

INFRASTRUCTURE



# NORMA® Infrastructure Catalogue

Technical Building Equipment | Civil & Structural Engineering | Industry | Shipbuilding



**Valid from**

**07/2026**



[norma-connects.com](https://norma-connects.com)

# Connections made easy, built to last

## NORMA values strong partnerships and long-lasting connections.

As a customer, you benefit from a huge selection of connection solutions and tailor-made services, making NORMA® the strongest link in your business, production, or maintenance chains. We stand for a connection that lasts.

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### **A partner at your side**

We recognize that our success is built on yours. Your NORMA contact person works where YOU are: no call center, no distance. They are responsive to your needs, speak your language, and share a common cultural understanding.



### **Long-lasting and proven products**

Since 1949, NORMA® is a synonym for connection solutions that meet the highest quality standards and performance requirements at all times. NORMA's "Fit and Forget" commitment means worry-free installation without subsequent complaints or damage, driving satisfaction for you and your customers.



### **Universal product portfolio**

Thanks to our wide range of products, we are your one-stop shop for every challenge in the field of connection and fastening technology. Our globally renowned NORMA® brand inspires confidence, making sales easier and distinguishing your business from the competition.

# Professional solutions for every profession

Whether you are an engineer, a plumber or an architect, we can assure you that, as a professional user, you will love our extensive range of connectors and fasteners. Our pipe couplings, hose clamps, fastening elements and compression fittings are technologically advanced and will help you maintain operational integrity and safety even in critical applications. With our leading brand NORMA®, we offer you first-class quality, unmatched reliability and outstanding performance. This is the reason why we have been setting the standards for excellence in advanced joining technology for over seven decades.

## What professional users love about NORMA:



### Win time

No time to bother with small components? Our NORMA® quality standard ensures accuracy of fit during assembly as well as simple and safe handling. We take care of your connecting components, so you can focus on the big system.



### Save money

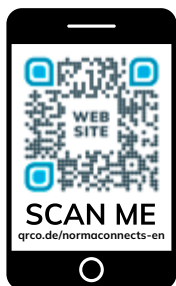
You want to avoid high maintenance cost? Our products require no maintenance, they are made to last. But if your system does, our products allow you to execute it quickly and easily, as our products can be easily disassembled and reassembled.



### Enjoy peace of mind

You need a long-lasting system without leaks? NORMA's "Fit and Forget" commitment and the broad range of product and quality certifications mean worry-free installation without subsequent complaints or damage, driving satisfaction for you and your customers.

**Don't let your connections be your weakest link!**



**FIND MORE INFORMATION:**  
[NORMA-CONNECTS.COM](http://NORMA-CONNECTS.COM)

## DID YOU KNOW?

With our  
**DCS and FGR**  
products we cover  
the full range of  
EN 877:

**DN 50-300:**  
DCS Drainage  
Connectors  
see page 45.

**DN 300-600:**  
FGR Pipe  
Couplings  
see page 19

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FGR Flex



FGR Grip E-FP



FGR CombiGrip



DCS RAPID



DCS Combi Claw



TORRO®



NORMETTA®

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## Materials explanation

- W1** All parts entirely made from galvanized steel
- W2** NORMACLAMP® TORRO®: Band and housing stainless steel AISI 430; Screw: galvanized mild steel  
NORMACLAMP® GBS M: Band and housing stainless steel AISI 430; Bolt: galvanized mild steel  
NORMACONNECT® FGR/DCS: see pages 14 and 30
- W2B** Band: stainless steel AISI 430; Screw and housing: galvanized steel
- W3** All parts entirely made from stainless steel AISI 430
- W4** All parts entirely made from stainless steel AISI 304 (or comparable)
- W5** All parts entirely made from stainless steel AISI 316 (or comparable)

| Materials International Standard Designations |                           |         |          |                |      |     |
|-----------------------------------------------|---------------------------|---------|----------|----------------|------|-----|
|                                               | DIN                       | AISI/AS | BS       | AFNOR NF       | SS   | SUS |
| <b>W1</b>                                     | Entirely galvanized steel |         |          |                |      |     |
| Band and housing                              |                           |         |          |                |      |     |
| <b>W2</b>                                     | 1.4016                    | 430     | 430 S 17 | Z8 C17         | 2320 | 430 |
| Bolt                                          | Galvanized steel          |         |          |                |      |     |
| <b>W3</b>                                     | 1.4016                    | 430     | 430 S 17 | Z8 C17         | 2320 | 430 |
| <b>W4</b>                                     | 1.4301                    | 304     | 304 S 15 | Z6 CN 18-09    | 2332 | 304 |
| <b>W5</b>                                     | 1.4401                    | 316     | 316 S 31 | Z3 CND 17-11-1 | 2347 | 316 |
| Spring insert                                 | 1.4310                    | 301     | 301 S 22 | Z12 CN 18-09   | 2331 | 301 |

## Bolts

- Sk**  Hexagonal-head bolt
- Sz**  Slotted hexagonal-head bolt
- Zv**  Cylinder-head bolt
- Isk**  Inside hexagonal screw

## Pictogram explanation

NORMA® offers different tools, kits, assortments and displays to fit the needs of its customers. The drawings below will help you to know, at a quick glance, if the product is available in another packaging type and/or if it has a special tool.



