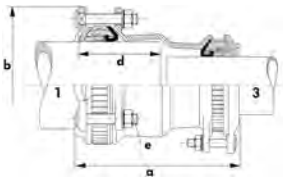
* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas



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
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

DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
50 - 65	709 405 618	1 54 323 061	5.500	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

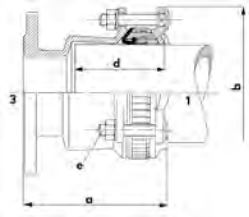
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DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
100 - 125	709 405 632	1 54 323 061	11.600	709 405 032	1 54 323 061
100 - 150	709 405 636	1 54 323 061	15.200	709 405 036	1 54 323 061
125 - 150	709 405 638	1 54 323 061	14.400	709 405 038	1 54 323 061
150 - 200	709 405 648	1 54 323 061	24.800	709 405 048	1 54 323 061
200 - 225	709 405 678	1 54 323 061	37.000	709 405 078	1 54 323 061
225 - 250	709 405 682	1 54 323 061	44.200	709 405 082	1 54 323 061
250 - 300	709 405 686	1 54 323 061	49.000	709 405 086	1 54 323 061
300 - 350	709 405 688	1 54 323 061	54.000	709 405 088	1 54 323 061
300 - 400	709 405 689	1 54 323 061	69.680	709 405 089	1 54 323 061
350 - 400	709 405 690	1 54 323 061	65.200	709 405 090	1 54 323 061
400 - 425	709 405 693	1 54 323 071	85.900	709 405 093	1 54 323 071
400 - 450	709 405 692	1 54 323 071	92.000	709 405 092	1 54 323 071
425 - 475	709 405 695	1 54 323 071	100.300	709 405 095	1 54 323 071
450 - 500	709 405 694	1 54 323 071	107.200	709 405 094	1 54 323 071
500 - 550	709 405 696	1 54 323 071	113.500	709 405 096	1 54 323 071
550 - 600	709 405 697	1 54 323 071	130.000	709 405 097	1 54 323 071

DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 65	709 405 318	1 54 323 061	5.500
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	11.600
100 - 150	709 405 336	1 54 323 061	15.200
125 - 150	709 405 338	1 54 323 061	14.400
150 - 200	709 405 348	1 54 323 061	24.800
200 - 225	709 405 378	1 54 323 061	37.000
225 - 250	709 405 382	1 54 323 061	44.200
250 - 300	709 405 386	1 54 323 061	49.000
300 - 350	709 405 388	1 54 323 061	54.000
300 - 400	709 405 389	1 54 323 061	69.680
350 - 400	709 405 390	1 54 323 061	65.200
400 - 425	709 405 393	1 54 323 071	85.900
400 - 450	709 405 392	1 54 323 071	92.000
425 - 475	709 405 395	1 54 323 071	100.300
450 - 500	709 405 394	1 54 323 071	107.200
500 - 550	709 405 396	1 54 323 071	113.500
550 - 600	709 405 397	1 54 323 071	130.000

DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50 - 65	242 - 268	186	95	3xM12/3xM12	16	8
65 - 80	242 - 268	204	115	3xM12/3xM12	16	8
80 - 100	232 - 265	236	110	3xM12/3xM16	16	8
100 - 125	238 - 275	264	120	3xM16/4xM16	16	8
100 - 150	276 - 323	304	120	3xM16/4xM16	16	8
125 - 150	276 - 322	304	120	4xM16/4xM16	16	8
150 - 200	265 - 321	354	120	4xM16/6xM16	16	8
200 - 225	340 - 398	386	145	6xM16/6xM20	16	8
225 - 250	358 - 424	432	170	6xM20/6xM20	16	8
250 - 300	356 - 426	490	170	6xM20/8xM20	16	8
300 - 350	446 - 530	534	225	8xM20/8xM20	16*	8*
300 - 400	462 - 546	571	240	8xM20/10xM20	16*	8*
350 - 400	470 - 554	574	240	8xM20/10xM20	16*	8*
400 - 425	500 - 550	623	275	10xM20/10xM20	10	5
400 - 450	500 - 550	641	275	10xM20/10xM20	10	5
425 - 475	555 - 605	672	275	10xM20/10xM20	10	5
450 - 500	555 - 605	691	275	10xM20/10xM20	10	5
500 - 550	550 - 600	739	275	12xM20/10xM20	10	5
550 - 600	550 - 600	796	275	12xM20/14xM20	10	5



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

Model:

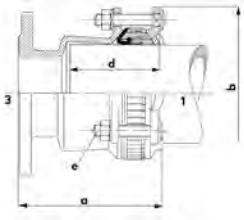
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600

DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pat- tern	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	709 451 278	1 54 323 060
225 - 200	230 - 268	200	PN16	709 451 279	1 54 323 060
225 - 250	230 - 268	250	PN10	709 451 280	1 54 323 060
225 - 250	230 - 268	250	PN16	709 451 281	1 54 323 060
300 - 250	315 - 356	250	PN10	709 451 286	1 54 323 060
300 - 250	315 - 356	250	PN16	709 451 287	1 54 323 060
350 - 300	352 - 393	300	PN10	709 451 284	1 54 323 060
350 - 300	352 - 393	300	PN16	709 451 285	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 - 200	709 451 679	1 54 323 060	709 451 079	1 54 323 060
225 - 250	709 451 680	1 54 323 060	709 451 080	1 54 323 060
225 - 250	709 451 681	1 54 323 060	709 451 081	1 54 323 060
300 - 250	709 451 686	1 54 323 060	709 451 086	1 54 323 060
300 - 250	709 451 687	1 54 323 060	709 451 087	1 54 323 060
350 - 300	709 451 684	1 54 323 060	709 451 084	1 54 323 060
350 - 300	709 451 685	1 54 323 060	709 451 085	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

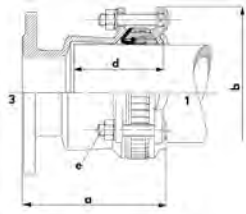
DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 40	709 451 308	1 54 323 060	5.000
65 - 80	709 451 318	1 54 323 060	6.700
100 - 80	709 451 324	1 54 323 060	7.900
125 - 100	709 451 332	1 54 323 060	9.800

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DN-DN (mm)	EPDM / A4 Code	PN	Weight (kg)
125 - 150	709 451 338	1 54 323 060	11.400
150 - 100	709 451 336	1 54 323 060	13.700
200 - 150	709 451 339	1 54 323 060	20.400
225 - 200	709 451 378	1 54 323 060	30.200
225 - 200	709 451 379	1 54 323 060	29.000
225 - 250	709 451 380	1 54 323 060	27.700
225 - 250	709 451 381	1 54 323 060	28.800
300 - 250	709 451 386	1 54 323 060	13.300
300 - 250	709 451 387	1 54 323 060	46.600
350 - 300	709 451 384	1 54 323 060	48.100
350 - 300	709 451 385	1 54 323 060	51.200
425 - 400	709 451 388	1 54 323 070	73.800
450 - 400	709 451 392	1 54 323 070	77.600
475 - 400	709 451 390	1 54 323 070	80.000
550 - 500	709 351 376	1 54 323 070	96.500

DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50 - 40	185 - 200	164	100	3xM12	25	8	4
65 - 80	198 - 210	186	95	3xM12	25	8	8
100 - 80	196 - 215	236	110	3xM16	25	8	8
125 - 100	197 - 215	264	120	4xM16	25	8	8
125 - 150	276 - 294	264	120	4xM16	25	8	8
150 - 100	200 - 228	304	120	4xM16	25	8	8
200 - 150	249 - 276	354	130	6xM16	25	8	8
225 - 200	274 - 301	386	190	6xM20	25	8	8
225 - 200	274 - 301	386	190	6xM20	25	8	12
225 - 250	212 - 239	386	130	6xM20	25	8	12
225 - 250	212 - 239	386	130	6xM20	25	8	12
300 - 250	320 - 355	490	155	8xM20	25	8	12
300 - 250	320 - 355	490	155	8xM20	25	8	12
350 - 300	304 - 346	534	225	8xM20	25	8	12
350 - 300	304 - 346	534	225	8xM20	25	8	12
425 - 400	365 - 390	623	275	10xM20	16	8	16
450 - 400	365 - 390	641	275	10xM20	16	8	16
475 - 400	390 - 415	672	275	10xM20	16	8	16
550 - 500	365 - 390	739	275	12xM20	16	8	20



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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

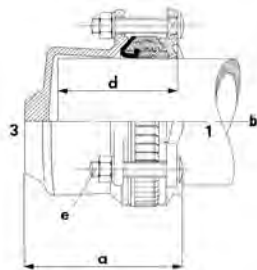
DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pat- tern	NBR / A2 Code	PF
50 - 40	46 - 71	40	PN16	709 455 208	1 54 323 061
65 - 80	63 - 90	80	PN16	709 455 218	1 54 323 061
100 - 80	104 - 132	80	PN16	709 455 224	1 54 323 061
125 - 100	132 - 155	100	PN16	709 455 232	1 54 323 061
125 - 150	132 - 155	150	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	709 455 278	1 54 323 061
225 - 200	230 - 268	200	PN16	709 455 279	1 54 323 061
225 - 250	230 - 268	250	PN10	709 455 280	1 54 323 061
225 - 250	230 - 268	250	PN16	709 455 281	1 54 323 061
300 - 250	315 - 356	250	PN10	709 455 286	1 54 323 061
300 - 250	315 - 356	250	PN16	709 455 287	1 54 323 061
350 - 300	352 - 393	300	PN10	709 455 284	1 54 323 061
350 - 300	352 - 393	300	PN16	709 455 285	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

DN-DN (mm)	EPDM / A2 Code	PF	Weight (kg)	NBR / A4 Code	PF
50 - 40	709 455 608	1 54 323 061	5.000	709 455 008	1 54 323 061
65 - 80	709 455 618	1 54 323 061	6.700	709 455 018	1 54 323 061
100 - 80	709 455 624	1 54 323 061	7.900	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	11.400	709 455 038	1 54 323 061
150 - 100	709 455 636	1 54 323 061	13.700	709 455 036	1 54 323 061
200 - 150	709 455 639	1 54 323 061	20.400	709 455 039	1 54 323 061
225 - 200	709 455 678	1 54 323 061	30.200	709 455 078	1 54 323 061
225 - 200	709 455 679	1 54 323 061	29.000	709 455 079	1 54 323 061
225 - 250	709 455 680	1 54 323 061	27.700	709 455 080	1 54 323 061
225 - 250	709 455 681	1 54 323 061	28.800	709 455 081	1 54 323 061
300 - 250	709 455 686	1 54 323 061	46.600	709 455 086	1 54 323 061
300 - 250	709 455 687	1 54 323 061	46.600	709 455 087	1 54 323 061
350 - 300	709 455 684	1 54 323 061	48.100	709 455 084	1 54 323 061
350 - 300	709 455 685	1 54 323 061	51.200	709 455 085	1 54 323 061
425 - 400	709 455 688	1 54 323 071	73.800	709 455 088	1 54 323 071
450 - 400	709 455 692	1 54 323 071	77.600	709 455 092	1 54 323 071
475 - 400	709 455 690	1 54 323 071	80.000	709 455 090	1 54 323 071
550 - 500	709 355 676	1 54 323 071	96.800	709 355 076	1 54 323 071

DN-DN (mm)	EPDM / A4 Code	PF	Weight (kg)
50 - 40	709 455 308	1 54 323 061	5.000
65 - 80	709 455 318	1 54 323 061	6.700
100 - 80	709 455 324	1 54 323 061	7.900
125 - 100	709 455 332	1 54 323 061	9.800
125 - 150	709 455 338	1 54 323 061	11.400
150 - 100	709 455 336	1 54 323 061	13.700
200 - 150	709 455 339	1 54 323 061	20.400
225 - 200	709 455 378	1 54 323 061	30.200
225 - 200	709 455 379	1 54 323 061	29.000
225 - 250	709 455 380	1 54 323 061	27.700
225 - 250	709 455 381	1 54 323 061	28.800
300 - 250	709 455 386	1 54 323 061	46.600
300 - 250	709 455 387	1 54 323 061	46.600
350 - 300	709 455 384	1 54 323 061	48.100
350 - 300	709 455 385	1 54 323 061	51.200
425 - 400	709 455 388	1 54 323 071	73.800
450 - 400	709 455 392	1 54 323 071	77.600
475 - 400	709 455 390	1 54 323 071	80.000
550 - 500	709 355 376	1 54 323 071	96.800

DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50 - 40	185 - 200	164	100	3xM12	16	8	4
65 - 80	198 - 210	186	95	3xM12	16	8	8
100 - 80	196 - 215	236	110	3xM16	16	8	8
125 - 100	197 - 215	264	120	4xM16	16	8	8
125 - 150	276 - 294	264	120	4xM16	16	8	8
150 - 100	200 - 228	304	120	4xM16	16	8	8
200 - 150	249 - 276	354	130	6xM16	16	8	8
225 - 200	274 - 301	386	190	6xM20	16	8	8
225 - 200	274 - 301	386	190	6xM20	16	8	12
225 - 250	212 - 239	386	130	6xM20	16	8	12
225 - 250	212 - 239	386	130	6xM20	16	8	12
300 - 250	320 - 355	490	155	8xM20	16	8	12
300 - 250	320 - 355	490	155	8xM20	16	8	12
350 - 300	304 - 346	534	225	8xM20	16*	8*	12
350 - 300	304 - 346	534	225	8xM20	16*	8*	12
425 - 400	365 - 390	623	275	10xM20	10	5	16
450 - 400	365 - 390	641	275	10xM20	10	5	16
475 - 400	390 - 415	672	275	10xM20	10	5	16
550 - 500	365 - 390	739	275	12xM20	10	5	20

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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

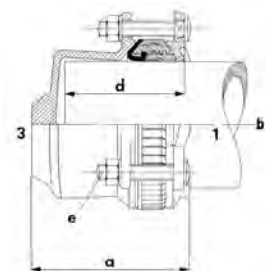
Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

DN (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	46 - 71	709 375 210	709 375 610	3.500	709 375 010	709 375 310	3.500
65	63 - 90	709 375 212	709 375 612	4.100	709 375 012	709 375 312	4.100
80	84 - 105	709 375 214	709 375 614	5.100	709 375 014	709 375 314	5.100
100	104 - 132	709 375 216	709 375 616	5.800	709 375 016	709 375 316	5.800
125	132 - 155	709 375 218	709 375 618	7.800	709 375 018	709 375 318	7.800
150	154 - 192	709 375 220	709 375 620	10.700	709 375 020	709 375 320	10.700
200	192 - 232	709 375 224	709 375 624	11.200	709 375 024	709 375 324	11.200
225	230 - 268	709 375 226	709 375 626	17.800	709 375 026	709 375 326	17.800
250	267 - 310	709 375 228	709 375 628	27.100	709 375 028	709 375 328	27.100
300	315 - 356	709 375 232	709 375 632	34.400	709 375 032	709 375 332	34.400
400	392 - 433	709 375 234	709 375 634	43.100	709 375 034	709 375 334	43.100

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	115 - 130	164	100	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
100	144 - 163	236	110	3xM16	16	8
125	151 - 169	264	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
200	180 - 207	354	140	6xM16	16	8
225	211 - 242	386	145	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
300	219 - 254	490	170	8xM20	16	8
400	253 - 295	574	205	10xM20	16*	8*

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



Model:

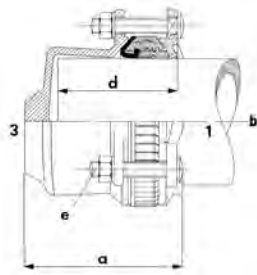
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

