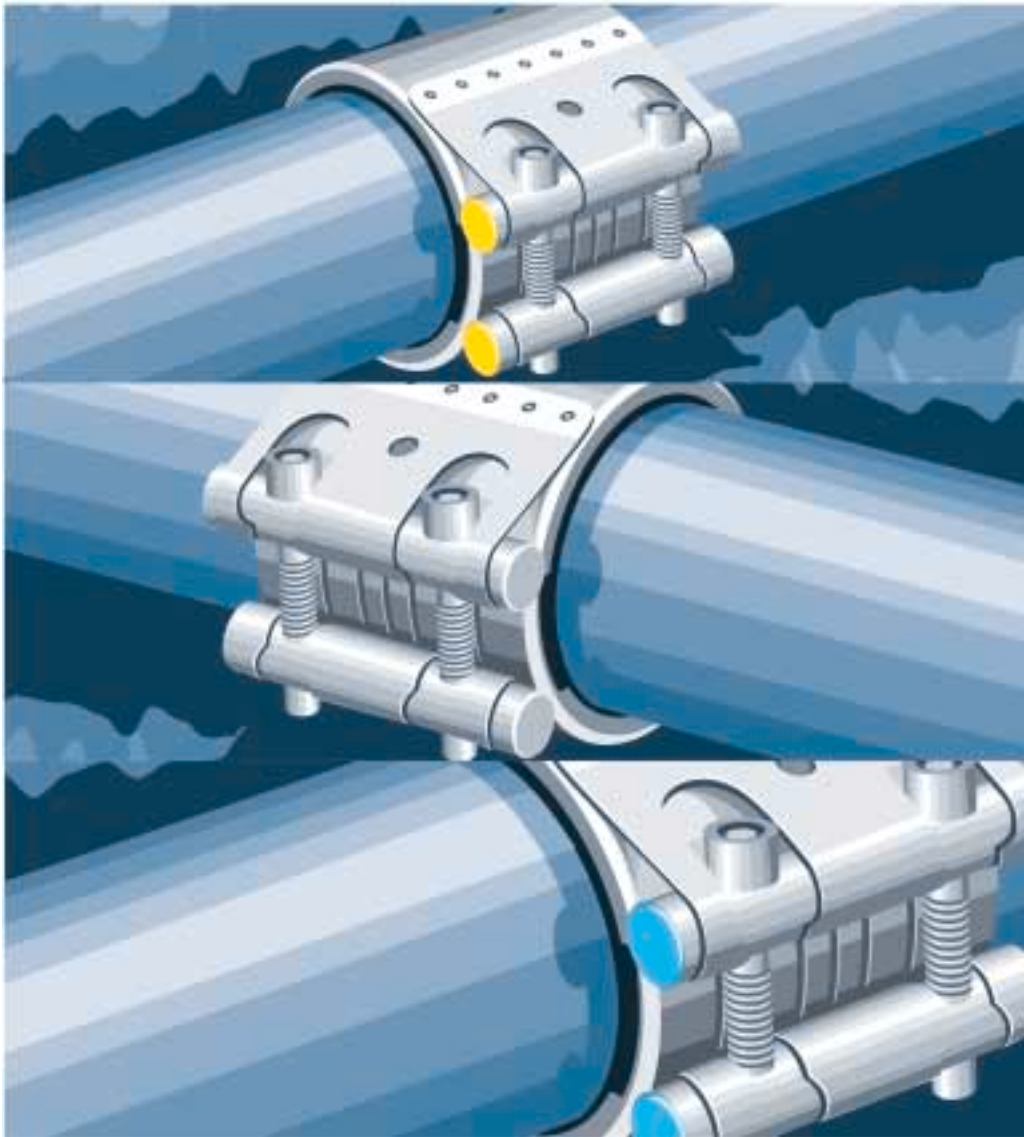


+GF+ Stainless steel pipe couplings

Y Our innovation
Your profit



More than a connection....

GEORG FISCHER +GF+

ISO 9001
registered by
DABTEC

ISO 14001
registered by
DABTEC

+GF+ Norma pipe couplings

Complete solutions in stainless steel pipe couplings



As a leading specialist in connection technology we, Georg Fischer WAGA N.V. are widely known for innovative solutions.