This product is available in a kit, please refer to the Assortment chapter



This product is available in an assortment box, please refer to the Assortment chapter



This product is available in display, please refer to the Assortment chapter

# NORMA® solutions for drainage and building



## NORMA® FGR

- Applications:
- Cooling lines
  - Pressurized lines
  - Supply lines
  - Water
  - Gas
  - Hydraulic lines



## NORMA® DCS RAPID

- Applications:
- Grey water
  - Roof drainage
  - Soil pipe lines
  - Black water



## NORMA® DCS Combi Claw

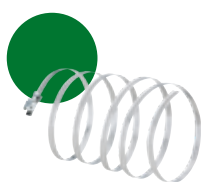
- Applications:
- Roof drainage
  - Waste water lifting device
  - Lifting device



#### **NORMA® TORRO®**

Applications:

- Pressurized lines



#### **NORMA® Quick Lock**

Applications:

- Air conditioning lines
- Exhaustion lines



#### **NORMA® Cable Ties**

Applications:

- General fixing
- Electrical lines



# NORMA® solutions for sewage plants and industrial plants



## NORMA® FGR

### Applications:

- Sludge Treatment: composition lines, filtrate lines, sludge lines, water lines, compressor lines, biogas lines
- Biological Cleaning: compressor lines, ventilation lines, air lines
- Mechanical Cleaning: ventilation lines, floating lines, sludge lines, mixing water lines



## NORMA® TORRO®

### Applications:

- Hydraulic lines
- Pressurized lines





#### NORMA® Cable Ties

- Applications:
- General fixing



# NORMA® solutions for shipbuilding



## NORMA® FGR

- Black and grey water
- Fresh water
- Ballast lines
- Bilge water
- Sprinkler systems
- Discharge lines
- Charged air lines
- Lubrication lines



## NORMA® TORRO®

- Hydraulic lines
- Lubrication lines
- Cooling lines
- Compressed air lines



## NORMA® Cable Cleats

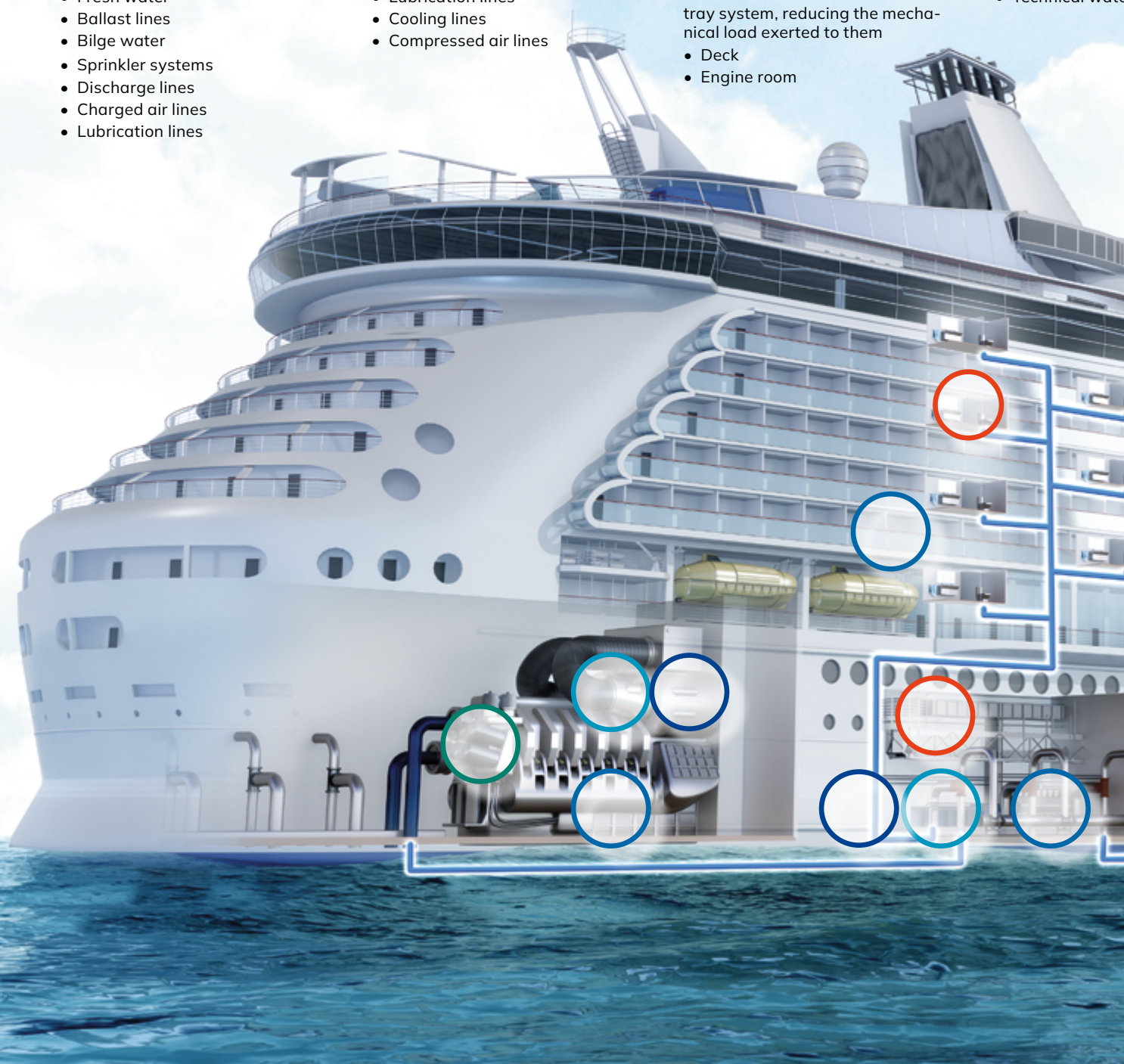
Support and retain the cables and conductors within the cable tray system, reducing the mechanical load exerted to them