DN (mm)	Range 1 (mm)	Rp (inch)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
50	46 - 71	¾	709 385 204	709 385 604	3.500
50	46 - 71	1	709 385 205	709 385 605	3.500
50	46 - 71	1 ¼	709 385 206	709 385 606	3.500
50	46 - 71	1 ½	709 385 207	709 385 607	3.500
50	46 - 71	2	709 385 208	709 385 608	3.500
65	63 - 90	¾	709 385 209	709 385 609	4.100
65	63 - 90	1	709 385 210	709 385 610	4.100
65	63 - 90	1 ¼	709 385 211	709 385 611	4.100
65	63 - 90	1 ½	709 385 212	709 385 612	4.100
65	63 - 90	2	709 385 213	709 385 613	4.100
80	84 - 105	¾	709 385 214	709 385 614	5.100
80	84 - 105	1	709 385 215	709 385 615	5.100
80	84 - 105	1 ¼	709 385 216	709 385 616	5.100
80	84 - 105	1 ½	709 385 217	709 385 617	5.100
80	84 - 105	2	709 385 218	709 385 618	5.100
100	104 - 132	¾	709 385 219	709 385 619	6.500
100	104 - 132	1	709 385 220	709 385 620	6.500
100	104 - 132	1 ¼	709 385 221	709 385 621	6.500
100	104 - 132	1 ½	709 385 222	709 385 622	6.500
100	104 - 132	2	709 385 223	709 385 623	6.500
125	132 - 155	¾	709 385 224	709 385 624	7.800
125	132 - 155	1	709 385 225	709 385 625	7.800
125	132 - 155	1 ¼	709 385 226	709 385 626	7.800
125	132 - 155	1 ½	709 385 227	709 385 627	7.800
125	132 - 155	2	709 385 228	709 385 628	7.800
150	154 - 192	¾	709 385 229	709 385 629	9.600
150	154 - 192	1	709 385 230	709 385 630	9.600
150	154 - 192	1 ¼	709 385 231	709 385 631	9.600
150	154 - 192	1 ½	709 385 232	709 385 632	9.600
150	154 - 192	2	709 385 233	709 385 633	9.600
200	192 - 232	¾	709 385 234	709 385 634	18.300
200	192 - 232	1	709 385 235	709 385 635	18.300
200	192 - 232	1 ¼	709 385 236	709 385 636	18.300
200	192 - 232	1 ½	709 385 237	709 385 637	18.300
200	192 - 232	2	709 385 238	709 385 638	18.300
225	230 - 268	¾	709 385 249	709 385 649	20.900
225	230 - 268	1	709 385 250	709 385 650	20.900
225	230 - 268	1 ¼	709 385 251	709 385 651	20.900
225	230 - 268	1 ½	709 385 252	709 385 652	20.900
225	230 - 268	2	709 385 253	709 385 653	20.900
250	267 - 310	¾	709 385 239	709 385 639	27.100
250	267 - 310	1	709 385 240	709 385 640	27.100
250	267 - 310	1 ¼	709 385 241	709 385 641	27.100
250	267 - 310	1 ½	709 385 242	709 385 642	27.100

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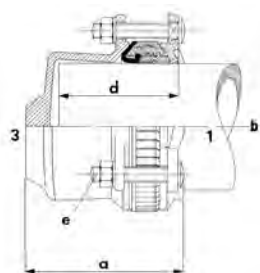


DN (mm)	Range 1 (mm)	Rp (inch)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
250	267 - 310	2	709 385 243	709 385 643	27.100
300	315 - 356	¾	709 385 244	709 385 644	34.400
300	315 - 356	1	709 385 245	709 385 645	34.400
300	315 - 356	1 ¼	709 385 246	709 385 646	34.400
300	315 - 356	1 ½	709 385 247	709 385 647	34.400
300	315 - 356	2	709 385 248	709 385 648	34.400
400	392 - 433	¾	709 385 254	709 385 654	43.100
400	392 - 433	1	709 385 255	709 385 655	43.100
400	392 - 433	1 ¼	709 385 256	709 385 656	43.100
400	392 - 433	1 ½	709 385 257	709 385 657	43.100
400	392 - 433	2	709 385 258	709 385 658	43.100

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	115 - 130	164	100	3xM12	16.0	8
50	115 - 130	164	100	3xM12	16.0	8
50	115 - 130	164	100	3xM12	16.0	8
50	115 - 130	164	100	3xM12	16.0	8
50	115 - 130	164	100	3xM12	16.0	8
65	145 - 157	186	95	3xM12	16.0	8
65	145 - 157	186	95	3xM12	16.0	8
65	145 - 157	186	95	3xM12	16.0	8
65	145 - 157	186	95	3xM12	16.0	8
65	145 - 157	186	95	3xM12	16.0	8
80	142 - 156	204	115	3xM12	16.0	8
80	142 - 156	204	115	3xM12	16.0	8
80	142 - 156	204	115	3xM12	16.0	8
80	142 - 156	204	115	3xM12	16.0	8
80	142 - 156	204	115	3xM12	16.0	8
100	144 - 163	236	110	3xM16	16.0	8
100	144 - 163	236	110	3xM16	16.0	8
100	144 - 163	236	110	3xM16	16.0	8
100	144 - 163	236	110	3xM16	16	8
100	144 - 163	236	110	3xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8

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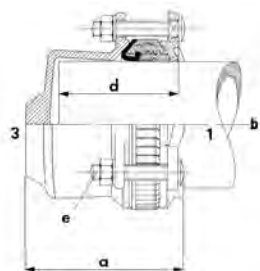
PF 1 54 323 061



DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
300	219 - 254	490	170	8xM20	16	8
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*

PF 1 54 323 061

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



Model:

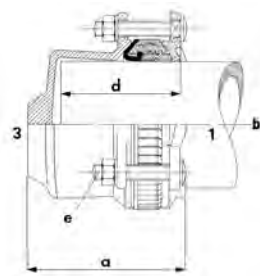
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

DN (mm)	Range 1 (mm)	Rp (inch)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	46 - 71	¾	709 385 004	709 385 304	3.500
50	46 - 71	1	709 385 005	709 385 305	3.500
50	46 - 71	1 ¼	709 385 006	709 385 306	3.500
50	46 - 71	1 ½	709 385 007	709 385 307	3.500
50	46 - 71	2	709 385 008	709 385 308	3.500
65	63 - 90	¾	709 385 009	709 385 309	4.100
65	63 - 90	1	709 385 010	709 385 310	4.100
65	63 - 90	1 ¼	709 385 011	709 385 311	4.100
65	63 - 90	1 ½	709 385 012	709 385 312	4.100
65	63 - 90	2	709 385 013	709 385 313	4.100
80	84 - 105	¾	709 385 014	709 385 314	5.100
80	84 - 105	1	709 385 015	709 385 315	5.100
80	84 - 105	1 ¼	709 385 016	709 385 316	5.100
80	84 - 105	1 ½	709 385 017	709 385 317	5.100
80	84 - 105	2	709 385 018	709 385 318	5.100
100	104 - 132	¾	709 385 019	709 385 319	6.500
100	104 - 132	1	709 385 020	709 385 320	6.500
100	104 - 132	1 ¼	709 385 021	709 385 321	6.500
100	104 - 132	1 ½	709 385 022	709 385 322	6.500
100	104 - 132	2	709 385 023	709 385 323	6.500
125	132 - 155	¾	709 385 024	709 385 324	7.800
125	132 - 155	1	709 385 025	709 385 325	7.800
125	132 - 155	1 ¼	709 385 026	709 385 326	7.800
125	132 - 155	1 ½	709 385 027	709 385 327	7.800
125	132 - 155	2	709 385 028	709 385 328	7.800
150	154 - 192	¾	709 385 029	709 385 329	9.600
150	154 - 192	1	709 385 030	709 385 330	9.600
150	154 - 192	1 ¼	709 385 031	709 385 331	9.600
150	154 - 192	1 ½	709 385 032	709 385 332	9.600
150	154 - 192	2	709 385 033	709 385 333	9.600

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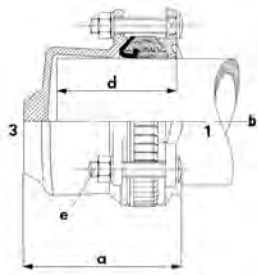


DN (mm)	Range 1 (mm)	Rp (inch)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
200	192 - 232	¾	709 385 034	709 385 334	18.300
200	192 - 232	1	709 385 035	709 385 335	18.300
200	192 - 232	1 ¼	709 385 036	709 385 336	18.300
200	192 - 232	1 ½	709 385 037	709 385 337	18.300
200	192 - 232	2	709 385 038	709 385 338	18.300
225	230 - 268	¾	709 385 049	709 385 349	20.900
225	230 - 268	1	709 385 050	709 385 350	20.900
225	230 - 268	1 ¼	709 385 051	709 385 351	20.900
225	230 - 268	1 ½	709 385 052	709 385 352	20.900
225	230 - 268	2	709 385 053	709 385 353	20.900
250	267 - 310	¾	709 385 039	709 385 339	27.100
250	267 - 310	1	709 385 040	709 385 340	27.100
250	267 - 310	1 ¼	709 385 041	709 385 341	27.100
250	267 - 310	1 ½	709 385 042	709 385 342	27.100
250	267 - 310	2	709 385 043	709 385 343	27.100
300	315 - 356	¾	709 385 044	709 385 344	34.400
300	315 - 356	1	709 385 045	709 385 345	34.400
300	315 - 356	1 ¼	709 385 046	709 385 346	34.400
300	315 - 356	1 ½	709 385 047	709 385 347	34.400
300	315 - 356	2	709 385 048	709 385 348	34.400
400	392 - 433	¾	709 385 054	709 385 354	43.100
400	392 - 433	1	709 385 055	709 385 355	43.100
400	392 - 433	1 ¼	709 385 056	709 385 356	43.100
400	392 - 433	1 ½	709 385 057	709 385 357	43.100
400	392 - 433	2	709 385 058	709 385 358	43.100

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	115 - 130	164	100	3xM12	16	8
50	115 - 130	164	100	3xM12	16	8
50	115 - 130	164	100	3xM12	16	8
50	115 - 130	164	100	3xM12	16	8
50	115 - 130	164	100	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
65	145 - 157	186	95	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
80	142 - 156	204	115	3xM12	16	8
100	144 - 163	236	110	3xM16	16	8
100	144 - 163	236	110	3xM16	16	8
100	144 - 163	236	110	3xM16	16	8
100	144 - 163	236	110	3xM16	16	8
100	144 - 163	236	110	3xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
125	151 - 169	264	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
150	149 - 177	304	120	4xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8
200	180 - 207	354	140	6xM16	16	8

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PF 1 54 323 061



DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
225	211 - 242	386	145	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
250	214 - 249	432	170	6xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
300	219 - 254	490	170	8xM20	16	8
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*
400	253 - 295	574	205	10xM20	16*	8*

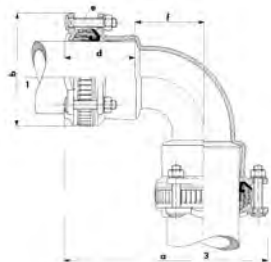
PF 1 54 323 060

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



Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600

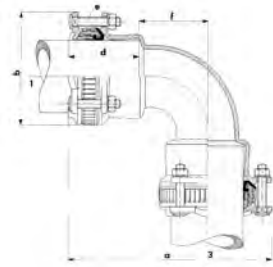


DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	EPDM / A2 Code	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	84 - 105	84 - 105	709 471 214	709 471 614	709 471 014	709 471 314	10.200
100	104 - 132	104 - 132	709 471 216	709 471 616	709 471 016	709 471 316	13.600
150	154 - 192	154 - 192	709 471 220	709 471 620	709 471 020	709 471 320	26.300

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	f (mm)	PN Water (bar)	MOP Gas (bar)
80	291 - 315	204	115	3xM12	100	25	8
100	346 - 365	236	110	3xM16	125	25	8
150	417 - 445	304	120	4xM16	175	25	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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

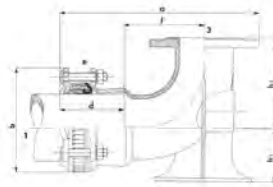
DN (mm)	Range 1 (mm)	Range 3 (mm)	NBR / A2 Code	EPDM / A2 Code	Weight (kg)
80	84 - 105	84 - 105	709 475 214	709 475 614	10.200
100	104 - 132	104 - 132	709 475 216	709 475 616	13.600
150	154 - 192	154 - 192	709 475 220	709 475 620	26.300

DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	709 475 014	709 475 314	10.200
100	709 475 016	709 475 316	13.600
150	709 475 020	709 475 320	26.300

DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	f (mm)	PN Water (bar)	MOP Gas (bar)
80	291 - 315	204	115	3xM12	100	16	8
100	346 - 365	236	110	3xM16	125	16	8
150	417 - 445	304	120	4xM16	175	16	8

PF 1 54 323 061

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

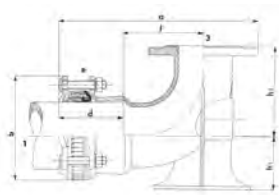


Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- Threaded outlet 2 inch
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

DN-DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pattern	Rp (inch)
50 - 80	46 - 71	80	PN16	2
65 - 80	63 - 90	80	PN10	2
65 - 80	63 - 90	80	PN16	2
100 - 80	104 - 132	80	PN16	2
125 - 80	132 - 155	80	PN10	2
125 - 80	132 - 155	80	PN16	2
150 - 80	154 - 192	80	PN10	2
150 - 80	154 - 192	80	PN16	2

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DN-DN (mm)	NBR / A2 Code	EPDM / A2 Code	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50 - 80	709 495 218	709 495 618	709 495 018	709 495 318	12.700
65 - 80	709 495 236	709 495 636	709 495 036	709 495 336	14.600
65 - 80	709 495 230	709 495 630	709 495 030	709 495 330	14.600
100 - 80	709 495 223	709 495 623	709 495 023	709 495 323	17.600
125 - 80	709 495 261	709 495 661	709 495 061	709 495 361	19.400
125 - 80	709 495 248	709 495 648	709 495 048	709 495 348	19.400
150 - 80	709 495 273	709 495 673	709 495 073	709 495 373	19.800
150 - 80	709 495 267	709 495 667	709 495 067	709 495 367	19.800

DN-DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	f (mm)	h1 (mm)	h2 (mm)	PN Water (bar)	No. of bolt holes flange
50 - 80	356 - 371	164	100	3xM12	140	90	174	16	8
65 - 80	402 - 413	186	95	3xM12	170	90	180	16	4
65 - 80	402 - 413	186	95	3xM12	170	90	180	16	8
100 - 80	408 - 426	236	110	3xM16	190	135	184	16	8
125 - 80	394 - 412	264	120	4xM16	170	135	184	16	4
125 - 80	394 - 412	264	120	4xM16	170	135	184	16	8
150 - 80	407 - 435	264	120	4xM16	180	160	184	16	4
150 - 80	407 - 435	264	120	4xM16	180	160	184	16	8

**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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600



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	3.800
50	46 - 71	63	709 365 210	709 365 610	4.000
65	63 - 90	63	709 365 211	709 365 611	4.400
65	63 - 90	75	709 365 212	709 365 612	4.400
80	84 - 105	90	709 365 214	709 365 614	5.400
80	84 - 105	110	709 365 215	709 365 615	5.400
100	104 - 132	90	709 465 216	709 465 616	6.900
100	104 - 132	110	709 365 216	709 365 616	6.900
100	104 - 132	125	709 465 217	709 465 617	6.900
125	132 - 155	110	709 465 218	709 465 618	8.900
125	132 - 155	125	709 365 218	709 365 618	11.200
125	132 - 155	140	709 465 219	709 465 619	8.900
125	132 - 155	160	709 465 221	709 465 621	12.300
150	154 - 192	160	709 365 220	709 365 620	15.300
150	154 - 192	180	709 465 220	709 465 620	15.300
200	192 - 232	200	709 365 224	709 365 624	27.600
200	192 - 232	225	709 465 224	709 465 624	31.500
250	267 - 310	250	709 365 228	709 365 628	44.200
250	267 - 310	280	709 465 228	709 465 628	41.900
300	315 - 356	315	709 365 232	709 365 632	63.400

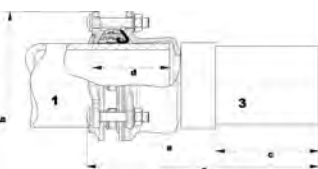
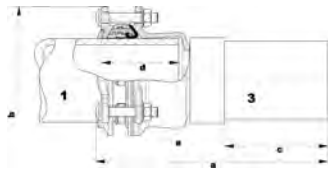


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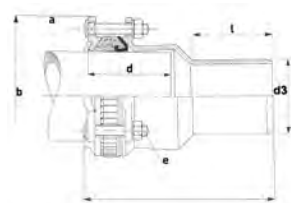
PF 1 54 323 061