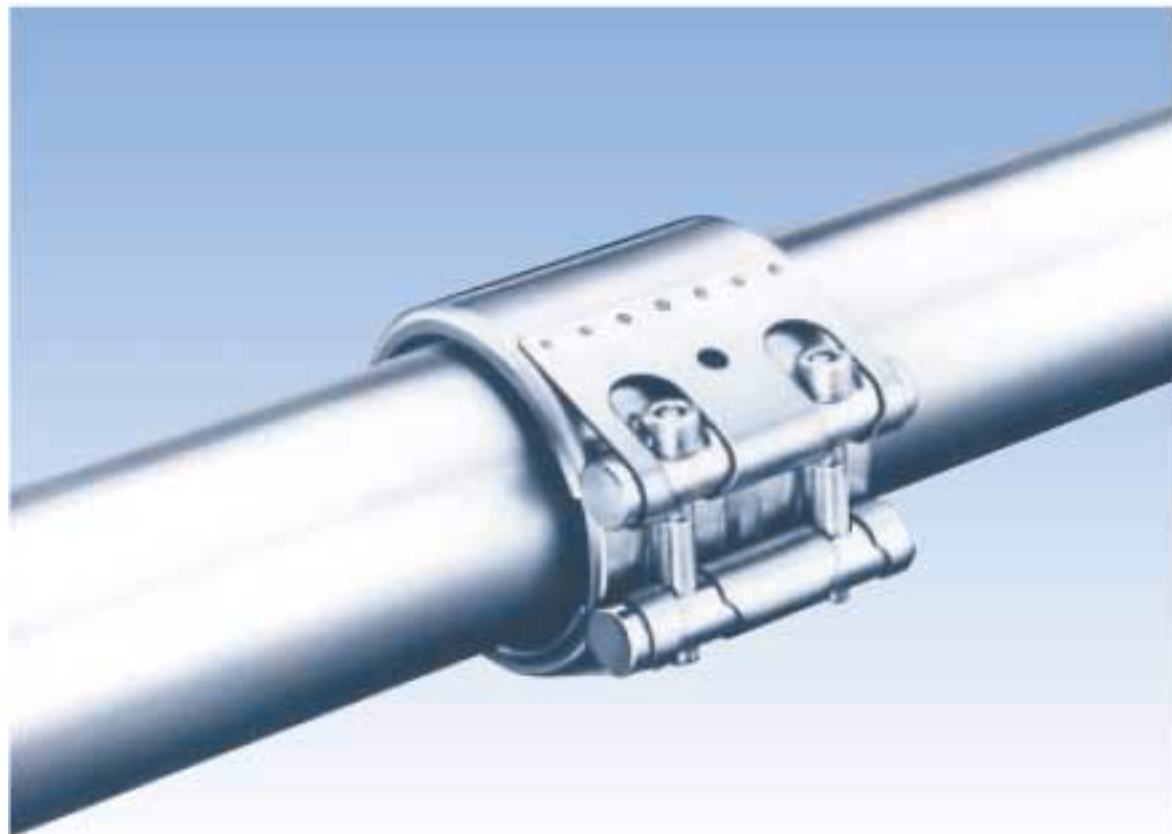
Besides many high-quality transition connections we offer **+GF+** Norma stainless steel pipe couplings: a wide range of solutions for both flexible and restraint connections.

Ideal for:

- Water supply
- Sewage
- Waste water treatment
- Gas
- Industrial installations
- Shipyards
- High pressure pipe lines
- Utility

Each type has been designed for specific purposes and applications in e.g. industrial installations, sewage, shipyards and high pressure pipelines, both under and above ground.

If you need to join or repair plain-ended metal or plastic pipes, it is time for you to meet the **+GF+** Norma products.



The technical data is not binding and not an expressly warranted characteristic of the goods. It is subject to change. Please consult our General Conditions of Supply.

Types

Flex (E)

Flexible type, if you need to join plain-ended metal or plastic pipes, to be applied in e.g.:

- Waste water systems • Waste water and sewage plants • Domestic installations
- Industrial pipelines • Ship industry • Car industry

Grip (E)

Restraint type, fitted with a patented 'Lock-ring', which makes it the ideal choice if pull-out resistance is needed.

To be applied for e.g.:

- Replacement of:- flanged connections
 - welded connections
 - threaded connections
 - anchoring devices with flexible couplings
- All situations where a pull-out resistant connection is required.

Plast grip (E) & Combi grip (E)

Basically the same as type Grip, but developed for connections between plastic to plastic and metal to plastic.

Rep E

Repair type, especially for those situations where severe security and pressure conditions require heavy-duty stainless steel repair clamps.



Economy

The E-type (economy), standard with specially designed anchors. You have the benefits of the type with the solid anchors, against a more economical price-level.