- Deck
- Engine room



## ABA® Original

- Cooling lines
- Technical water







SMO

er



#### **NORMA® RSGU**

- Supply lines
- Communication wires



#### **NORMA® GBS**

- Hydraulic lines
- Lubrication lines
- Cooling lines
- Compressed air lines



#### **NORMA® Stainless Steel Ties**

- General fixing







# NORMACONNECT® FGR – Pipe Couplings

The NORMACONNECT® FGR pipe coupling is a connection suitable to safely join thick- and thin-walled plastic and metal pipes and especially pipes made from stainless steel. It connects plain-ended supply pipes as well as exhaust pipes for solid, liquid or gaseous media in a reliable manner. The connecting elements help to reduce assembly times and costs significantly, because they eliminate the need for additional expenses such as welding, galvanizing or pipe alignment and treatment of pipe ends. Furthermore, NORMACONNECT® FGR is light, reusable, can be used in narrow spaces and resists high vibration loads due to its special geometry. NORMACONNECT® FGR couplings are used in mechanical engineering and construction, shipbuilding, civil engineering and in hydro technology.



# Our solution for connecting – FGR

FGR pipe couplings are a compact, economical and reliable means for connecting plain-ended pipes. They are suitable for joining plastic and metal pipes and especially pipes made from stainless steel. They can be used in mechanical engineering and construction, shipbuilding, civil engineering and in hydro technology, water supply and water treatment.

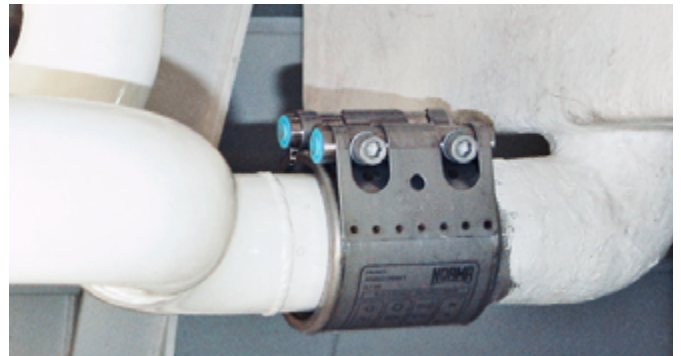
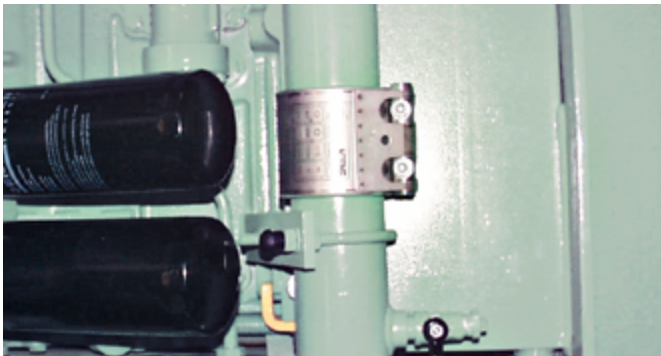
Supply pipes as well as exhaust pipes for solid, liquid or gaseous media can be joined easily and safely in a very short period of time even in narrow spaces. Thanks to the wide range of various types and sizes they are suitable for use both in standard and specialized applications.