DN (mm)	NBR / A4 Code	EPDM / A4 Code	Weight (kg)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)
50	709 365 009	709 365 309	3.800	627	164	429.0	100	3xM12	16	8
50	709 365 010	709 365 310	4.000	627	164	464.0	100	3xM12	16	8
65	709 365 011	709 365 311	4.400	634	186	429.0	95	3xM12	16	8
65	709 365 012	709 365 312	4.400	634	186	460.7	95	3xM12	16	8
80	709 365 014	709 365 314	5.400	635	204	457.8	115	3xM12	16	8
80	709 365 015	709 365 315	5.400	635	204	461.0	115	3xM12	16	8
100	709 465 016	709 465 316	6.900	651	236	397.0	110	3xM16	16	8
100	709 365 016	709 365 316	6.900	651	236	397.0	110	3xM16	16	8
100	709 465 017	709 465 317	6.900	651	236	445.5	110	3xM16	16	8
125	709 465 018	709 465 318	8.900	661	264	390.0	120	4xM16	16	8
125	709 365 018	709 365 318	11.200	661	264	390.0	120	4xM16	16	8
125	709 465 019	709 465 319	8.900	661	264	443.0	120	4xM16	16	8
125	709 465 021	709 465 321	12.300	661	264	445.0	120	4xM16	16	8
150	709 365 020	709 365 320	15.300	669	304	364.0	120	4xM16	16	8
150	709 465 020	709 465 320	15.300	669	304	430.0	120	4xM16	16	8
200	709 365 024	709 365 324	27.600	685	354	333.0	140	6xM16	16	8
200	709 465 024	709 465 324	22.600	685	354	422.0	140	6xM16	16	8
250	709 365 028	709 365 328	44.200	723	432	294.0	142	6xM20	16	8
250	709 465 028	709 465 328	41.900	723	432	408.2	142	6xM20	16	8
300	709 365 032	709 365 332	63.400	753	490	400.3	168	8xM20	16	8

PF 1 54 323 060

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



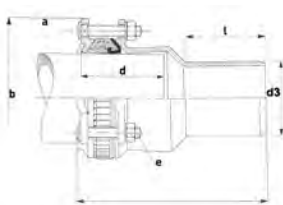
Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600

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	3.400	709 331 010	709 331 310	3.400
100	110	104 - 132	709 331 216	709 331 616	7.400	709 331 016	709 331 316	7.400
150	160	154 - 192	709 331 220	709 331 620	13.800	709 331 020	709 331 320	13.800
200	200	192 - 232	709 331 229	709 331 629	21.100	709 331 029	709 331 329	21.100

DN (mm)	d3 (mm)	a (mm)	b (mm)	d (mm)	e (mm)	L (mm)	PN Water (bar)	MOP Gas (bar)
50	63	204 - 219	164	100	3xM12	75	25	8
100	110	258 - 277	269	110	3xM16	120	25	8
150	160	289 - 317	304	120	4xM16	135	25	8
200	200	335 - 362	354	140	6xM16	145	25	8

PF 1 54 323 061



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

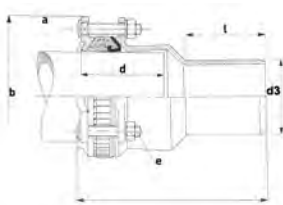
Model:

- Suitable for all kinds of pipe material
- Suitable for water and gas
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
50	63	46 - 71	709 335 210	709 335 610	709 335 010	709 335 310	3.400
100	110	104 - 132	709 335 216	709 335 616	709 335 016	709 335 316	7.400
150	160	154 - 192	709 335 220	709 335 620	709 335 020	709 335 320	13.800
200	200	192 - 232	709 335 229	709 335 629	709 335 029	709 335 329	21.100

DN (mm)	d3 (mm)	a (mm)	b (mm)	d (mm)	e (mm)	L (mm)	PN Water (bar)	MOP Gas (bar)
50	63	204 - 219	164	100	3xM12	75	16	8
100	110	258 - 277	269	110	3xM16	120	16	8
150	160	289 - 317	304	120	4xM16	135	16	8
200	200	335 - 362	354	140	6xM16	145	16	8

PF 1 54 323 060



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

Model:

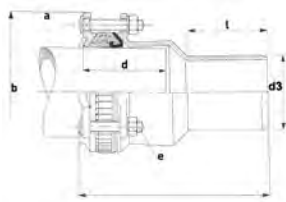
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For all plastic pipes, the use of an insert stiffener (see accessories) is recommended and in some cases mandatory. Check our technical information.
- Hygiene protection included DN50 - DN600

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	5.700	709 341 024	709 341 324	5.700

DN (mm)	d3 (mm)	a (mm)	b (mm)	d (mm)	e (mm)	l (mm)	PN Water (bar)	MOP Gas (bar)
80	110	240 - 254	204	115	3xM12	120	25	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
- 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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

DN (mm)	d3 (mm)	Range 1 (mm)	NBR / A2 Code	EPDM / A2 Code	NBR / A4 Code	EPDM / A4 Code	Weight (kg)
80	110	84 - 105	709 345 224	709 345 624	709 345 024	709 345 324	5.700

DN (mm)	d3 (mm)	a (mm)	b (mm)	d (mm)	e (mm)	l (mm)	PN Water (bar)	MOP Gas (bar)
80	110	240 - 254	204	115	3xM12	120	16	8

MULTI/JOINT® Accessories

MULTI/JOINT® Accessories

PF 1 54 323 064

Insert stiffener Economy



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 dimensions available on request

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
40 x 3,7	11.0	100	709 026 391	0.200
40 x 2,3	17.6 / 17.0	100	709 026 392	0.200
50 x 4,6	11.0	100	709 026 203	0.095
50 x 2,9	17.6 / 17.0	100	709 026 206	0.102
63 x 5,8	11.0	100	709 026 211	0.121
63 x 3,6	17.6 / 17.0	100	709 026 214	0.132
63 x 2,0	33	100	709 026 217	0.140
63 x 1,5	41	100	709 026 415	0.140
75 x 6,8	11.0	100	709 026 220	0.152
75 x 4,3	17.6 / 17.0	100	709 026 223	0.158
75 x 1,9	41	100	709 026 227	0.170
90 x 8,2	11.0	120	709 026 230	0.210
90 x 5,2	17.6 / 17.0	120	709 026 233	0.227
90 x 2,8	33	120	709 026 236	0.243
90 x 2,2	41	120	709 026 238	0.247
110 x 10,0	11.0	120	709 026 242	0.257
110 x 6,3	17.6 / 17.0	120	709 026 245	0.279
110 x 3,4	33	120	709 026 248	0.299
110 x 2,7	41	120	709 026 250	0.302
125 x 11,4	11.0	120	709 026 254	0.293
125 x 7,2	17.6 / 17.0	120	709 026 257	0.317
140 x 12,7	11.0	140	709 026 266	0.383
140 x 8,0	17.6 / 17.0	140	709 026 269	0.416
160 x 14,6	11.0	140	709 026 278	0.655
160 x 9,1	17.6 / 17.0	140	709 026 281	0.711
160 x 4,9	33	140	709 026 284	0.760
160 x 4,0	41	140	709 026 286	0.770
180 x 16,4	11.0	140	709 026 290	0.739
180 x 10,7	17.0	140	709 026 408	0.801
180 x 10,3	17.6	140	709 026 293	0.804
200 x 18,2	11.0	160	709 026 302	0.940
200 x 11,9	17.0	160	709 026 409	1.018
200 x 11,4	17.6	160	709 026 305	1.024
200 x 6,1	33	160	709 026 308	1.090
200 x 4,9	41	160	709 026 310	1.104
225 x 20,5	11.0	160	709 026 314	1.060
225 x 13,4	17.0	160	709 026 410	1.146
225 x 12,8	17.6	160	709 026 317	1.155
250 x 22,8	11.0	160	709 026 326	1.567
250 x 14,8	17.0	160	709 026 411	1.697
250 x 14,3	17.6	160	709 026 329	1.705
250 x 7,6	33	160	709 026 332	1.817
250 x 6,1	41	160	709 026 334	1.840
280 x 25,5	11.0	160	709 026 338	1.760
280 x 16,6	17.0	160	709 026 340	1.904
280 x 16,0	17.6	160	709 026 341	1.914
315 x 28,7	11.0	160	709 026 350	1.979
315 x 18,7	17.0	160	709 026 413	2.144
315 x 17,9	17.6	160	709 026 353	2.157
315 x 9,6	33	160	709 026 356	2.294

table continued on the next page

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
315 x 7,7	41	160	709 026 358	2.324
355 x 32,3	11.0	160	709 026 362	2.324
355 x 21,1	17.0	160	709 026 414	2.416
355 x 20,2	17.6	160	709 026 365	2.431

Insert stiffener with wedge



Model:

- Suitable for PE and PVC pipes
- Stainless steel A2 quality (AISI 304), optional A4 quality (AISI 316)
- Other dimensions available on request

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
63 x 3.6	17.6 / 17.0	175	709 026 012	0.430
63 x 5.8	11.0	175	709 026 016	0.300
63 x 8.7	7.5	175	709 026 018	0.194
75 x 4.3	17.6 / 17.0	175	709 026 022	0.300
75 x 6.9	11.0	175	709 026 026	0.300
90 x 5.1	17.6 / 17.0	175	709 026 032	0.335
90 x 8.2	11.0	175	709 026 036	0.200
90 x 12.5	7.5	175	709 026 038	0.800
110 x 6.3	17.6 / 17.0	175	709 026 042	0.850
110 x 10.0	11.0	175	709 026 046	0.510
110 x 15.2	7.5	175	709 026 048	0.304
125 x 7.1	17.6 / 17.0	175	709 026 052	0.920
125 x 11.4	11.0	175	709 026 056	0.500
140 x 8.0	17.6 / 17.0	175	709 026 062	1.100
140 x 12.8	11.0	175	709 026 066	1.100
160 x 4.8	33.0	200	709 026 070	1.300
160 x 9.1	17.6 / 17.0	200	709 026 072	1.300
160 x 14.6	11.0	200	709 026 076	0.955
180 x 10.2	17.6 / 17.0	200	709 026 082	1.380
180 x 16.4	11.0	200	709 026 086	1.380
200 x 11.4	17.6 / 17.0	200	709 026 092	1.450
200 x 18.2	11.0	200	709 026 096	0.995
225 x 12.8	17.6 / 17.0	225	709 026 102	1.520
225 x 20.5	11.0	225	709 026 106	1.520
250 x 14.2	17.6 / 17.0	225	709 026 115	1.900
250 x 22.8	11.0	225	709 026 116	0.926
280 x 16.6	17.6 / 17.0	225	709 026 127	1.400
280 x 25.5	11.0	225	709 026 126	1.400
315 x 17.9	17.6	225	709 026 125	1.800
315 x 28.7	11.0	225	709 026 124	1.700
355 x 10.8	33.0	225	709 026 132	1.800
355 x 20.1	17.6	225	709 026 129	1.000
355 x 32.3	11.0	225	709 026 128	1.780
370 x 35.0	11.0	225	709 026 133	1.000
400 x 15.4	26.0	225	709 026 140	1.000
400 x 22.7	17.6	225	709 026 139	2.561
400 x 36.4	11.0	225	709 026 138	1.000
450 x 25.5	17.6	225	709 026 149	1.000
450 x 41.0	11.0	225	709 026 148	3.350
500 x 28.3	17.6	225	709 026 159	0.360
500 x 45.5	11.0	225	709 026 158	1.000
560 x 31.7	17.6	225	709 026 169	3.900
560 x 51.0	11.0	225	709 026 168	1.000
630 x 35.7	17.6	225	709 026 179	4.789
630 x 57.3	11.0	225	709 026 178	4.470
710 x 40.2	17.6	225	709 026 189	1.000
710 x 64.5	11.0	225	709 026 188	1.000

table continued on the next page

d x e (mm)	SDR	L (mm)	Code	Weight (kg)
800 x 45.3	17.6	225	709 026 199	1.000
800 x 72.7	11.0	225	709 026 198	1.000
900 x 51.2	17.6	225	709 026 183	1.070
900 x 81.8	11.0	225	709 026 182	1.070
1000 x 56.8	17.6	225	709 026 191	1.150
1000 x 90.9	11.0	225	709 026 192	1.070
1200 x 109.1	11.0	225	709 026 184	1.070
1400 x 79.6	17.6	225	709 026 187	1.070
1400 x 127.3	11.0	225	709 026 186	1.070
1600 x 90.9	17.6	225	709 026 196	1.070
1600 x 145.5	11.0	225	709 026 195	1.070



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
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



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

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

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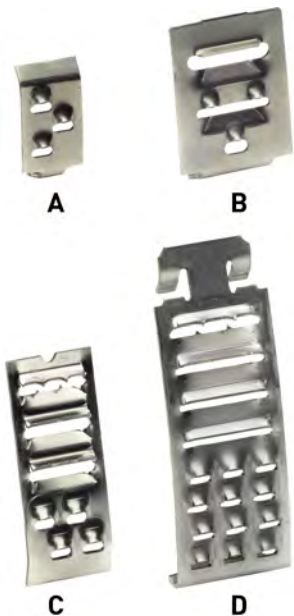
DN (mm)	Range (mm)	NBR Code	EPDM Code	Weight (kg)
225	230 - 268	709 597 246	709 597 646	1.300
250	267 - 310	709 597 248	709 597 648	1.500
300	315 - 356	709 597 253	709 597 653	1.700
350	352 - 393	709 597 254	709 597 654	2.000
400	392 - 433	709 597 256	709 597 656	2.200
425	432 - 464	709 597 282	709 597 682	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

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	DN (mm)	Range (mm)	Fiksers (qty)	Code	Weight (kg)
A	50	46 - 71	16	709 597 258	0.036
A	65	63 - 90	19	709 597 259	0.046
A	80	84 - 105	22	709 597 260	0.048
B	100	104 - 132	15	709 597 261	0.054
B	125	132 - 155	18	709 597 262	0.048
C	150	154 - 192	40	709 597 263	0.082
C	200	192 - 232	48	709 597 264	0.224
D	225	230 - 267	45	709 597 266	0.164
D	250	267 - 310	53	709 597 268	0.156
D	300	315 - 356	63	709 597 272	0.210
D	350	352 - 393	68	709 597 274	0.240
D	400	392 - 433	74	709 597 276	0.240
D	425	432 - 464	84	709 597 288	0.220
D	450	450 - 482	88	709 597 284	0.270
D	475	481 - 513	93	709 597 289	0.250
D	500	500 - 532	97	709 597 285	0.291
D	550	548 - 580	105	709 597 286	0.318
D	600	605 - 637	115	709 597 287	0.348

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	0.350
100		3xM16	700 618 924	0.700
	125 - 150	4xM16	700 618 925	0.900
200		6xM16	700 618 926	1.200
	225 - 250	6xM20	700 618 927	2.000
	300 - 350	8xM20	700 618 928	2.600

table continued on the next page

PF 1 54 323 063

DN (mm)	DN-DN (mm)	M	Code	Weight (kg)
400		10xM20	700 618 929	5.000
	425 - 500	10xM20	700 618 933	4.030
550		12xM20	700 618 934	4.836
600		14xM20	700 618 935	5.642

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	0.350
100		3xM16	700 618 954	0.700
	125 - 150	4xM16	700 618 955	0.900
200		6xM16	700 618 956	1.200
	225 - 250	6xM20	700 618 957	2.000
	300 - 350	8xM20	700 618 958	2.600
400		10xM20	700 618 959	5.000
	425 - 500	10xM20	700 618 960	4.030
550		12xM20	700 618 961	4.836
600		14xM20	700 618 962	5.642

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

PF 1 54 329 012



Ratchet spanner

Model:

- For easy nut tightening
- M12 for MULTI/JOINT® DN50, DN65 and DN80
- M16 for MULTI/JOINT® DN100, DN125 and DN150

Description	Code	Weight (kg)
17x19 mm / M12	700 619 010	0.360
22x24 mm / M16	700 619 012	0.420

PF 1 54 329 012



Torque key wrench set

Model:

- 4 wrench keys sizes: 19, 22, 24 and 30
- 1 torque key 20-200 Nm
- robust metal case
- 4 ring spanners sizes: 19, 22, 24 and 30

<u>Code</u>	<u>Weight</u>	<u>description</u>
	(kg)	

<u>200 008 083</u>	9.000	basic set
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PF 1 54 329 012



Adaptor set

Model:

- compatible with the torque key set
- 3 adaptors sizes: 19, 24 and 30
- 1 ratchet key 20-200 Nm

<u>Code</u>	<u>description</u>
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<u>200 008 084</u>	adaptor set + ratchet key
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PF 1 54 329 012



Wrench key / c.w. Ratchet

Model:

- the wrench keys are available in 4 different sizes

<u>Code</u>	<u>description</u>
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<u>200 008 070</u>	wrench key 19 mm
<u>200 008 071</u>	wrench key 22 mm
<u>200 008 072</u>	wrench key 24 mm
<u>200 008 073</u>	wrench key 30 mm

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)
- 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
- 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)
- 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
- 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)
- 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
- 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)
- 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
- 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 cast 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.