Features:

- * Made of sturdy stainless steel
- * Polyamide strip
- * Light-weight
- * Angularity of approx. 2 degrees
- * From 180 mm each OD can be supplied

Your profit:

- * Ready for immediate use
- * Quick and easy to install
- * Limited space needed
- * Worldwide approvals
- * Multi purpose applications
- * Comprehensive product range
- * 210 mm wide solution
- * Non-corrosive
- * Maintenance free

Complete solutions

The Flex, Grip & Rep couplings are available in the material quality W5 and W2.

Quality W5 Economy are our standard stock items. The sealing sleeve is available in EPDM and NBR.

+GF+ Norma pipe couplings offer efficient solutions for any coupling or repair problem you may encounter. Technical specifications are mentioned in this brochure and for detailed information, please consult our technical handbook or contact us.

For the connection of:	Flex (E)	Rep E	Grip (E)	Combi Grip (E)	Plast Grip (E)
metal - metal	•	•	•		
metal - plastic	•	•		•	
plastic - plastic	•	•			•

Type	Steel quality		Range in mm									
	W2	W5	OD min	26,9	168,3	180	300	400	650	750	1200	OD max
Flex E	•	•	48 bar			21,9	14,4				3,2 bar	
Flex	•	•				37,6	24				5,3	
Flex U	•	•					21,5					3,0
Grip E	•	•	64		16		8,3				1,3	
Grip	•	•	64		24		9,6				3	
Grip FPE		•	64		16							
Combi grip E		•	20	20								
Combi grip	•	•	20	20				7				
Plast grip E		•	20	20								
Plast grip	•	•	20	20				7				
Rep E		•	48		21,9						3,2	

Maximum PFA (pressure) at OD

The couplings type Flex and Rep are also suitable for plastic pipes, with pressure rating of 10 bar or more, such as PVC, GRP, PE and so on.



+GF+ Norma pipe couplings on polyolefines

Georg Fischer WAGA N.V. advises to use insert stiffeners for all types of mechanical joints. This to guarantee the tightness and the lifetime of the coupling and to exclude residual stress in the pipe near the joint area. Stainless steel inserts for most standard used sizes PE (SDR11 and SDR17,6) are available from stock at Georg Fischer WAGA N.V. Other SDR sizes on request.



Accessories

Available tools for installation

- Torque wrenches 20 - 50 Nm
- 30 - 200 Nm
- Spanner for closing type Rep (E) OD 35 - 168,3 mm.
- Special mounting tool for type Rep (E) OD 180 - 1200 mm.

Features

1. Standard Polyamide insert

For all types the polyamide strip inlay enables easy use of the coupling for large pipe gaps and vacuum applications. In addition it increases the shear strength of the coupling and prevents damaging of the rubber due to angular pipe movements.

2. Heavy-duty lock bars

The solid and specially designed lock bars have a larger diameter, improving the coupling's rigidity and the engagement of the bolt threads. The standard E-version is supplied with specially designed bars and has plastic dust caps, yellow for NBR sealing and blue for EPDM-sealing.

3. Protection Ring

For type Flex (E) the protection ring is standard on couplings, with a size below 219,1 mm. and protects the sealing sleeve from UV-rays, flames and enhances the bending stability of the coupling. The protection ring also prevents the sealing from extruding out of the coupling.

4. Conically stamped anchoring ring

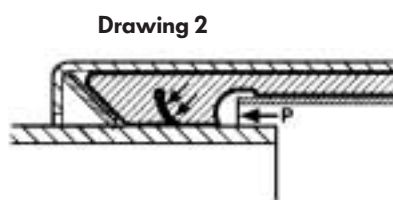
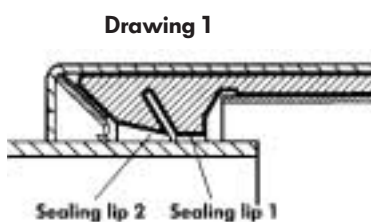
For types Grip (E) and Combi Grip (E) the anchoring ring with its conically stamped teeth indents into the pipe surface and provides safe and strong axial restraintness. Due to the special design of the anchoring ring, the coupling is able to take over high vibration loads.

5. Anchoring ring

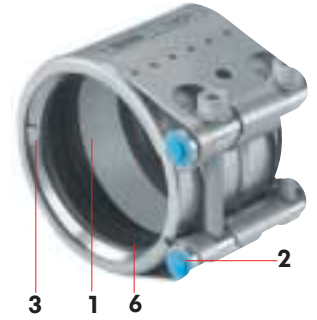
For types Combi Grip (E) and Plast Grip (E) this progressively acting anchoring ring is especially designed for plastic pipes. The multi-grooved ring allows maximum grip on the pipe surface with a minimum of penetration. It prevents pipe surface from damaging. At the same time the force applied will be distributed evenly across the pipe surface.