## Product benefits

FGR pipe couplings are an economical alternative to conventional pipe joining techniques for both plastic and metal pipes. All plain-ended pipes can be joined easily by hand. The ready-to-fit coupling is pushed over the pipe ends and then aligned and rotated to any fitting position. Tightening the two bolts alternately with a torque wrench is all it takes to make a safe fitting.

## Range of applications

FGR pipe coupling is a reliable connection for thick- and thin-walled pipes which conforms to the latest DIN Standard 86128. Feed and return lines for liquids, gases and solids (for mechanical engineering and construction, civil engineering, shipbuilding, pipeline construction, power stations, mining, filters, water technology, etc.) are joined quickly, easily and safely using FGR pipe couplings.



- No welding
- No necessity for prior pipe alignment or treatment of pipe ends
- Up to 80 % time saving



- Compensates for pipe gaps up to 65 mm
- Compensates for axial movements up to 7.5 mm
- Compensates for misalignment up to 3 mm

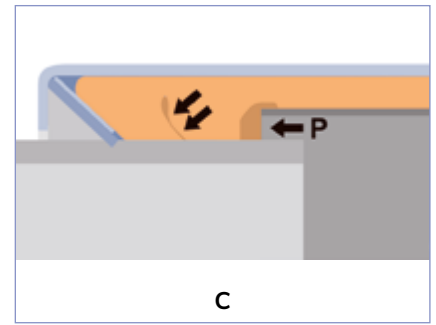
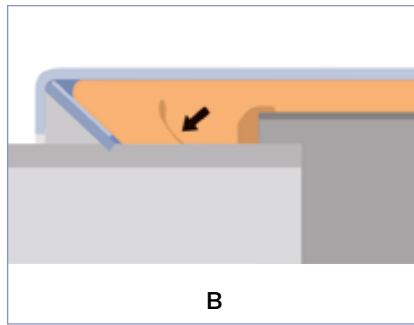
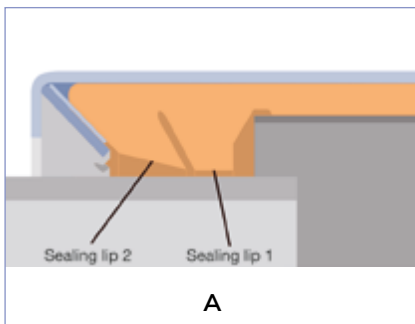


- 70 % less weight



- Compensates for angular deflection up to + or - 2° in total





## 1. Double-lip sealing system

The patented double-lip sealing system of the FGR pipe couplings offers double safety. It provides maximum sealability at both low and high operating pressures (Fig. A).

When the bolts of the coupling are tightened, sealing lip 1 is pressed onto sealing lip 2, thus providing a highly reliable seal even under conditions of low pressure, vacuum or extreme loads acting on the joint (Fig. B).

The special sealing lip design means that when the internal pressure (P) increases, the sealing lips are pressed more firmly onto the pipe surface ensuring an even stronger seal (Fig. C).

## 2. Strip insert included as standard

All FGR pipe couplings are factory equipped with the strip insert as standard. The strip insert protects the sealing sleeve from increased mechanical and chemical loads. It also prevents the sealing sleeve from moisture expansion and allows larger gaps between the pipe ends to be connected.

Furthermore, it compensates for larger angular deflections and misalignment. With the strip insert the couplings can also be used for both vacuum and high pressure applications without any problems. The strip inserts are made from plastic material or stainless steel.

## 3. Heavy duty lock bars

For FGR pipe couplings we use lock bars with a larger diameter. Thus the rigidity of the coupling is increased and the engagement of the threaded end of the locking bolts is considerably improved.

## 4. Anchoring ring with conically stamped teeth

The anchoring ring with conically stamped teeth indents into the pipe surface and provides safe and strong axial restraint. Owing to the special design the coupling is able to withstand even high vibration loads.

## 5. Protection ring

The protection ring protects the sealing sleeve from UV rays, fire, etc., and increases the Flexural strength of the coupling.



## Approvals

| Shipbuilding   |                                                                                   | Flex / Flex E / RFP | Grip / Grip E / Grip E-FP / RFP | CombiGrip / CombiGrip E | PlastGrip / PlastGrip E | REP E |
|----------------|-----------------------------------------------------------------------------------|---------------------|---------------------------------|-------------------------|-------------------------|-------|
| ABS            |  | •                   | •                               | •                       | •                       |       |
| Bureau Veritas |  | •                   | •                               | •                       | •                       |       |
| DNV            |  | •                   | •                               | •                       | •                       |       |
| LR             |  | • <sup>1</sup>      | • <sup>1</sup>                  | •                       | •                       |       |
| RINA           |  | •                   | •                               |                         |                         |       |
| PRS            |  | • <sup>1</sup>      | • <sup>1</sup>                  |                         |                         |       |