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

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 cast 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.

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

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 cast 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.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
102 - 112	16.0	724 209 164	1.000
108 - 118	16.0	724 209 173	1.000

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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

**Multi/Clamp Midi
length 200 mm**



Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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	1.800
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

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



**Multi/Clamp Single
length 200 mm**

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
294 - 304	10.0	724 211 732	1.000

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



**Multi/Clamp Single
length 250 mm**

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
300 - 310	10.0	724 211 749	1.000
310 - 320	10.0	724 211 765	1.000

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



Multi/Clamp Single length 300 mm

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
310 - 320	10.0	724 211 766	1.000

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



Multi/Clamp Single length 400 mm

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

Range (mm)	PN Water (bar)	NBR Code	PF	Weight (kg)
63 - 70	16.0	724 211 159	1 54 325 009	1.000
67 - 74	16.0	724 211 175	1 54 325 009	1.000
70 - 77	16.0	724 211 191	1 54 325 009	1.000
73 - 80	16.0	724 211 207	1 54 325 009	1.000
75 - 83	16.0	724 211 223	1 54 325 009	1.000
82 - 90	16.0	724 211 239	1 54 325 009	1.000
87 - 97	16.0	724 211 255	1 54 325 009	1.000
95 - 104	16.0	724 211 271	1 54 325 009	1.000
98 - 108	16.0	724 211 287	1 54 325 009	1.000
102 - 112	16.0	724 211 303	1 54 325 009	1.000
108 - 118	16.0	724 211 319	1 54 325 009	1.000
113 - 123	16.0	724 211 335	1 54 325 009	1.000
118 - 128	16.0	724 211 351	1 54 325 009	1.000
120 - 131	16.0	724 211 367	1 54 325 009	1.000
125 - 135	16.0	724 211 383	1 54 325 009	1.000
133 - 144	16.0	724 211 399	1 54 325 009	1.000
139 - 150	16.0	724 211 415	1 54 325 009	1.000
145 - 155	16.0	724 211 431	1 54 325 009	1.000
151 - 161	16.0	724 211 447	1 54 325 009	1.000
159 - 170	16.0	724 211 463	1 54 325 009	1.000
165 - 175	16.0	724 211 479	1 54 325 009	1.000
168 - 180	16.0	724 211 495	1 54 325 009	1.000
176 - 186	10.0	724 211 511	1 54 325 009	1.000
180 - 191	10.0	724 211 527	1 54 325 009	1.000
193 - 203	10.0	724 211 543	1 54 325 009	1.000
200 - 210	10.0	724 211 559	1 54 325 009	1.000
209 - 220	10.0	724 211 575	1 54 325 009	1.000
215 - 226	10.0	724 211 591	1 54 325 009	1.000
219 - 230	10.0	724 211 607	1 54 325 009	1.000
222 - 233	10.0	724 211 623	1 54 325 009	1.000
228 - 240	10.0	724 211 639	1 54 325 009	1.000
243 - 253	10.0	724 211 655	1 54 325 009	1.000
252 - 262	10.0	724 211 671	1 54 325 009	1.000
261 - 271	10.0	724 211 687	1 54 325 009	1.000
271 - 281	10.0	724 211 703	1 54 325 009	1.000
280 - 290	10.0	724 211 719	1 54 325 009	1.000
294 - 304	10.0	724 211 735	1 54 325 009	1.000
300 - 310	10.0	724 211 751	1 54 325 009	1.000
310 - 320	10.0	724 211 767	1 54 325 009	1.000

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	PF	Weight (kg)
315 - 326	10.0	724 211 783	1 54 325 009	1.000
320 - 330	10.0	724 211 799	1 54 325 009	1.000
324 - 334	10.0	724 211 815	1 54 325 009	1.000
335 - 346	10.0	724 211 831	1 54 325 009	1.000

PF 1 54 325 009



Multi/Clamp Single length 500 mm

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



Multi/Clamp Double length 400 mm

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



**Multi/Clamp Double
length 500 mm**

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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



Multi/Clamp Double length 600 mm

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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



**Multi/Clamp Triple
length 600 mm**

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
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



**Multi/Clamp Triple
length 750 mm**

Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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

table continued on the next page

Range (mm)	PN Water (bar)	NBR Code	Weight (kg)
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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

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

table continued on the next page

PF 1 54 327 011

Range (mm)	PN Water (bar)	NBR Code
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

table continued on the next page

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Range (mm)	PN Water (bar)	NBR Code
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

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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
133 - 153		16.0	133-153L500N
143 - 163		16.0	143-163L500N
160 - 180		16.0	160-180L500N

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Range (mm)	DN (mm)	PN Water (bar)	NBR Code
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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- For working pressures in GAS please consult Georg Fischer Waga N.V.

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)

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

**Multi/Clamp Combi Box
length 400 mm**



Model:

- 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 use on plastic pipes please consult Georg Fischer Waga N.V.
- 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	1.000	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 separate	724 213 826	17.900	

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
	<u>Shell sections to combine with 1 Multi/Clamp Combi Box:</u>	
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
	<u>Shell sections to combine with 2 Multi/Clamp Combi Boxes:</u>	
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)

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
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
PRO-FIT (other sizes on request)**

Model:

- Suitable for PE and PVC pipes

Inch (inch)	Description	Code	Weight (kg)
11/16	PRO-FIT PE/PVC cutter 17,5 mm	709 810 711	0.030
3/4	PRO-FIT PE/PVC cutter 19,1 mm	709 810 712	0.034
7/8	PRO-FIT PE/PVC cutter 22,2 mm	709 810 714	0.046
1	PRO-FIT PE/PVC cutter 25,4 mm	709 810 716	0.056
1 1/4	PRO-FIT PE/PVC cutter 31,8 mm	709 810 720	0.096
1 1/2	PRO-FIT PE/PVC cutter 38,1 mm	709 810 724	0.104
1 3/4	PRO-FIT PE/PVC cutter 44,5 mm	709 810 728	0.120
1 7/8	PRO-FIT PE/PVC cutter 48,2 mm	709 810 730	0.128

PF 1 54 326 005



Heavy duty transport / storage box for W400 drilling device

Model:

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

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	2.400
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

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



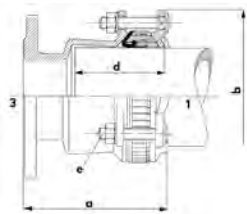
Cup drill

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



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

Model:

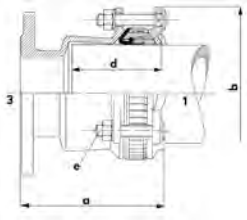
- Suitable for all kinds of pipe material
- Suitable for water and gas
- Ductile cast iron GGG45 body and clamping ring(s), acc. to EN-GJS-450-10
- RESICOAT® epoxy powder coating, according to GSK standards and EN 14901
- NBR or EPDM gasket, NBR acc. to EN 682 (-5°C up to +50°C), EPDM acc. to EN 681-1 (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
- For restraint versions, on plastic pipes, the use of an insert stiffener (see accessories) is mandatory, check our technical information
- Hygiene protection included DN50 - DN600

Note:

* DN350 & DN400 for plastic pipe materials = PN 10 bar water / MOP 5 bar gas

DN (mm)	Range 1 (mm)	Flange 3 (mm)	Drilling pat- tern	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	709 355 224	1 54 323 061

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DN (mm)	a (mm)	b (mm)	d (mm)	e (mm)	PN Water (bar)	MOP Gas (bar)	No. of bolt holes flange
50	179 - 194	164	100	3xM12	16	8	4
65	187 - 198	186	95	3xM12	16	8	4
80	183 - 197	204	115	3xM12	16	8	8
100	181 - 200	236	110	3xM16	16	8	8
150	194 - 222	304	120	4xM16	16	8	8
200	224 - 251	354	140	6xM16	16	8	8

PF 1 54 326 005



Heavy duty transport / storage box for W410 drilling device

Model:

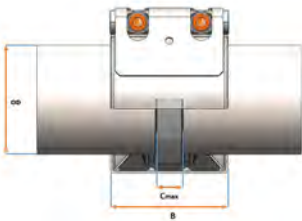
- Including: hex key 3 mm, hex key 6 mm and screwdriver
- Outside dimension transport / warehouse box: 120 x 40 x 40 cm

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

UNI-Coupling stainless steel couplings

UNI-Coupling

UNI-Grip



UNI-Grip L PN16

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

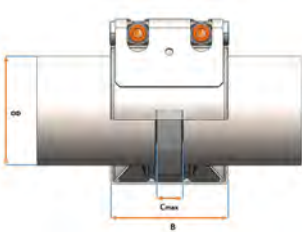
Option:

- Sealing type Viton on request

OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
21.0 - 24.0	779 724 001	1 D1 A88 100	0	0.2	779 721 001	1 D1 A88 200
25.0 - 29.0	779 724 002	1 D1 A88 100	0	0.2	779 721 002	1 D1 A88 200
29.0 - 32.0	779 724 003	1 D1 A88 100	0	0.2	779 721 003	1 D1 A88 200
33.0 - 36.0	779 724 004	1 D1 A88 100	0	0.2	779 721 004	1 D1 A88 200
36.0 - 39.0	779 724 005	1 D1 A88 100	0	0.4	779 721 005	1 D1 A88 200
39.0 - 43.0	779 724 006	1 D1 A88 100	0	0.4	779 721 006	1 D1 A88 200
43.0 - 47.5	779 724 007	1 D1 A88 100	0	0.4	779 721 007	1 D1 A88 200
47.5 - 52.5	779 724 008	1 D1 A88 100	0	0.4	779 721 008	1 D1 A88 200
52.5 - 58.0	779 724 009	1 D1 A88 100	0	0.6	779 721 009	1 D1 A88 200
58.0 - 64.0	779 724 010	1 D1 A88 100	0	0.6	779 721 010	1 D1 A88 200
64.0 - 72.0	779 724 011	1 D1 A88 100	0	1.4	779 721 011	1 D1 A88 200
72.0 - 80.0	779 724 012	1 D1 A88 100	0	1.4	779 721 012	1 D1 A88 200
80.0 - 88.0	779 724 013	1 D1 A88 100	0	1.6	779 721 013	1 D1 A88 200
88.0 - 96.0	779 724 014	1 D1 A88 100	0	1.6	779 721 014	1 D1 A88 200
97.0 - 105.0	779 724 015	1 D1 A88 100	0	1.7	779 721 015	1 D1 A88 200
104.0 - 112.0	779 724 016	1 D1 A88 100	0	1.7	779 721 016	1 D1 A88 200
112.0 - 120.0	779 724 017	1 D1 A88 100	0	1.9	779 721 017	1 D1 A88 200
122.0 - 130.0	779 724 018	1 D1 A88 100	0	1.9	779 721 018	1 D1 A88 200
129.0 - 137.0	779 724 019	1 D1 A88 100	0	3.4	779 721 019	1 D1 A88 200
137.0 - 145.0	779 724 020	1 D1 A88 100	0	3.5	779 721 020	1 D1 A88 200
149.0 - 157.0	779 724 021	1 D1 A88 100	0	3.6	779 721 021	1 D1 A88 200
157.0 - 165.0	779 724 022	1 D1 A88 100	0	3.7	779 721 022	1 D1 A88 200
164.0 - 172.0	779 724 023	1 D1 A88 100	0	3.8	779 721 023	1 D1 A88 200

OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
21.0 - 24.0	M6	16	70	10	21.0	24.0	46	45	76	7
25.0 - 29.0	M6	16	70	10	25.0	29.0	46	45	76	7
29.0 - 32.0	M6	16	70	10	29.0	32.0	54	45	84	7
33.0 - 36.0	M6	16	70	10	33.0	36.0	54	45	84	7
36.0 - 39.0	M8	16	60	15	36.0	39.0	66	60	104	25
39.0 - 43.0	M8	16	50	15	39.0	43.0	66	60	104	25
43.0 - 47.5	M8	16	50	15	43.0	47.5	74	60	112	25
47.5 - 52.5	M8	16	50	15	47.5	52.5	74	60	112	25
52.5 - 58.0	M8	16	50	25	52.5	58.0	85	75	125	25
58.0 - 64.0	M8	16	40	25	58.0	64.0	85	75	125	25
64.0 - 72.0	M10	16	40	30	64.0	72.0	108	95	164	40
72.0 - 80.0	M10	16	40	30	72.0	80.0	108	95	164	40
80.0 - 88.0	M10	16	35	30	80.0	88.0	124	95	170	40
88.0 - 96.0	M10	16	35	30	88.0	96.0	124	95	170	40
97.0 - 105.0	M10	16	35	30	97.0	105.0	141	95	187	40
104.0 - 112.0	M10	16	35	30	104.0	112.0	141	95	187	40
112.0 - 120.0	M10	16	35	30	112.0	120.0	158	95	202	40
122.0 - 130.0	M10	16	32	30	122.0	130.0	158	95	202	40

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OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
129.0 - 137.0	M12	16	32	40	129.0	137.0	178	110	230	65
137.0 - 145.0	M12	16	32	40	137.0	145.0	186	110	238	65
149.0 - 157.0	M12	16	32	40	149.0	157.0	197	110	249	65
157.0 - 165.0	M12	16	32	40	157.0	165.0	205	110	255	65
164.0 - 172.0	M12	16	32	40	164.0	172.0	212	110	262	65



UNI-Grip LE PN10

Model:

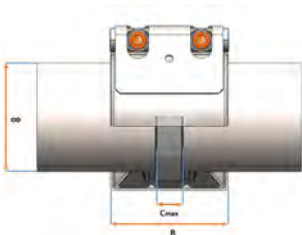
- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request



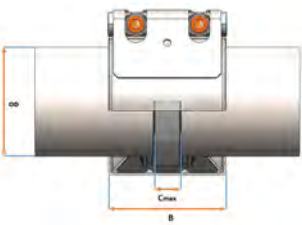
OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
64 - 72	779 724 411	1 D1 A88 100	0	1.0	779 721 411	1 D1 A88 200
72 - 80	779 724 412	1 D1 A88 100	0	1.0	779 721 412	1 D1 A88 200
80 - 88	779 724 413	1 D1 A88 100	0	1.0	779 721 413	1 D1 A88 200
88 - 96	779 724 414	1 D1 A88 100	0	1.0	779 721 414	1 D1 A88 200
97 - 105	779 724 415	1 D1 A88 100	0	1.1	779 721 415	1 D1 A88 200
104 - 112	779 724 416	1 D1 A88 100	0	1.1	779 721 416	1 D1 A88 200
112 - 120	779 724 417	1 D1 A88 100	0	1.2	779 721 417	1 D1 A88 200
122 - 130	779 724 418	1 D1 A88 100	0	1.2	779 721 418	1 D1 A88 200
129 - 137	779 724 419	1 D1 A88 100	0	2.1	779 721 419	1 D1 A88 200
137 - 145	779 724 420	1 D1 A88 100	0	2.2	779 721 420	1 D1 A88 200
149 - 157	779 724 421	1 D1 A88 100	0	2.3	779 721 421	1 D1 A88 200
157 - 165	779 724 422	1 D1 A88 100	0	2.3	779 721 422	1 D1 A88 200
164 - 172	779 724 423	1 D1 A88 100	0	2.4	779 721 423	1 D1 A88 200

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
64 - 72	M10	10	16	30	64	72	108	95	164	40
72 - 80	M10	10	16	30	72	80	108	95	164	40
80 - 88	M10	10	16	30	80	88	124	95	170	40
88 - 96	M10	10	16	30	88	96	124	95	170	40
97 - 105	M10	10	16	30	97	105	141	95	187	40
104 - 112	M10	10	16	30	104	112	141	95	187	40
112 - 120	M10	10	16	30	112	120	158	95	202	40
122 - 130	M10	10	16	30	122	130	158	95	202	40
129 - 137	M12	10	16	40	129	137	178	110	230	65

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OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
137 - 145	M12	10	16	40	137	145	186	110	238	65
149 - 157	M12	10	16	40	149	157	197	110	249	65
157 - 165	M12	10	16	40	157	165	205	110	255	65
164 - 172	M12	10	16	40	164	172	212	110	262	65



UNI-Grip S PN16

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

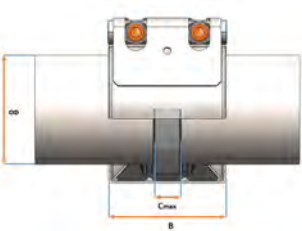
Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

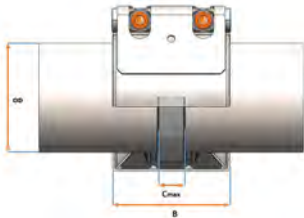
- Sealing type Viton on request

*Restricted working conditions for CuNiFe tubes with a wall thickness ≤ to 4 mm. For pipe dimensions with an asterisk, these may only be loaded with max PN 2,5.