6. Double-lip sealing system

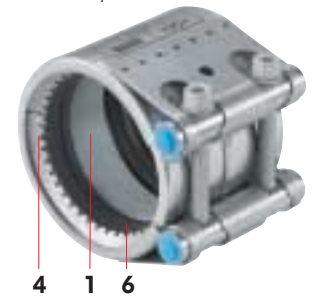
For all types the patented sealing system provides double safety. It prevents leaking even when the coupling is severely damaged by extreme pressure, thanks to the progressive effect of the double-lip sealing.



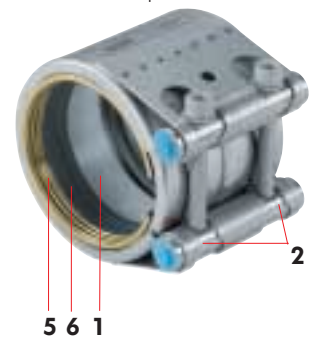
+GF+ Flex (E)



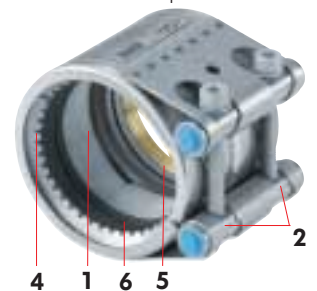
+GF+ Grip (E)



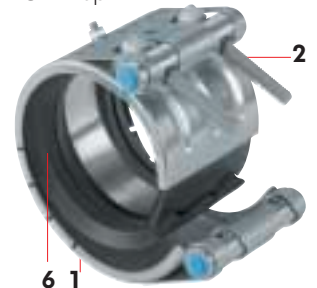
+GF+ Plast Grip (E)



+GF+ Combi Grip (E)



+GF+ Rep E



Materials

W5 quality	Material			Types				
	DIN	AISI/AS	BS	Flex(E)	Grip(E)	Combi Grip(E)	Plast Grip(E)	Rep E
Housing	1.4571	316Ti	320S31	•	•	•	•	•
Bolts	1.4404	316L	316S11	•	•	•	•	•
Hollow lock bars	1.4571	316Ti	320S31	•	•	•	•	•
Solid lock bars	1.4401	316	316S31	•	•	•	•	
Protection ring	1.4571	316Ti	320S31	•				
Anchoring ring: for metal pipes	1.4310	301	301S21		•	•		
for plastic pipes	PA-GF /brass	PA-GF /brass	PA-GF /brass			•	•	
Plastic strip insert	PA-GF	PA-GF	PA-GF	•	•	•	•	•

W2 quality	Material			Types				
	DIN	AISI/AS	BS	Flex(E)	Grip(E)	Combi Grip(E)	Plast Grip(E)	Rep E
Housing	1.4301	304	304S31	•	•	•	•	•
Bolts	1.0737	12L14	230M07	•	•	•	•	•
Hollow lock bars	1.4571	316Ti	320S31	•	•	•	•	•
Solid lock bars	1.4401	316	316S31	•	•	•	•	
Protection ring	1.4571	316Ti	320S31	•				
Anchoring ring: for metal pipes	1.4310	301	301S21		•	•		
for plastic pipes	PA-GF /brass	PA-GF /brass	PA-GF /brass			•	•	
Plastic strip insert	PA-GF	PA-GF	PA-GF	•	•	•	•	•

Temperature and media

Sealing	EPDM	NBR
Temperature range	OD ≤ 168,3 mm -30 °C to +125 °C OD > 180 mm -20 °C to +80 °C	-20 °C to +80 °C
Media	Potable water Aqueous acids Aqueous alkalines Alcohols Compressed air	Water, sea water Mineral oils Grease Fuels, propellants Gas Compressed air

Certificates

Certificates & approvals for utilities, industry and shipbuilding are all available.



The WAGA® sales programme:



Couplings

MULTI/JOINT® 3000 Family
MULTI/JOINT® XL Family
+GF+ Norma pipe couplings
Draw-Lock® Family
ST-system DN200 - DN2800

WA2075
WA2069
WA2068
WA2500
WA2072

chapter 2

Repair parts

Fittings and equipment for pipe drilling

Additional products and accessories

WA2060
WA2061
WA2062

chapter 3

chapter 4

chapter 5

Also by Georg Fischer:

ELGEF® • INSTAFLEX® • POLYRAC® • PRIMOFIT® • SIGNET programme
ELGEF Plus® • PRO-FIT® • CONTAIN-IT® • DIASTAR® • PE-EASY®

Local distributor

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