| Water Supply & Treatment         |                                                                                     |   |   |   |   |   |
|----------------------------------|-------------------------------------------------------------------------------------|---|---|---|---|---|
| Elastomer guideline KTW/TZW W270 |                                                                                     | • | • | • | • | • |
| NSF                              |  | • | • | • | • |   |

| Gas |                                                                                     |  |   |  |   |  |
|-----|-------------------------------------------------------------------------------------|--|---|--|---|--|
| BAM |  |  | • |  | • |  |

| Special Approvals         |                                                                                     |   |                |   |   |  |
|---------------------------|-------------------------------------------------------------------------------------|---|----------------|---|---|--|
| DiBT / TÜV south. Germany |                                                                                     |   | •              |   |   |  |
| BAAINBW                   |  |   | • <sup>2</sup> |   |   |  |
| FDA                       |  | • | •              | • | • |  |

<sup>1</sup> No approvals for RFP<sup>2</sup> Approval for German Navy / NATO vessels



## Pressure rating for axial non restraint pipe couplings type Flex

| Pipes to be joined | Size (mm)        | Flex        | Flex E       | Flex 3          | REP E from 35 mm |
|--------------------|------------------|-------------|--------------|-----------------|------------------|
| Metal + Metal      | 26.9 to 168.3    | -           | 70 to 32 bar | -               | 60 to 32 bar     |
|                    | 180.0 to 1,219.2 | 50 to 7 bar | 30 to 4 bar  | -               | 30 to 4 bar      |
|                    | 326.0 to 2,032.0 | -           | -            | 16.5 to 1.5 bar | -                |
| Plastic + Plastic  | 26.9 to 168.3    | -           | 16 bar       | -               | 16 bar           |
|                    | 180.0 to 1,219.2 | 16 to 4 bar | 16 to 4 bar  | -               | 16 to 4 bar      |
| Metal + Plastic    | 26.9 to 168.3    | -           | 16 bar       | -               | -                |
|                    | 180.0 to 1,219.2 | 16 to 7 bar | 16 to 7 bar  | -               | -                |

Larger diameters available on request

Max. allowed working pressure for marine applications: 16 bar

## Pressure rating for axial restraint pipe couplings type Grip

| Pipes to be joined | Size (mm)                  | Grip          | Grip E       | CombiGrip E | CombiGrip   | PlastGrip E | PlastGrip   | Grip E-FP    |
|--------------------|----------------------------|---------------|--------------|-------------|-------------|-------------|-------------|--------------|
| Metal + Metal      | 26.9 to 168.3              | -             | 70 to 32 bar | -           | -           | -           | -           | 70 to 32 bar |
|                    | 180.0 to 419.0             | 32 to 8.5 bar | 20 to 7 bar  | -           | -           | -           | -           | 20 to 2 bar  |
|                    | 180.0 to 812.8             | 32 to 2.5 bar | -            | -           | -           | -           | -           | -            |
| Plastic + Plastic  | 40.0 to 168.3              | -             | -            | -           | -           | 16 bar      | -           | -            |
|                    | 200.0 to 406.4             | -             | -            | -           | -           | -           | 16 to 6 bar | -            |
| Metal + Plastic    | 38/40 to 160/168.3         | -             | 16 bar       | 16 bar      | -           | -           | -           | -            |
|                    | 200.0/204.0 to 406.0/406.4 | -             | -            | -           | 16 to 6 bar | -           | -           | -            |

Larger diameters available on request

Max. allowed working pressure for marine applications: 16 bar

## Sealing sleeves

| Material of seal  | EPDM                                                                                     | NBR                                                           | FKM                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Temperature range | -30 °C up to +125 °C<br>OD 26.9 up to 168.3 mm<br><br>-20 °C up to +80 °C<br>OD > 180 mm | -20 °C up to +80 °C                                           | -10 °C to +150 °C*                                                                                             |
| Media             | Drinking water<br>Alcohols<br>Compressed air<br>Solids                                   | Water<br>Oils<br>Gases (combustible)<br>Fuels<br>Hydrocarbons | Steam<br>Several gases<br>Hot water<br>Ozone<br>Oxygen<br>Several acids**<br>Several alkalis**<br>Hydrocarbons |

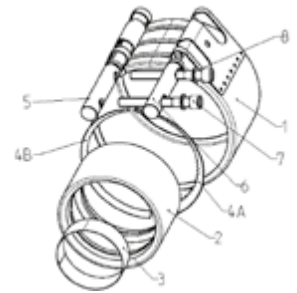
\* Higher temperatures possible in some cases

\*\* Case by case approval required. Please check with your sales representative

## FGR Materials

Components and materials in accordance with AISI/BS. FGR pipe couplings are available in the materials W2, W4 and W5.