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
21.0 - 24.0	779 764 001	1 D1 A88 101	0	0.2	779 762 001	1 D1 A88 201
25.0 - 29.0	779 764 002	1 D1 A88 101	0	0.2	779 762 002	1 D1 A88 201
29.0 - 32.0	779 764 003	1 D1 A88 101	0	0.2	779 762 003	1 D1 A88 201
33.0 - 36.0	779 764 004	1 D1 A88 101	0	0.2	779 762 004	1 D1 A88 201
36.0 - 39.0	779 764 005	1 D1 A88 101	0	0.4	779 762 005	1 D1 A88 201
39.0 - 43.0	779 764 006	1 D1 A88 101	0	0.4	779 762 006	1 D1 A88 201
43.0 - 47.5	779 764 007	1 D1 A88 101	0	0.4	779 762 007	1 D1 A88 201
47.5 - 52.5	779 764 008	1 D1 A88 101	0	0.4	779 762 008	1 D1 A88 201
52.5 - 58.0	779 764 009	1 D1 A88 101	0	0.6	779 762 009	1 D1 A88 201
58.0 - 64.0	779 764 010	1 D1 A88 101	0	0.6	779 762 010	1 D1 A88 201
64.0 - 72.0	779 764 011	1 D1 A88 101	0	1.4	779 762 011	1 D1 A88 201
72.0 - 80.0	779 764 012	1 D1 A88 101	0	1.4	779 762 012	1 D1 A88 201
80.0 - 88.0	779 764 013	1 D1 A88 101	0	1.6	779 762 013	1 D1 A88 201
88.0 - 96.0	779 764 014	1 D1 A88 101	0	1.6	779 762 014	1 D1 A88 201
97.0 - 105.0	779 764 015	1 D1 A88 101	0	1.7	779 762 015	1 D1 A88 201
104.0 - 112.0	779 764 016	1 D1 A88 101	0	1.7	779 762 016	1 D1 A88 201
112.0 - 120.0	779 764 017	1 D1 A88 101	0	1.9	779 762 017	1 D1 A88 201
122.0 - 130.0	779 764 018	1 D1 A88 101	0	1.9	779 762 018	1 D1 A88 201
129.0 - 137.0	779 764 019	1 D1 A88 101	0	3.4	779 762 019	1 D1 A88 201
137.0 - 145.0	779 764 020	1 D1 A88 101	0	3.5	779 762 020	1 D1 A88 201
149.0 - 157.0	779 764 021	1 D1 A88 101	0	3.6	779 762 021	1 D1 A88 201
157.0 - 165.0	779 764 022	1 D1 A88 101	0	3.7	779 762 022	1 D1 A88 201
164.0 - 172.0	779 764 023	1 D1 A88 101	0	3.8	779 762 023	1 D1 A88 201
185.0 - 198.0	779 764 024	1 D1 A88 101	0	6.5	779 762 024	1 D1 A88 201
198.0 - 211.0	779 764 025	1 D1 A88 101	0	6.7	779 762 025	1 D1 A88 201
210.0 - 223.0	779 764 026	1 D1 A88 101	0	9.2	779 762 026	1 D1 A88 201
221.0 - 234.0	779 764 027	1 D1 A88 101	0	9.5	779 762 027	1 D1 A88 201

table continued on the next page



OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
234.0 - 247.0	779 764 028	1 D1 A88 101	0	9.8	779 762 028	1 D1 A88 201
247.0 - 260.0	779 764 029	1 D1 A88 101	0	10.1	779 762 029	1 D1 A88 201
* 263.0 - 276.0	779 764 030	1 D1 A88 101	0	10.5	779 762 030	1 D1 A88 201
277.0 - 290.0	779 764 031	1 D1 A88 101	0	10.9	779 762 031	1 D1 A88 201

OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
21.0 - 24.0	M6	16	70	10	21.0	24.0	46	45	76	7
25.0 - 29.0	M6	16	70	10	25.0	29.0	46	45	76	7
29.0 - 32.0	M6	16	70	10	29.0	32.0	54	45	84	7
33.0 - 36.0	M6	16	70	10	33.0	36.0	54	45	84	7
36.0 - 39.0	M8	16	60	15	36.0	39.0	66	60	104	25
39.0 - 43.0	M8	16	50	15	39.0	43.0	66	60	104	25
43.0 - 47.5	M8	16	50	15	43.0	47.5	74	60	112	25
47.5 - 52.5	M8	16	50	15	47.5	52.5	74	60	112	25
52.5 - 58.0	M8	16	50	25	52.5	58.0	85	75	125	25
58.0 - 64.0	M8	16	40	25	58.0	64.0	85	75	125	25
64.0 - 72.0	M10	16	40	30	64.0	72.0	108	95	164	40
72.0 - 80.0	M10	16	40	30	72.0	80.0	108	95	164	40
80.0 - 88.0	M10	16	35	30	80.0	88.0	124	95	170	40
88.0 - 96.0	M10	16	35	30	88.0	96.0	124	95	170	40
97.0 - 105.0	M10	16	35	30	97.0	105.0	141	95	187	40
104.0 - 112.0	M10	16	35	30	104.0	112.0	141	95	187	40
112.0 - 120.0	M10	16	35	30	112.0	120.0	158	95	202	40
122.0 - 130.0	M10	16	32	30	122.0	130.0	158	95	202	40
129.0 - 137.0	M12	16	32	40	129.0	137.0	178	110	230	65
137.0 - 145.0	M12	16	32	40	137.0	145.0	186	110	238	65
149.0 - 157.0	M12	16	32	40	149.0	157.0	197	110	249	65
157.0 - 165.0	M12	16	32	40	157.0	165.0	205	110	255	65
164.0 - 172.0	M12	16	32	40	164.0	172.0	212	110	262	65
185.0 - 198.0	M16	16	25	40	185.0	198.0	236	138	262	160
198.0 - 211.0	M16	16	25	40	198.0	211.0	249	138	275	160
210.0 - 223.0	M16	16	25	40	210.0	223.0	261	140	287	160
221.0 - 234.0	M16	16	25	40	221.0	234.0	272	140	298	160
234.0 - 247.0	M16	16	25	40	234.0	247.0	285	140	311	160
247.0 - 260.0	M16	16	25	40	247.0	260.0	298	140	324	160
* 263.0 - 276.0	M16	16	25	40	263.0	276.0	314	140	340	160
277.0 - 290.0	M16	16	25	40	277.0	290.0	328	142	354	160

UNI-Grip S PN10



Model:

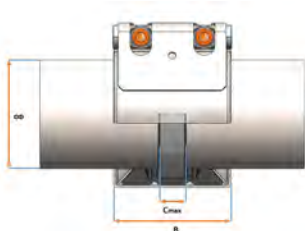
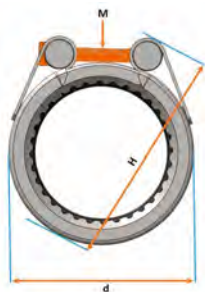
- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

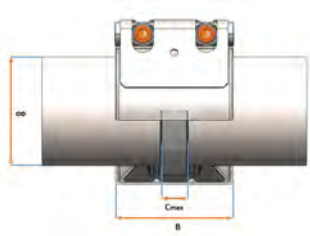
- Sealing type Viton on request
- *Restricted working conditions for CuNiFe tubes with a wall thickness \leq to 4 mm. For pipe dimensions with an asterisk, these may only be loaded with max PN 2,5.



	OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
	210 - 223	779 764 126	1 D1 A88 111	0	6.9	779 762 126	1 D1 A88 211
	221 - 234	779 764 127	1 D1 A88 111	0	7.0	779 762 127	1 D1 A88 211
	234 - 247	779 764 128	1 D1 A88 111	0	7.2	779 762 128	1 D1 A88 211
	247 - 260	779 764 129	1 D1 A88 111	0	7.5	779 762 129	1 D1 A88 211
*	263 - 276	779 764 130	1 D1 A88 111	0	7.7	779 762 130	1 D1 A88 211
*	277 - 290	779 764 131	1 D1 A88 111	0	7.9	779 762 131	1 D1 A88 211
*	288 - 301	779 764 132	1 D1 A88 111	0	11.1	779 762 132	1 D1 A88 211
*	301 - 314	779 764 133	1 D1 A88 111	0	11.5	779 762 133	1 D1 A88 211
*	315 - 328	779 764 134	1 D1 A88 111	0	11.8	779 762 134	1 D1 A88 211
*	327 - 340	779 764 135	1 D1 A88 111	0	12.1	779 762 135	1 D1 A88 211
*	340 - 353	779 764 136	1 D1 A88 111	0	12.4	779 762 136	1 D1 A88 211
*	350 - 363	779 764 137	1 D1 A88 111	0	12.7	779 762 137	1 D1 A88 211
*	361 - 374	779 764 138	1 D1 A88 111	0	13.0	779 762 138	1 D1 A88 211

	OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
	210 - 223	M16	10	16	40	210	223	261	138	287	160
	221 - 234	M16	10	16	40	221	234	272	138	298	160
	234 - 247	M16	10	16	40	234	247	285	138	311	160
	247 - 260	M16	10	16	40	247	260	298	138	324	160
*	263 - 276	M16	10	16	40	263	276	314	138	340	160
*	277 - 290	M16	10	16	40	277	290	328	140	354	160
*	288 - 301	M16	10	16	40	288	301	339	140	365	160
*	301 - 314	M16	10	16	40	301	314	352	140	378	160
*	315 - 328	M16	10	16	40	315	328	366	140	392	160
*	327 - 340	M16	10	16	40	327	340	378	140	404	160
*	340 - 353	M16	10	16	40	340	353	391	140	417	160
*	350 - 363	M16	10	16	40	350	363	401	140	427	160
*	361 - 374	M16	10	16	40	361	374	412	142	438	160

UNI-Plastgrip



UNI-Plastgrip L PN10

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

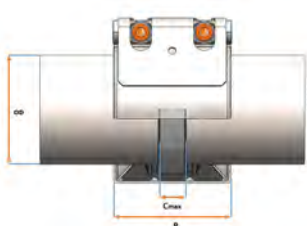
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory

OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
40	779 732 006	1 D1 A89 110	0	0.4	779 729 006	1 D1 A89 210
50	779 732 008	1 D1 A89 110	0	0.5	779 729 008	1 D1 A89 210
63	779 732 010	1 D1 A89 110	0	0.6	779 729 010	1 D1 A89 210
75	779 732 012	1 D1 A89 110	0	1.4	779 729 012	1 D1 A89 210
90	779 732 014	1 D1 A89 110	0	1.5	779 729 014	1 D1 A89 210
110	779 732 016	1 D1 A89 110	0	1.7	779 729 016	1 D1 A89 210
125	779 732 018	1 D1 A89 110	0	1.8	779 729 018	1 D1 A89 210
140	779 732 020	1 D1 A89 110	0	3.5	779 729 020	1 D1 A89 210
160	779 732 022	1 D1 A89 110	0	3.7	779 729 022	1 D1 A89 210

OD nominal (mm)	M	PN	WP	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
40	M8	10	16	15	39.0	43.0	66	60	104	25
50	M8	10	16	15	47.5	52.5	74	60	112	25
63	M8	10	16	25	58.0	64.0	85	75	125	25
75	M10	10	16	30	72.0	80.0	108	95	164	40
90	M10	10	16	30	88.0	96.0	124	95	170	40
110	M10	10	16	30	104.0	112.0	141	95	187	40
125	M10	10	16	30	122.0	130.0	158	95	202	40
140	M12	10	16	40	137.0	145.0	186	110	238	65
160	M12	10	16	40	157.0	165.0	205	110	255	65

UNI-Plastgrip S PN10



Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

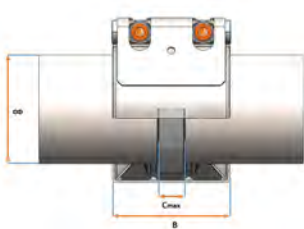
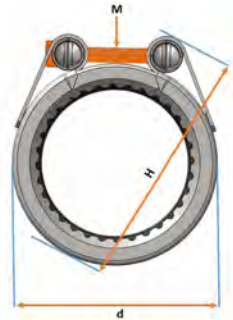
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory

OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
180	779 712 024	1 D1 A89 111	0	6.0	779 709 024	1 D1 A89 211
200	779 712 025	1 D1 A89 111	0	6.6	779 709 025	1 D1 A89 211
225	779 712 027	1 D1 A89 111	0	7.0	779 709 027	1 D1 A89 211
250	779 712 029	1 D1 A89 111	0	7.5	779 709 029	1 D1 A89 211
280	779 712 030	1 D1 A89 111	0	8.7	779 709 030	1 D1 A89 211
315	779 712 031	1 D1 A89 111	0	11.1	779 709 031	1 D1 A89 211
355	779 712 032	1 D1 A89 111	0	12.2	779 709 032	1 D1 A89 211

OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
180	M16	10	16	40	172	185	223	138	259	160
200	M16	10	16	40	195	208	246	138	272	160
225	M16	10	16	40	215	228	272	138	298	160
250	M16	10	16	40	247	260	298	138	324	160
280	M16	10	16	40	269	282	320	142	346	160
315	M16	10	16	40	312	325	363	146	389	160
355	M16	10	16	40	350	363	401	146	427	160

UNI-Combigrip



UNI-Combigrip L PN10

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

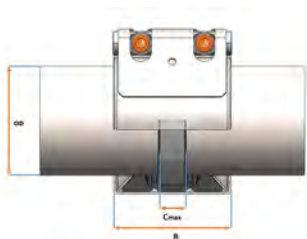
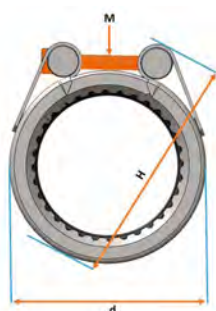
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory

OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
39.0 - 43.0	779 740 006	1 D1 A90 110	0	0.4	779 737 006	1 D1 A90 210
47.5 - 52.5	779 740 008	1 D1 A90 110	0	0.5	779 737 008	1 D1 A90 210
58.0 - 64.0	779 740 010	1 D1 A90 110	0	0.6	779 737 010	1 D1 A90 210
72.0 - 80.0	779 740 012	1 D1 A90 110	0	1.4	779 737 012	1 D1 A90 210
88.0 - 96.0	779 740 014	1 D1 A90 110	0	1.5	779 737 014	1 D1 A90 210
104.0 - 112.0	779 740 016	1 D1 A90 110	0	1.7	779 737 016	1 D1 A90 210
108.0 - 115.0	779 740 017	1 D1 A90 110	0	1.7	779 737 017	1 D1 A90 210
122.0 - 130.0	779 740 018	1 D1 A90 110	0	1.8	779 737 018	1 D1 A90 210
137.0 - 145.0	779 740 020	1 D1 A90 110	0	3.5	779 737 020	1 D1 A90 210
157.0 - 165.0	779 740 022	1 D1 A90 110	0	3.7	779 737 022	1 D1 A90 210
164.0 - 172.0	779 740 024	1 D1 A90 110	0	3.8	779 737 024	1 D1 A90 210

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
39.0 - 43.0	M8	10	16	15	39.0	43.0	66	60	104	25
47.5 - 52.5	M8	10	16	15	47.5	52.5	74	60	112	25
58.0 - 64.0	M8	10	16	25	58.0	64.0	85	75	125	25
72.0 - 80.0	M10	10	16	30	72.0	80.0	108	95	164	40
88.0 - 96.0	M10	10	16	30	88.0	96.0	124	95	170	40
104.0 - 112.0	M10	10	16	30	104.0	112.0	141	95	187	40
108.0 - 115.0	M10	10	16	30	108.0	115.0	141	95	187	40
122.0 - 130.0	M10	10	16	30	122.0	130.0	158	95	202	40
137.0 - 145.0	M12	10	16	40	137.0	145.0	186	110	238	65
157.0 - 165.0	M12	10	16	40	157.0	165.0	205	110	255	65
164.0 - 172.0	M12	10	16	40	164.0	172.0	212	110	262	65

UNI-Combigrip S PN10



Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

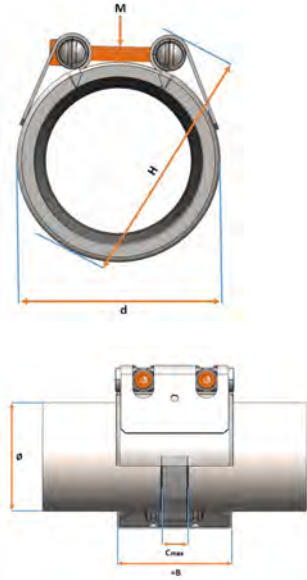
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory

OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
172 - 185	779 724 924	1 D1 A90 111	0	6.2	779 721 924	1 D1 A90 211
195 - 208	779 724 925	1 D1 A90 111	0	6.6	779 721 925	1 D1 A90 211
215 - 228	779 724 926	1 D1 A90 111	0	7.3	779 721 926	1 D1 A90 211
247 - 260	779 724 927	1 D1 A90 111	0	8.1	779 721 927	1 D1 A90 211
269 - 282	779 724 928	1 D1 A90 111	0	8.7	779 721 928	1 D1 A90 211
312 - 325	779 724 929	1 D1 A90 111	0	11.1	779 721 929	1 D1 A90 211
350 - 363	779 724 930	1 D1 A90 111	0	12.2	779 721 930	1 D1 A90 211

OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
172 - 185	M16	10	16	40	172	185	223	142	249	160
195 - 208	M16	10	16	40	195	208	246	142	272	160
215 - 228	M16	10	16	40	215	228	266	142	292	160
247 - 260	M16	10	16	40	247	260	298	142	324	160
269 - 282	M16	10	16	40	269	282	320	142	346	160
312 - 325	M16	10	16	40	312	325	363	142	389	160
350 - 363	M16	10	16	40	350	363	401	142	427	160

UNI-Flex



UNI-Flex L PN16

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

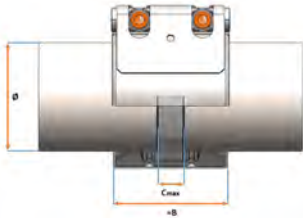
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory

OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
21.0 - 24.0	779 812 001	1 D1 A92 100	0	0.2	779 809 001	1 D1 A92 200
25.0 - 29.0	779 812 002	1 D1 A92 100	0	0.2	779 809 002	1 D1 A92 200
29.0 - 32.0	779 812 003	1 D1 A92 100	0	0.2	779 809 003	1 D1 A92 200
33.0 - 36.0	779 812 004	1 D1 A92 100	0	0.2	779 809 004	1 D1 A92 200
36.0 - 39.0	779 812 005	1 D1 A92 100	0	0.4	779 809 005	1 D1 A92 200
39.0 - 43.0	779 812 006	1 D1 A92 100	0	0.4	779 809 006	1 D1 A92 200
43.0 - 47.5	779 812 007	1 D1 A92 100	0	0.4	779 809 007	1 D1 A92 200
47.5 - 52.5	779 812 008	1 D1 A92 100	0	0.4	779 809 008	1 D1 A92 200
52.5 - 58.0	779 812 009	1 D1 A92 100	0	0.6	779 809 009	1 D1 A92 200
58.0 - 64.0	779 812 010	1 D1 A92 100	0	0.6	779 809 010	1 D1 A92 200
64.0 - 72.0	779 812 011	1 D1 A92 100	0	1.0	779 809 011	1 D1 A92 200
72.0 - 80.0	779 812 012	1 D1 A92 100	0	1.0	779 809 012	1 D1 A92 200
80.0 - 88.0	779 812 013	1 D1 A92 100	0	1.0	779 809 013	1 D1 A92 200
88.0 - 96.0	779 812 014	1 D1 A92 100	0	1.0	779 809 014	1 D1 A92 200
97.0 - 105.0	779 812 015	1 D1 A92 100	0	1.1	779 809 015	1 D1 A92 200
104.0 - 112.0	779 812 016	1 D1 A92 100	0	1.1	779 809 016	1 D1 A92 200
112.0 - 120.0	779 812 017	1 D1 A92 100	0	1.2	779 809 017	1 D1 A92 200
122.0 - 130.0	779 812 018	1 D1 A92 100	0	1.2	779 809 018	1 D1 A92 200
129.0 - 137.0	779 812 019	1 D1 A92 100	0	2.1	779 809 019	1 D1 A92 200
137.0 - 145.0	779 812 020	1 D1 A92 100	0	2.2	779 809 020	1 D1 A92 200
149.0 - 157.0	779 812 021	1 D1 A92 100	0	2.3	779 809 021	1 D1 A92 200
157.0 - 165.0	779 812 022	1 D1 A92 100	0	2.3	779 809 022	1 D1 A92 200
164.0 - 172.0	779 812 023	1 D1 A92 100	0	2.4	779 809 023	1 D1 A92 200

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
21.0 - 24.0	M6	16	25	10	21.0	24.0	46	45	76	3.0
25.0 - 29.0	M6	16	25	10	25.0	29.0	46	45	76	3.0
29.0 - 32.0	M6	16	25	10	29.0	32.0	54	45	84	3.0
33.0 - 36.0	M6	16	25	10	33.0	36.0	54	45	84	3.0
36.0 - 39.0	M8	16	25	15	36.0	39.0	66	60	104	5.0
39.0 - 43.0	M8	16	25	15	39.0	43.0	66	60	104	5.0
43.0 - 47.5	M8	16	25	15	43.0	47.5	74	60	112	5.0
47.5 - 52.5	M8	16	25	15	47.5	52.5	74	60	112	5.0
52.5 - 58.0	M8	16	25	25	52.5	58.0	85	75	125	5.0
58.0 - 64.0	M8	16	25	25	58.0	64.0	85	75	125	5.0
64.0 - 72.0	M10	16	25	30	64.0	72.0	108	95	164	10.0
72.0 - 80.0	M10	16	25	30	72.0	80.0	108	95	164	10.0
80.0 - 88.0	M10	16	25	30	80.0	88.0	124	95	170	10.0
88.0 - 96.0	M10	16	25	30	88.0	96.0	124	95	170	10.0
97.0 - 105.0	M10	16	25	30	97.0	105.0	141	95	187	10.0
104.0 - 112.0	M10	16	25	30	104.0	112.0	141	95	187	10.0
112.0 - 120.0	M10	16	25	30	112.0	120.0	158	95	202	12.5
122.0 - 130.0	M10	16	25	30	122.0	130.0	158	95	202	12.5
129.0 - 137.0	M12	16	25	40	129.0	137.0	178	110	230	20.0

table continued on the next page



OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
137.0 - 145.0	M12	16	25	40	137.0	145.0	186	110	238	25.0
149.0 - 157.0	M12	16	25	40	149.0	157.0	197	110	249	30.0
157.0 - 165.0	M12	16	25	40	157.0	165.0	205	110	255	30.0
164.0 - 172.0	M12	16	25	40	164.0	172.0	212	110	262	30.0

UNI-Flex S PN16



Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

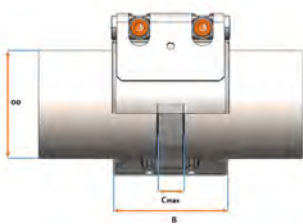
- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

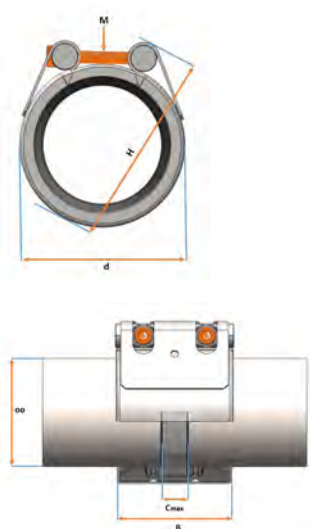
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory



OD nominal (mm) (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
185 - 198	779 864 024	1 D1 A92 101	0	5.0	779 862 024	1 D1 A92 201
198 - 211	779 864 025	1 D1 A92 101	0	5.2	779 862 025	1 D1 A92 201
210 - 223	779 864 026	1 D1 A92 101	0	5.3	779 862 026	1 D1 A92 201
221 - 234	779 864 027	1 D1 A92 101	0	5.5	779 862 027	1 D1 A92 201
234 - 247	779 864 028	1 D1 A92 101	0	5.6	779 862 028	1 D1 A92 201
247 - 260	779 864 029	1 D1 A92 101	0	5.8	779 862 029	1 D1 A92 201
263 - 276	779 864 030	1 D1 A92 101	0	6.0	779 862 030	1 D1 A92 201
277 - 290	779 864 031	1 D1 A92 101	0	7.6	779 862 031	1 D1 A92 201
288 - 301	779 864 032	1 D1 A92 101	0	7.8	779 862 032	1 D1 A92 201
301 - 314	779 864 033	1 D1 A92 101	0	8.0	779 862 033	1 D1 A92 201
315 - 328	779 864 034	1 D1 A92 101	0	8.2	779 862 034	1 D1 A92 201
327 - 340	779 864 035	1 D1 A92 101	0	8.4	779 862 035	1 D1 A92 201
340 - 353	779 864 036	1 D1 A92 101	0	8.6	779 862 036	1 D1 A92 201
350 - 363	779 864 037	1 D1 A92 101	0	8.8	779 862 037	1 D1 A92 201
361 - 374	779 864 038	1 D1 A92 101	0	12.6	779 862 038	1 D1 A92 201
374 - 387	779 864 039	1 D1 A92 101	0	12.9	779 862 039	1 D1 A92 201
387 - 400	779 864 040	1 D1 A92 101	0	13.3	779 862 040	1 D1 A92 201
400 - 413	779 864 041	1 D1 A92 101	0	13.6	779 862 041	1 D1 A92 201
412 - 425	779 864 042	1 D1 A92 101	0	13.9	779 862 042	1 D1 A92 201
422 - 435	779 864 043	1 D1 A92 101	0	14.1	779 862 043	1 D1 A92 201
438 - 451	779 864 044	1 D1 A92 101	0	14.5	779 862 044	1 D1 A92 201
451 - 464	779 864 045	1 D1 A92 101	0	14.9	779 862 045	1 D1 A92 201
460 - 473	779 864 046	1 D1 A92 101	0	15.1	779 862 046	1 D1 A92 201
476 - 489	779 864 047	1 D1 A92 101	0	15.5	779 862 047	1 D1 A92 201
488 - 501	779 864 048	1 D1 A92 101	0	15.8	779 862 048	1 D1 A92 201
503 - 516	779 864 049	1 D1 A92 101	0	16.2	779 862 049	1 D1 A92 201
520 - 533	779 864 050	1 D1 A92 101	0	16.6	779 862 050	1 D1 A92 201

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OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
531 - 544	779 864 051	1 D1 A92 101	0	16.9	779 862 051	1 D1 A92 201
546 - 559	779 864 052	1 D1 A92 101	0	17.2	779 862 052	1 D1 A92 201
557 - 570	779 864 053	1 D1 A92 101	0	17.5	779 862 053	1 D1 A92 201
571 - 584	779 864 054	1 D1 A92 101	0	17.9	779 862 054	1 D1 A92 201
600 - 613	779 864 055	1 D1 A92 101	0	18.6	779 862 055	1 D1 A92 201
610 - 623	779 864 056	1 D1 A92 101	0	18.9	779 862 056	1 D1 A92 201
628 - 641	779 864 057	1 D1 A92 101	0	19.3	779 862 057	1 D1 A92 201
648 - 661	779 864 058	1 D1 A92 101	0	19.8	779 862 058	1 D1 A92 201
676 - 689	779 864 059	1 D1 A92 101	0	20.5	779 862 059	1 D1 A92 201
688 - 701	779 864 060	1 D1 A92 101	0	20.8	779 862 060	1 D1 A92 201
700 - 713	779 864 061	1 D1 A92 101	0	21.1	779 862 061	1 D1 A92 201
717 - 730	779 864 062	1 D1 A92 101	0	21.5	779 862 062	1 D1 A92 201
732 - 745	779 864 063	1 D1 A92 101	0	21.9	779 862 063	1 D1 A92 201

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
185 - 198	M12	16	25	40	185	198	236	140	262	30
198 - 211	M12	16	25	40	198	211	249	140	275	30
210 - 223	M12	16	25	40	210	223	261	140	287	30
221 - 234	M12	16	25	40	221	234	272	140	298	30
234 - 247	M12	16	25	40	234	247	285	140	311	30
247 - 260	M12	16	25	40	247	260	298	140	324	30
263 - 276	M12	16	25	40	263	276	314	140	340	30
277 - 290	M16	16	25	40	277	290	328	142	354	30
288 - 301	M16	16	25	40	288	301	339	142	365	30
301 - 314	M16	16	25	40	301	314	352	142	378	30
315 - 328	M16	16	25	40	315	328	366	142	392	30
327 - 340	M16	16	25	40	327	340	378	142	404	50
340 - 353	M16	16	25	40	340	353	391	142	417	50
350 - 363	M16	16	25	40	350	363	401	142	427	50
361 - 374	M16	16	25	40	361	374	412	146	438	50
374 - 387	M16	16	25	40	374	387	425	146	451	50
387 - 400	M16	16	25	40	387	400	438	146	464	50
400 - 413	M16	16	25	40	400	413	451	146	477	50
412 - 425	M16	16	25	40	412	425	463	146	489	50
422 - 435	M16	16	25	40	422	435	473	146	499	50
438 - 451	M16	16	25	40	438	451	489	146	515	50
451 - 464	M16	16	25	40	451	464	502	146	528	50
460 - 473	M16	16	25	40	460	473	511	146	537	50
476 - 489	M16	16	25	40	476	489	527	146	553	50
488 - 501	M16	16	25	40	488	501	539	146	565	50
503 - 516	M16	16	25	40	503	516	554	146	580	50
520 - 533	M16	16	25	40	520	533	575	146	603	60
531 - 544	M16	16	25	40	531	544	586	146	614	60
546 - 559	M16	16	25	40	546	559	601	146	629	60
557 - 570	M16	16	25	40	557	570	612	146	640	60
571 - 584	M16	16	25	40	571	584	626	146	654	60
600 - 613	M16	16	25	40	600	613	655	146	683	60
610 - 623	M16	16	25	40	610	623	665	146	693	70
628 - 641	M16	16	25	40	628	641	683	146	711	70
648 - 661	M16	16	25	40	648	661	703	146	731	70
676 - 689	M16	16	25	40	676	689	731	146	759	70
688 - 701	M16	16	25	40	688	701	743	146	771	70
700 - 713	M16	16	25	40	700	713	755	146	783	70
717 - 730	M16	16	25	40	717	730	772	146	800	70
732 - 745	M16	16	25	40	732	745	787	146	815	70

UNI-Flex S2 PN16



Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

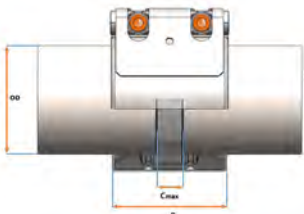
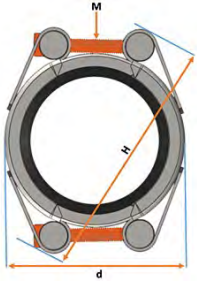
- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
756 - 782	779 864 064	1 D1 A92 101	0	26.1	779 862 064	1 D1 A92 201
782 - 808	779 864 065	1 D1 A92 101	0	26.7	779 862 065	1 D1 A92 201
806 - 832	779 864 066	1 D1 A92 101	0	27.3	779 862 066	1 D1 A92 201
828 - 854	779 864 067	1 D1 A92 101	0	27.9	779 862 067	1 D1 A92 201
856 - 882	779 864 068	1 D1 A92 101	0	28.6	779 862 068	1 D1 A92 201
882 - 908	779 864 069	1 D1 A92 101	0	29.2	779 862 069	1 D1 A92 201
904 - 930	779 864 070	1 D1 A92 101	0	29.8	779 862 070	1 D1 A92 201

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
756 - 782	M16	16	25	40	756	782	824	146	852	70
782 - 808	M16	16	25	40	782	808	850	146	878	70
806 - 832	M16	16	25	40	806	832	874	146	902	70
828 - 854	M16	16	25	40	828	854	896	146	924	80
856 - 882	M16	16	25	40	856	882	924	146	952	80
882 - 908	M16	16	25	40	882	908	950	146	978	80
904 - 930	M16	16	25	40	904	930	972	146	1000	80

UNI-Flex S PN10



Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

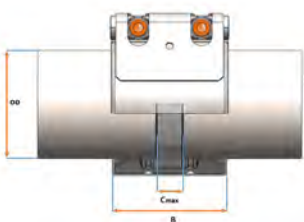
- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