| W2    |                                                |                     |                     |                           |
|-------|------------------------------------------------|---------------------|---------------------|---------------------------|
| No.   | Component                                      | Flex/Flex E         | Grip/Grip E         | PlastGrip/<br>PlastGrip E |
| 1     | Housing with bridge                            | 304/304 S31         | 304/304 S31         | 304/304 S31               |
| 2     | Sealing sleeve                                 | EPDM/NBR            | EPDM/NBR            | EPDM/NBR                  |
| 3     | Strip insert <sup>1)</sup>                     | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR       |
| 4 A   | Anchoring ring for metal pipes <sup>2)</sup>   | –                   | 301/301 S21         | –                         |
| 4 A   | Anchoring ring for plastic pipes <sup>2)</sup> | –                   | –                   | PA-GF-NS <sup>3)</sup>    |
| 4 B   | Protection ring                                | 316Ti/320 S31       | –                   | –                         |
| 5 + 6 | Solid locking trunnions                        | AISI 1213           | AISI 1213           | AISI 1213                 |
| 5 + 6 | Hollow locking trunnions                       | AISI 1518           | AISI 1518           | AISI 1518                 |
| 7     | Locking bolts                                  | 10.9                | 10.9                | 10.9                      |
| 8     | Washer                                         | A4-80/316           | A4-80/316           | A4-80/316                 |



| W4    |                                                |                     |                     |                           |
|-------|------------------------------------------------|---------------------|---------------------|---------------------------|
| No.   | Component                                      | Flex/Flex E         | Grip/Grip E         | PlastGrip/<br>PlastGrip E |
| 1     | Housing with bridge                            | 304/304 S31         | 304/304 S31         | 304/304 S31               |
| 2     | Sealing sleeve                                 | EPDM/NBR            | EPDM/NBR            | EPDM/NBR                  |
| 3     | Strip insert <sup>1)</sup>                     | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR       |
| 4 A   | Anchoring ring for metal pipes <sup>2)</sup>   | –                   | 301/301 S21         | –                         |
| 4 A   | Anchoring ring for plastic pipes <sup>2)</sup> | –                   | –                   | PA-GF-NS <sup>3)</sup>    |
| 4 B   | Protection ring                                | 316Ti/320 S31       | 316Ti/320 S31       | –                         |
| 5 + 6 | Solid locking trunnions                        | 316L                | 316L                | 316L                      |
| 5 + 6 | Hollow locking trunnions                       | 316Ti/320 S31       | 316Ti/320 S31       | 316Ti/320 S31             |
| 7     | Locking bolts                                  | A4-80/316           | A4-80/316           | A4-80                     |
| 8     | Washer                                         | A4-80/316           | A4-80/316           | A4-80                     |

<sup>1)</sup> PA-GF plastic strip inserts are only for pipe couplings used in shipbuilding applications.

<sup>2)</sup> CombiGrip couplings are equipped with two different anchoring rings (1 x for the metal end, 1 x for the plastic end).

<sup>3)</sup> PA-GF: PA reinforced with fiber glass; NS: new silver.

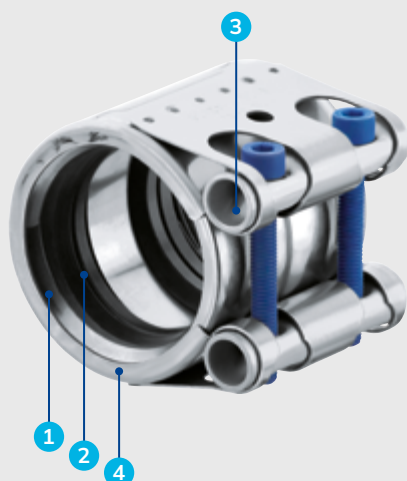
| W5    |                                                |                     |                     |                           |                           |                     |
|-------|------------------------------------------------|---------------------|---------------------|---------------------------|---------------------------|---------------------|
| No.   | Component                                      | Flex/Flex E         | Grip/Grip E         | CombiGrip/<br>CombiGrip E | PlastGrip/<br>PlastGrip E | REP E               |
| 1     | Housing                                        | 316Ti/320 S31       | 316Ti/320 S31       | 316Ti/320 S31             | 316Ti/320 S31             | 316Ti/320 S31       |
| 2     | Sealing sleeve                                 | EPDM/NBR            | EPDM/NBR/FKM        | EPDM/NBR                  | EPDM/NBR                  | EPDM/NBR            |
| 3     | Strip insert <sup>1)</sup>                     | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR | 316Ti/320 S31/PA-GR       | 316Ti/320 S31/PA-GR       | 316Ti/320 S31/PA-GR |
| 4 A   | Anchoring ring for metal pipes <sup>2)</sup>   | –                   | 301/301 S21         | 301/301 S21 301/301 S21   | –                         | –                   |
| 4 A   | Anchoring ring for plastic pipes <sup>2)</sup> | –                   | –                   | PA-GF-NS <sup>3)</sup>    | PA-GF-NS <sup>3)</sup>    | –                   |
| 4 B   | Protection ring                                | 316Ti/320 S31       | –                   | –                         | –                         | –                   |
| 5 + 6 | Solid locking trunnions                        | 316L                | 316L                | 316L                      | 316L                      | 316L                |
| 5 + 6 | Hollow locking trunnions                       | 316Ti/320 S31       | 316Ti/320 S31       | 316Ti/320 S31             | 316Ti/320 S31             | 316Ti/320 S31       |
| 7     | Locking bolts                                  | A4-80/316           | A4-80/316           | A4-80/316                 | A4-80/316                 | A4-80/316           |
| 8     | Washer                                         | A4-80/316           | A4-80/316           | A4-80/316                 | A4-80/316                 | A4-80/316           |