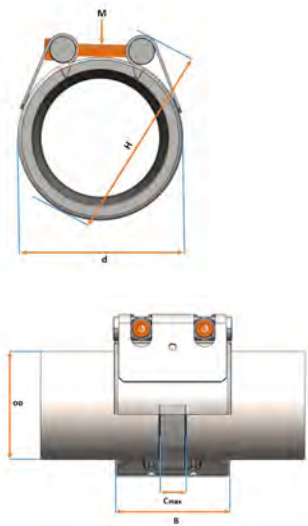
Remark:

- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
185 - 198	779 864 124	1 D1 A92 111	0	3.9	779 862 124	1 D1 A92 211
198 - 211	779 864 125	1 D1 A92 111	0	4.0	779 862 125	1 D1 A92 211
210 - 223	779 864 126	1 D1 A92 111	0	4.1	779 862 126	1 D1 A92 211
221 - 234	779 864 127	1 D1 A92 111	0	4.2	779 862 127	1 D1 A92 211
234 - 247	779 864 128	1 D1 A92 111	0	4.3	779 862 128	1 D1 A92 211
247 - 260	779 864 129	1 D1 A92 111	0	4.4	779 862 129	1 D1 A92 211
263 - 276	779 864 130	1 D1 A92 111	0	4.6	779 862 130	1 D1 A92 211
277 - 290	779 864 131	1 D1 A92 111	0	6.1	779 862 131	1 D1 A92 211
288 - 301	779 864 132	1 D1 A92 111	0	6.3	779 862 132	1 D1 A92 211
301 - 314	779 864 133	1 D1 A92 111	0	6.4	779 862 133	1 D1 A92 211
315 - 328	779 864 134	1 D1 A92 111	0	6.6	779 862 134	1 D1 A92 211
327 - 340	779 864 135	1 D1 A92 111	0	6.8	779 862 135	1 D1 A92 211
340 - 353	779 864 136	1 D1 A92 111	0	6.9	779 862 136	1 D1 A92 211
350 - 363	779 864 137	1 D1 A92 111	0	7.0	779 862 137	1 D1 A92 211

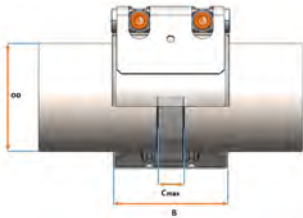
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OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
361 - 374	779 864 138	1 D1 A92 111	0	8.9	779 862 138	1 D1 A92 211
374 - 387	779 864 139	1 D1 A92 111	0	9.1	779 862 139	1 D1 A92 211
387 - 400	779 864 140	1 D1 A92 111	0	9.4	779 862 140	1 D1 A92 211
400 - 413	779 864 141	1 D1 A92 111	0	9.6	779 862 141	1 D1 A92 211
412 - 425	779 864 142	1 D1 A92 111	0	9.8	779 862 142	1 D1 A92 211
422 - 435	779 864 143	1 D1 A92 111	0	9.9	779 862 143	1 D1 A92 211
438 - 451	779 864 144	1 D1 A92 111	0	10.2	779 862 144	1 D1 A92 211
451 - 464	779 864 145	1 D1 A92 111	0	10.4	779 862 145	1 D1 A92 211
460 - 473	779 864 146	1 D1 A92 111	0	10.5	779 862 146	1 D1 A92 211
476 - 489	779 864 147	1 D1 A92 111	0	10.8	779 862 147	1 D1 A92 211
488 - 501	779 864 148	1 D1 A92 111	0	11.0	779 862 148	1 D1 A92 211
503 - 516	779 864 149	1 D1 A92 111	0	11.2	779 862 149	1 D1 A92 211
520 - 533	779 864 150	1 D1 A92 111	0	11.5	779 862 150	1 D1 A92 211
531 - 544	779 864 151	1 D1 A92 111	0	11.7	779 862 151	1 D1 A92 211
546 - 559	779 864 152	1 D1 A92 111	0	11.9	779 862 152	1 D1 A92 211
557 - 570	779 864 153	1 D1 A92 111	0	12.1	779 862 153	1 D1 A92 211
571 - 584	779 864 154	1 D1 A92 111	0	12.3	779 862 154	1 D1 A92 211
600 - 613	779 864 155	1 D1 A92 111	0	12.8	779 862 155	1 D1 A92 211
610 - 623	779 864 156	1 D1 A92 111	0	12.9	779 862 156	1 D1 A92 211
628 - 641	779 864 157	1 D1 A92 111	0	13.2	779 862 157	1 D1 A92 211
648 - 661	779 864 158	1 D1 A92 111	0	13.5	779 862 158	1 D1 A92 211
676 - 689	779 864 159	1 D1 A92 111	0	14.0	779 862 159	1 D1 A92 211
688 - 701	779 864 160	1 D1 A92 111	0	14.2	779 862 160	1 D1 A92 211
700 - 713	779 864 161	1 D1 A92 111	0	14.4	779 862 161	1 D1 A92 211
717 - 730	779 864 162	1 D1 A92 111	0	14.7	779 862 162	1 D1 A92 211
732 - 745	779 864 163	1 D1 A92 111	0	14.9	779 862 163	1 D1 A92 211

OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
185 - 198	M12	10	16	40	185	198	236	138	262	30
198 - 211	M12	10	16	40	198	211	249	138	275	30
210 - 223	M12	10	16	40	210	223	261	138	287	30
221 - 234	M12	10	16	40	221	234	272	138	298	30
234 - 247	M12	10	16	40	234	247	285	138	311	30
247 - 260	M12	10	16	40	247	260	298	138	324	30
263 - 276	M12	10	16	40	263	276	314	138	340	30
277 - 290	M12	10	16	40	277	290	328	140	354	30
288 - 301	M12	10	16	40	288	301	339	140	365	30
301 - 314	M12	10	16	40	301	314	352	140	378	30
315 - 328	M12	10	16	40	315	328	366	140	392	30
327 - 340	M12	10	16	40	327	340	378	140	404	40
340 - 353	M12	10	16	40	340	353	391	140	417	40
350 - 363	M12	10	16	40	350	363	401	140	427	40
361 - 374	M12	10	16	40	361	374	412	142	438	40
374 - 387	M12	10	16	40	374	387	425	142	451	40
387 - 400	M12	10	16	40	387	400	438	142	464	40
400 - 413	M12	10	16	40	400	413	451	142	477	40
412 - 425	M12	10	16	40	412	425	463	142	489	40
422 - 435	M12	10	16	40	422	435	473	142	499	40
438 - 451	M12	10	16	40	438	451	489	142	515	40
451 - 464	M12	10	16	40	451	464	502	142	528	40
460 - 473	M12	10	16	40	460	473	511	142	537	40
476 - 489	M12	10	16	40	476	489	527	142	553	40
488 - 501	M12	10	16	40	488	501	539	142	565	40
503 - 516	M12	10	16	40	503	516	554	142	580	40
520 - 533	M16	10	16	40	520	533	575	142	603	50
531 - 544	M16	10	16	40	531	544	586	142	614	50
546 - 559	M16	10	16	40	546	559	601	142	629	50
557 - 570	M16	10	16	40	557	570	612	142	640	50
571 - 584	M16	10	16	40	571	584	626	142	654	50
600 - 613	M16	10	16	40	600	613	655	142	683	50

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OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
610 - 623	M16	10	16	40	610	623	665	142	693	60
628 - 641	M16	10	16	40	628	641	683	142	711	60
648 - 661	M16	10	16	40	648	661	703	142	731	60
676 - 689	M16	10	16	40	676	689	731	142	759	60
688 - 701	M16	10	16	40	688	701	743	142	771	60
700 - 713	M16	10	16	40	700	713	755	142	783	60
717 - 730	M16	10	16	40	717	730	772	142	800	60
732 - 745	M16	10	16	40	732	745	787	142	815	60

UNI-Flex S2/S3 PN10

Model:

- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

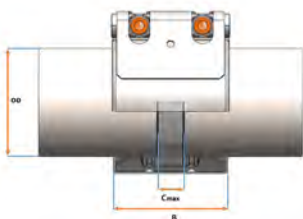
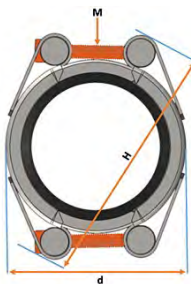
- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

- Sealing type Viton on request

Remark:

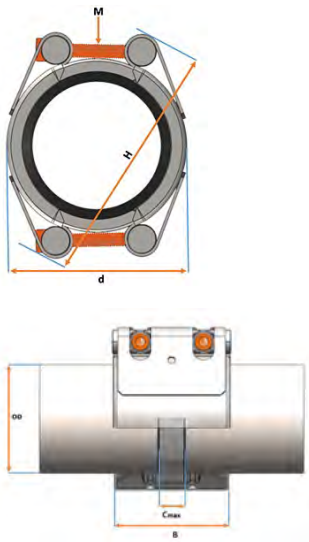
- For safe installation on PVC-, ABS-, PE-, PP- and PB-pipes insert stiffeners are mandatory



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
756 - 782	779 864 164	1 D1 A92 111	0	18.4	779 862 164	1 D1 A92 211
782 - 808	779 864 165	1 D1 A92 111	0	18.8	779 862 165	1 D1 A92 211
806 - 832	779 864 166	1 D1 A92 111	0	19.2	779 862 166	1 D1 A92 211
828 - 854	779 864 167	1 D1 A92 111	0	19.6	779 862 167	1 D1 A92 211
856 - 882	779 864 168	1 D1 A92 111	0	20.0	779 862 168	1 D1 A92 211
882 - 908	779 864 169	1 D1 A92 111	0	20.4	779 862 169	1 D1 A92 211
904 - 930	779 864 170	1 D1 A92 111	0	20.8	779 862 170	1 D1 A92 211
936 - 962	779 864 171	1 D1 A92 111	0	30.6	779 862 171	1 D1 A92 211
961 - 987	779 864 172	1 D1 A92 111	0	31.2	779 862 172	1 D1 A92 211
984 - 1010	779 864 173	1 D1 A92 111	0	31.8	779 862 173	1 D1 A92 211
1004 - 1030	779 864 174	1 D1 A92 111	0	32.3	779 862 174	1 D1 A92 211
1044 - 1070	779 864 175	1 D1 A92 111	0	33.3	779 862 175	1 D1 A92 211
1076 - 1102	779 864 176	1 D1 A92 111	0	34.1	779 862 176	1 D1 A92 211
1104 - 1130	779 864 177	1 D1 A92 111	0	34.8	779 862 177	1 D1 A92 211
1138 - 1177	779 864 178	1 D1 A92 111	0	39.2	779 862 178	1 D1 A92 211
1192 - 1231	779 864 179	1 D1 A92 111	0	40.6	779 862 179	1 D1 A92 211
1241 - 1280	779 864 180	1 D1 A92 111	0	41.8	779 862 180	1 D1 A92 211
1331 - 1370	779 864 181	1 D1 A92 111	0	44.1	779 862 181	1 D1 A92 211
1413 - 1452	779 864 182	1 D1 A92 111	0	46.1	779 862 182	1 D1 A92 211

OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
756 - 782	M16	10	16	40	756	782	824	142	852	60
782 - 808	M16	10	16	40	782	808	850	142	878	60
806 - 832	M16	10	16	40	806	832	874	142	902	60
828 - 854	M16	10	16	40	828	854	896	142	924	60
856 - 882	M16	10	16	40	856	882	924	142	952	60
882 - 908	M16	10	16	40	882	908	950	142	978	60
904 - 930	M16	10	16	40	904	930	972	142	1000	60

table continued on the next page



OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
936 - 962	M16	10	16	40	936	962	1004	146	1032	60
961 - 987	M16	10	16	40	961	987	1029	146	1057	60
984 - 1010	M16	10	16	40	984	1010	1052	146	1080	60
1004 - 1030	M16	10	16	40	1004	1030	1072	146	1100	60
1044 - 1070	M16	10	16	40	1044	1070	1116	146	1146	80
1076 - 1102	M16	10	16	40	1076	1102	1148	146	1178	80
1104 - 1130	M16	10	16	40	1104	1130	1176	146	1206	80
1138 - 1177	M16	10	16	40	1138	1177	1223	146	1253	80
1192 - 1231	M16	10	16	40	1192	1231	1277	146	1307	80
1241 - 1280	M16	10	16	40	1241	1280	1326	146	1356	80
1331 - 1370	M16	10	16	40	1331	1370	1416	146	1446	80
1413 - 1452	M16	10	16	40	1413	1452	1498	146	1528	80

UNI-Rep



UNI-Rep L PN16

Model:

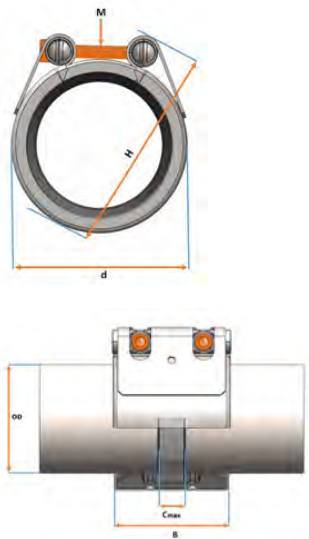
- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

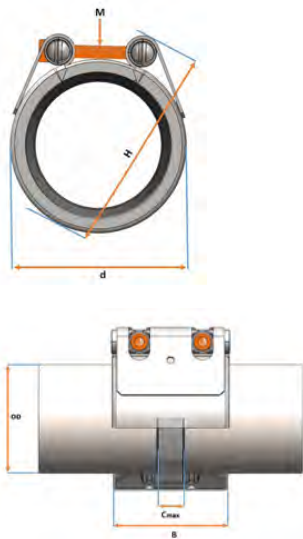
- Sealing type Viton on request



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
36.0 - 39.0	779 912 005	1 D1 A91 100	0	0.4	779 909 005	1 D1 A91 200
39.0 - 43.0	779 912 006	1 D1 A91 100	0	0.4	779 909 006	1 D1 A91 200
43.0 - 47.5	779 912 007	1 D1 A91 100	0	0.4	779 909 007	1 D1 A91 200
47.5 - 52.5	779 912 008	1 D1 A91 100	0	0.4	779 909 008	1 D1 A91 200
52.5 - 58.0	779 912 009	1 D1 A91 100	0	0.6	779 909 009	1 D1 A91 200
58.0 - 64.0	779 912 010	1 D1 A91 100	0	0.6	779 909 010	1 D1 A91 200
64.0 - 72.0	779 912 011	1 D1 A91 100	0	1.0	779 909 011	1 D1 A91 200
72.0 - 80.0	779 912 012	1 D1 A91 100	0	1.0	779 909 012	1 D1 A91 200
80.0 - 88.0	779 912 013	1 D1 A91 100	0	1.0	779 909 013	1 D1 A91 200
88.0 - 96.0	779 912 014	1 D1 A91 100	0	1.0	779 909 014	1 D1 A91 200
97.0 - 105.0	779 912 015	1 D1 A91 100	0	1.1	779 909 015	1 D1 A91 200
104.0 - 112.0	779 912 016	1 D1 A91 100	0	1.1	779 909 016	1 D1 A91 200
112.0 - 120.0	779 912 017	1 D1 A91 100	0	1.2	779 909 017	1 D1 A91 200
122.0 - 130.0	779 912 018	1 D1 A91 100	0	1.2	779 909 018	1 D1 A91 200
129.0 - 137.0	779 912 019	1 D1 A91 100	0	2.1	779 909 019	1 D1 A91 200
137.0 - 145.0	779 912 020	1 D1 A91 100	0	2.2	779 909 020	1 D1 A91 200
149.0 - 157.0	779 912 021	1 D1 A91 100	0	2.3	779 909 021	1 D1 A91 200
157.0 - 165.0	779 912 022	1 D1 A91 100	0	2.3	779 909 022	1 D1 A91 200
164.0 - 172.0	779 912 023	1 D1 A91 100	0	2.4	779 909 023	1 D1 A91 200

OD nominal (mm)	M	PN	WP	C max.	OD min	OD max.	d	B	H	Torque
(mm)	(bar)	(bar)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(N/m)
36.0 - 39.0	M8	16	60	15	36.0	39.0	66	60	104	5.0
39.0 - 43.0	M8	16	50	15	39.0	43.0	66	60	104	5.0
43.0 - 47.5	M8	16	50	15	43.0	47.5	74	60	112	5.0
47.5 - 52.5	M8	16	50	15	47.5	52.5	74	60	112	5.0
52.5 - 58.0	M8	16	50	25	52.5	58.0	85	75	125	5.0

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OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
58.0 - 64.0	M8	16	40	25	58.0	64.0	85	75	125	5.0
64.0 - 72.0	M10	16	40	30	64.0	72.0	108	95	164	10.0
72.0 - 80.0	M10	16	40	30	72.0	80.0	108	95	164	10.0
80.0 - 88.0	M10	16	35	30	80.0	88.0	124	95	170	10.0
88.0 - 96.0	M10	16	35	30	88.0	96.0	124	95	170	10.0
97.0 - 105.0	M10	16	35	30	97.0	105.0	141	95	187	10.0
104.0 - 112.0	M10	16	35	30	104.0	112.0	141	95	187	10.0
112.0 - 120.0	M10	16	35	30	112.0	120.0	158	95	202	12.5
122.0 - 130.0	M10	16	32	30	122.0	130.0	158	95	202	12.5
129.0 - 137.0	M12	16	32	40	129.0	137.0	178	110	230	20.0
137.0 - 145.0	M12	16	32	40	137.0	145.0	186	110	238	25.0
149.0 - 157.0	M12	16	32	40	149.0	157.0	197	110	249	30.0
157.0 - 165.0	M12	16	32	40	157.0	165.0	205	110	255	30.0
164.0 - 172.0	M12	16	32	40	164.0	172.0	212	110	262	30.0

UNI-Rep S2 PN16

Model:

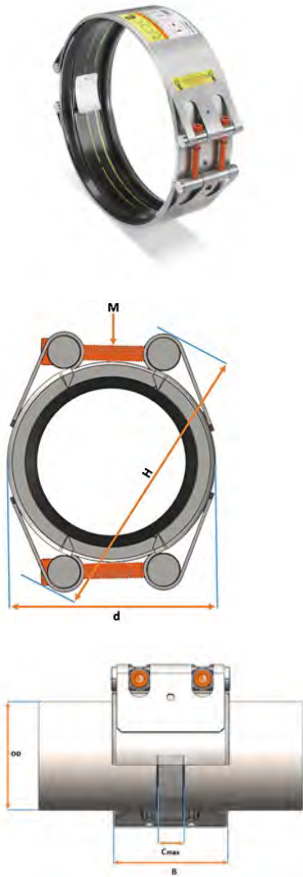
- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

Option:

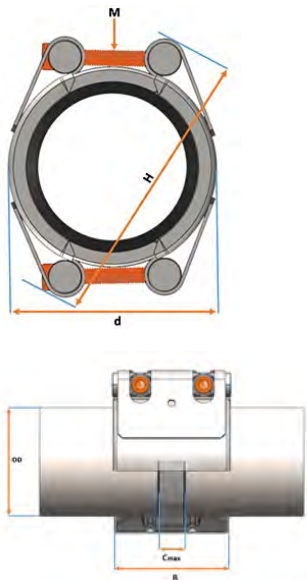
- Sealing type Viton on request



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
172 - 198	779 964 024	1 D1 A91 101	0	7.8	779 962 024	1 D1 A91 201
197 - 223	779 964 026	1 D1 A91 101	0	8.1	779 962 026	1 D1 A91 201
221 - 247	779 964 028	1 D1 A91 101	0	8.4	779 962 028	1 D1 A91 201
250 - 276	779 964 030	1 D1 A91 101	0	8.7	779 962 030	1 D1 A91 201
275 - 301	779 964 032	1 D1 A91 101	0	10.8	779 962 032	1 D1 A91 201
302 - 328	779 964 034	1 D1 A91 101	0	11.3	779 962 034	1 D1 A91 201
327 - 353	779 964 036	1 D1 A91 101	0	11.7	779 962 036	1 D1 A91 201
348 - 374	779 964 038	1 D1 A91 101	0	16.1	779 962 038	1 D1 A91 201
374 - 400	779 964 040	1 D1 A91 101	0	16.8	779 962 040	1 D1 A91 201
399 - 425	779 964 042	1 D1 A91 101	0	17.4	779 962 042	1 D1 A91 201
425 - 451	779 964 044	1 D1 A91 101	0	18.0	779 962 044	1 D1 A91 201
447 - 473	779 964 046	1 D1 A91 101	0	18.6	779 962 046	1 D1 A91 201
475 - 501	779 964 048	1 D1 A91 101	0	19.3	779 962 048	1 D1 A91 201
490 - 516	779 964 049	1 D1 A91 101	0	19.7	779 962 049	1 D1 A91 201
507 - 533	779 964 050	1 D1 A91 101	0	20.1	779 962 050	1 D1 A91 201
533 - 559	779 964 052	1 D1 A91 101	0	20.7	779 962 052	1 D1 A91 201
558 - 584	779 964 054	1 D1 A91 101	0	21.4	779 962 054	1 D1 A91 201
587 - 613	779 964 055	1 D1 A91 101	0	22.1	779 962 055	1 D1 A91 201
615 - 641	779 964 057	1 D1 A91 101	0	22.8	779 962 057	1 D1 A91 201
635 - 661	779 964 058	1 D1 A91 101	0	23.3	779 962 058	1 D1 A91 201
663 - 689	779 964 059	1 D1 A91 101	0	24.0	779 962 059	1 D1 A91 201
687 - 713	779 964 061	1 D1 A91 101	0	24.6	779 962 061	1 D1 A91 201
704 - 730	779 964 062	1 D1 A91 101	0	25.0	779 962 062	1 D1 A91 201
719 - 745	779 964 063	1 D1 A91 101	0	25.4	779 962 063	1 D1 A91 201

OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
172 - 198	M12	16	25	40	172	198	236	140	262	30
197 - 223	M12	16	25	40	197	223	261	140	287	30
221 - 247	M12	16	25	40	221	247	285	140	311	30

table continued on the next page



OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
250 - 276	M12	16	25	40	250	276	314	140	340	30
275 - 301	M16	16	25	40	275	301	339	142	365	30
302 - 328	M16	16	25	40	302	328	366	142	392	30
327 - 353	M16	16	25	40	327	353	391	142	417	50
348 - 374	M16	16	25	40	348	374	412	146	438	50
374 - 400	M16	16	25	40	374	400	438	146	464	50
399 - 425	M16	16	25	40	399	425	463	146	489	50
425 - 451	M16	16	25	40	425	451	489	146	515	50
447 - 473	M16	16	25	40	447	473	511	146	537	50
475 - 501	M16	16	25	40	475	501	539	146	565	50
490 - 516	M16	16	25	40	490	516	554	146	580	50
507 - 533	M16	16	25	40	523	533	575	146	603	60
533 - 559	M16	16	25	40	533	559	601	146	629	60
558 - 584	M16	16	25	40	558	584	626	146	654	60
587 - 613	M16	16	25	40	587	613	655	146	683	60
615 - 641	M16	16	25	40	615	641	683	146	711	70
635 - 661	M16	16	25	40	635	661	703	146	731	70
663 - 689	M16	16	25	40	663	689	731	146	759	70
687 - 713	M16	16	25	40	687	713	755	146	783	70
704 - 730	M16	16	25	40	704	730	772	146	800	70
719 - 745	M16	16	25	40	719	745	787	146	815	70

UNI-Rep S2 PN10



Model:

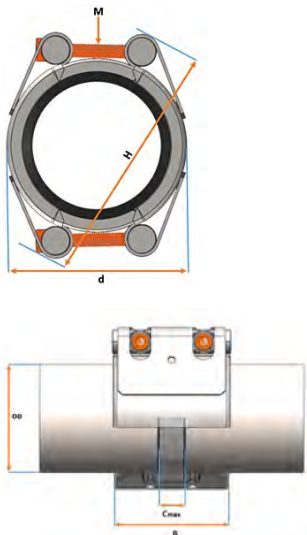
- Housing, Bars and Strip insert (option): Stainless Steel W5 (1.4571) Quality

Temperature/Pressure:

- Operating temperature EPDM: -30°C to 125°C
- Operating temperature NBR: -20°C to 80°C

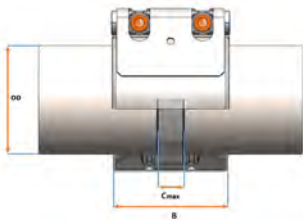
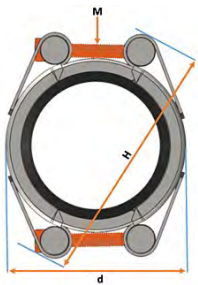
Option:

- Sealing type Viton on request



OD nominal (mm)	EPDM Code	PF	SP	Weight (kg)	NBR Code	PF
172 - 198	779 964 124	1 D1 A91 111	0	6.4	779 962 124	1 D1 A91 211
197 - 223	779 964 126	1 D1 A91 111	0	6.6	779 962 126	1 D1 A91 211
221 - 247	779 964 128	1 D1 A91 111	0	6.8	779 962 128	1 D1 A91 211
250 - 276	779 964 130	1 D1 A91 111	0	7.0	779 962 130	1 D1 A91 211
275 - 301	779 964 132	1 D1 A91 111	0	9.0	779 962 132	1 D1 A91 211
302 - 328	779 964 134	1 D1 A91 111	0	9.4	779 962 134	1 D1 A91 211
327 - 353	779 964 136	1 D1 A91 111	0	9.7	779 962 136	1 D1 A91 211
348 - 374	779 964 138	1 D1 A91 111	0	12.0	779 962 138	1 D1 A91 211
374 - 400	779 964 140	1 D1 A91 111	0	12.4	779 962 140	1 D1 A91 211
399 - 425	779 964 142	1 D1 A91 111	0	12.8	779 962 142	1 D1 A91 211
425 - 451	779 964 144	1 D1 A91 111	0	13.2	779 962 144	1 D1 A91 211
447 - 473	779 964 146	1 D1 A91 111	0	13.6	779 962 146	1 D1 A91 211
475 - 501	779 964 148	1 D1 A91 111	0	14.1	779 962 148	1 D1 A91 211
490 - 516	779 964 149	1 D1 A91 111	0	14.3	779 962 149	1 D1 A91 211
507 - 533	779 964 150	1 D1 A91 111	0	14.6	779 962 150	1 D1 A91 211
533 - 559	779 964 152	1 D1 A91 111	0	15.0	779 962 152	1 D1 A91 211
558 - 584	779 964 154	1 D1 A91 111	0	15.4	779 962 154	1 D1 A91 211
587 - 613	779 964 155	1 D1 A91 111	0	15.9	779 962 155	1 D1 A91 211
615 - 641	779 964 157	1 D1 A91 111	0	16.3	779 962 157	1 D1 A91 211
635 - 661	779 964 158	1 D1 A91 111	0	16.6	779 962 158	1 D1 A91 211
663 - 689	779 964 159	1 D1 A91 111	0	17.1	779 962 159	1 D1 A91 211
687 - 713	779 964 161	1 D1 A91 111	0	17.5	779 962 161	1 D1 A91 211
704 - 730	779 964 162	1 D1 A91 111	0	17.7	779 962 162	1 D1 A91 211
719 - 745	779 964 163	1 D1 A91 111	0	18.0	779 962 163	1 D1 A91 211

table continued on the next page



OD nominal (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
172 - 198	M12	10	16	40	172	198	236	138	262	30
197 - 223	M12	10	16	40	197	223	261	138	287	30
221 - 247	M12	10	16	40	221	247	285	138	311	30
250 - 276	M12	10	16	40	250	276	314	138	340	30
275 - 301	M12	10	16	40	275	301	339	140	365	30
302 - 328	M12	10	16	40	302	328	366	140	392	30
327 - 353	M12	10	16	40	327	353	391	140	417	40
348 - 374	M12	10	16	40	348	374	412	142	438	40
374 - 400	M12	10	16	40	374	400	438	142	464	40
399 - 425	M12	10	16	40	399	425	463	142	489	40
425 - 451	M12	10	16	40	425	451	489	142	515	40
447 - 473	M12	10	16	40	447	473	511	142	537	40
475 - 501	M12	10	16	40	475	501	539	142	565	40
490 - 516	M12	10	16	40	490	516	554	142	580	40
507 - 533	M16	10	16	40	507	533	575	142	603	50
533 - 559	M16	10	16	40	533	559	601	142	629	50
558 - 584	M16	10	16	40	558	584	626	142	654	50
587 - 613	M16	10	16	40	587	613	655	142	683	50
615 - 641	M16	10	16	40	615	641	683	142	711	60
635 - 661	M16	10	16	40	635	661	703	142	731	60
663 - 689	M16	10	16	40	663	689	731	142	759	60
687 - 713	M16	10	16	40	687	713	755	142	783	60
704 - 730	M16	10	16	40	704	730	772	142	800	60
719 - 745	M16	10	16	40	719	745	787	142	815	60

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108-128L400N	149	700 618 953	120	709 026 188	117	709 301 010	90
108-128L500N	149	700 618 954	120	709 026 189	117	709 301 012	90
118-138L300N	148	700 618 955	120	709 026 191	118	709 301 014	90
118-138L400N	149	700 618 956	120	709 026 192	118	709 301 016	90
118-138L500N	149	700 618 957	120	709 026 195	118	709 301 018	90
133-153L300N	148	700 618 958	120	709 026 196	118	709 301 020	90
133-153L400N	149	700 618 959	120	709 026 198	118	709 301 024	90
133-153L500N	149	700 618 960	120	709 026 199	118	709 301 026	90
143-163L300N	148	700 618 961	120	709 026 203	116	709 301 028	90
143-163L400N	149	700 618 962	120	709 026 206	116	709 301 032	90
143-163L500N	149	700 619 010	120	709 026 211	116	709 301 036	90
160-180L300N	148	700 619 012	120	709 026 214	116	709 301 040	90
160-180L400N	149	709 026 012	117	709 026 217	116	709 301 042	90
160-180L500N	149	709 026 016	117	709 026 220	116	709 301 072	90
180-200L300N	148	709 026 018	117	709 026 223	116	709 301 073	90
180-200L400N	149	709 026 022	117	709 026 227	116	709 301 074	90
180-200L500N	150	709 026 026	117	709 026 230	116	709 301 076	90
190-210L300N	148	709 026 032	117	709 026 233	116	709 301 078	90
190-210L400N	149	709 026 036	117	709 026 236	116	709 301 210	90
190-210L500N	150	709 026 038	117	709 026 238	116	709 301 212	90
200 008 070	121	709 026 042	117	709 026 242	116	709 301 214	90
200 008 071	121	709 026 046	117	709 026 245	116	709 301 216	90
200 008 072	121	709 026 048	117	709 026 248	116	709 301 218	90
200 008 073	121	709 026 052	117	709 026 250	116	709 301 220	90
200 008 083	121	709 026 056	117	709 026 254	116	709 301 224	90
200 008 084	121	709 026 062	117	709 026 257	116	709 301 226	90
210-230L300N	148	709 026 066	117	709 026 266	116	709 301 228	90
210-230L400N	149	709 026 070	117	709 026 269	116	709 301 232	90
210-230L500N	150	709 026 072	117	709 026 278	116	709 301 236	90
230-250L300N	148	709 026 076	117	709 026 281	116	709 301 240	90
230-250L400N	149	709 026 082	117	709 026 284	116	709 301 242	90
230-250L500N	150	709 026 086	117	709 026 286	116	709 301 272	90
240-260L300N	148	709 026 092	117	709 026 290	116	709 301 273	90
240-260L400N	149	709 026 096	117	709 026 293	116	709 301 274	90
240-260L500N	150	709 026 102	117	709 026 302	116	709 301 276	90
250-270L300N	148	709 026 106	117	709 026 305	116	709 301 278	90
250-270L400N	149	709 026 115	117	709 026 308	116	709 301 310	90
250-270L500N	150	709 026 116	117	709 026 310	116	709 301 312	90
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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 prior 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, drawings, 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, insurances, 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 Tz: 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 using them or not. We shall have the right to demand from principal that he gives his cooperation to signing a declaration of secrecy satisfactory 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 the mounting or installation operations are running 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 shall be understood to mean: any circumstance independent from our will due to which fulfillment of our obligations is fully or partially 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 of machinery, installations, etc. are running is not included in the mounting or installation period agreed upon with us. Even if 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 or 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 all 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 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 reserved 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 fully or partly the agreement and the agreements directly related thereto; and
 - to rescind fully or partly the agreement and the agreements directly related thereto; and all and 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; and
 - to rescind fully or partly the agreement and the agreements directly related thereto; and
 - to rescind fully or partly the agreement and the agreements directly related thereto; and all and 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 all 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 from the customary tolerances shall not constitute any grounds for 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 design, 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 the instructions for the use of 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 resulting from liability to third parties.
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 jurisdiction 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.

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