<sup>1)</sup> PA-GF plastic strip inserts are only for pipe couplings used in shipbuilding applications.

<sup>2)</sup> CombiGrip couplings are equipped with two different anchoring rings (1 x for the metal end, 1 x for the plastic end).

<sup>3)</sup> PA-GF: PA reinforced with fiber glass; NS: nickel and silver.





- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Lock bars
- 4 Protection ring

## The protective pipe coupling

NORMACONNECT® FGR Flex/Flex E are axial non-restraint couplings. They are used for all kind of metal pipes, as well as pipes made of concrete or plastic. Sealing reliability is ensured even when NORMACONNECT® FGR Flex/Flex E pipe couplings are mounted on pipes with or without a gap and also on compensated pipes.



### Advantages at a glance

- ✓ Compensates for thermal elongation of the pipes
- ✓ Joining all kind of pipe materials is possible, e.g., for steel, plastic, cast iron, etc.

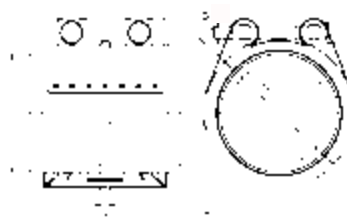
### Information

- Sizes: 26.9 mm – 1,219.1 mm
- Working pressure: 70.0 – 4.0 bar
- Material: AISI 304, AISI 316 Ti
- EPDM:
  - Sizes from 26.9 mm up to 168.3 mm: -30 °C up to +125 °C
  - Sizes > 180.0 mm: -20 °C up to +80 °C
- NBR: from -20 °C up to +80 °C
- FKM: -10 °C to +150 °C  
(Higher temperatures possible in some cases.)

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    | x  | x  |

### Technical data & Ordering information



## Technical data &amp; Ordering information

| NORMACONNECT® FGR Flex E |              |                                            |                                                                                            |                                                                                            |                  |                         |           |           |                     |                          |                           |
|--------------------------|--------------|--------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|
| Ø<br>(O.D.)              | Designation  | Clamping ranges                            | PN <sup>1</sup><br>(MAWP <sup>1</sup> from diameter 180)                                   | WP <sup>2</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           |
|                          |              | Od <sub>min</sub> - Od <sub>max</sub> (mm) | <br>[bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque (Nm) |
| 26.9                     | Flex E 26.9  | 26.4-27.5                                  | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.31                | M 8 SW 6                 | 5                         |
| 28.0                     | Flex E 28.0  | 27.5-28.5                                  | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.31                | M 8 SW 6                 | 5                         |
| 30.0                     | Flex E 30.0  | 29.5-30.6                                  | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.31                | M 8 SW 6                 | 5                         |
| 33.7                     | Flex E 33.7  | 33.0-34.3                                  | 16                                                                                         | 60                                                                                         | 3                | 67                      | 55        | 75        | 0.32                | M 8 SW 6                 | 5                         |
| 35.0                     | Flex E 35.0  | 34.5-35.6                                  | 16                                                                                         | 60                                                                                         | 8                | 63                      | 55        | 75        | 0.43                | M 8 SW 6                 | 5                         |
| 38.0                     | Flex E 38.0  | 37.5-38.6                                  | 16                                                                                         | 60                                                                                         | 8                | 63                      | 60        | 80        | 0.43                | M 8 SW 6                 | 5                         |
| 42.4                     | Flex E 42.4  | 41.7-43.0                                  | 16                                                                                         | 50                                                                                         | 8                | 63                      | 65        | 85        | 0.44                | M 8 SW 6                 | 5                         |
| 44.5                     | Flex E 44.5  | 44.0-45.1                                  | 16                                                                                         | 50                                                                                         | 8                | 63                      | 65        | 85        | 0.45                | M 8 SW 6                 | 5                         |
| 48.3                     | Flex E 48.3  | 47.6-50.5                                  | 16                                                                                         | 50                                                                                         | 8                | 63                      | 70        | 90        | 0.46                | M 8 SW 6                 | 5                         |
| 54.0                     | Flex E 54.0  | 53.3-54.6                                  | 16                                                                                         | 50                                                                                         | 17               | 78                      | 75        | 95        | 0.60                | M 8 SW 6                 | 10                        |
| 57.0                     | Flex E 57.0  | 56.3-57.7                                  | 16                                                                                         | 50                                                                                         | 17               | 78                      | 80        | 100       | 0.61                | M 8 SW 6                 | 10                        |
| 60.3                     | Flex E 60.3  | 59.5-61.0                                  | 16                                                                                         | 40                                                                                         | 17               | 78                      | 85        | 105       | 0.62                | M 8 SW 6                 | 10                        |
| 63.0                     | Flex E 63.0  | 62.2-63.9                                  | 16                                                                                         | 40                                                                                         | 17               | 78                      | 85        | 105       | 0.62                | M 8 SW 6                 | 10                        |
| 70.0                     | Flex E 70.0  | 69.0-71.0                                  | 16                                                                                         | 40                                                                                         | 25               | 98                      | 90        | 110       | 1.16                | M 8 SW 6                 | 10                        |
| 73.0                     | Flex E 73.0  | 72.1-73.8                                  | 16                                                                                         | 40                                                                                         | 25               | 98                      | 95        | 115       | 1.18                | M 8 SW 6                 | 10                        |
| 76.1                     | Flex E 76.1  | 75.2-77.0                                  | 16                                                                                         | 35                                                                                         | 25               | 98                      | 100       | 120       | 1.18                | M 8 SW 6                 | 10                        |
| 80.0                     | Flex E 80.0  | 79.0-80.8                                  | 16                                                                                         | 35                                                                                         | 25               | 98                      | 100       | 120       | 1.21                | M 8 SW 6                 | 10                        |
| 84.0                     | Flex E 84.0  | 83.0-85.0                                  | 16                                                                                         | 35                                                                                         | 25               | 98                      | 105       | 125       | 1.24                | M 8 SW 6                 | 10                        |
| 88.9                     | Flex E 88.9  | 87.0-89.9                                  | 16                                                                                         | 35                                                                                         | 25               | 98                      | 110       | 130       | 1.26                | M 8 SW 6                 | 10                        |
| 101.6                    | Flex E 101.6 | 100.4-102.8                                | 16                                                                                         | 35                                                                                         | 25               | 98                      | 125       | 145       | 1.39                | M 8 SW 6                 | 10                        |
| 104.0                    | Flex E 104.0 | 102.8-106.1                                | 16                                                                                         | 35                                                                                         | 25               | 98                      | 125       | 145       | 1.40                | M 8 SW 6                 | 10                        |
| 108.0                    | Flex E 108.0 | 106.8-109.2                                | 16                                                                                         | 35                                                                                         | 25               | 98                      | 130       | 150       | 1.42                | M 8 SW 6                 | 10                        |
| 110.0                    | Flex E 110.0 | 108.8-111.4                                | 16                                                                                         | 35                                                                                         | 25               | 98                      | 130       | 150       | 1.47                | M 8 SW 6                 | 10                        |
| 114.3                    | Flex E 114.3 | 113.0-115.5                                | 16                                                                                         | 35                                                                                         | 25               | 98                      | 135       | 155       | 1.47                | M 8 SW 6                 | 15                        |
| 129.0                    | Flex E 129.0 | 127.6-131.1                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 155       | 185       | 2.10                | M 10 SW 8                | 20                        |
| 133.0                    | Flex E 133.0 | 131.5-134.4                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 160       | 190       | 2.13                | M 10 SW 8                | 20                        |
| 139.7                    | Flex E 139.7 | 138.1-141.6                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 165       | 195       | 2.19                | M 10 SW 8                | 25                        |
| 141.3                    | Flex E 141.3 | 139.6-142.8                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 170       | 200       | 2.19                | M 10 SW 8                | 25                        |
| 154.0                    | Flex E 154.0 | 152.3-156.1                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 180       | 210       | 2.31                | M 10 SW 8                | 30                        |
| 159.0                    | Flex E 159.0 | 157.3-160.7                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 185       | 215       | 2.38                | M 10 SW 8                | 30                        |
| 168.3                    | Flex E 168.3 | 166.5-170.1                                | 16                                                                                         | 32                                                                                         | 35               | 113                     | 195       | 225       | 2.43                | M 10 SW 8                | 30                        |

Coupling sizes >800 mm are in 2-parts design! Sizes >1,219.2 mm on request

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

MAWP<sup>1</sup> (Maximum Allowable Working Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.

## Technical data &amp; Ordering information

| NORMACONNECT® FGR Flex E |                |                                            |                                                                                            |                                                                                            |                  |                         |           |           |                     |                          |                           |
|--------------------------|----------------|--------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|
| Ø<br>(O.D.)              | Designation    | Clamping ranges                            | PN <sup>1</sup><br>(MAWP <sup>1</sup> from diameter 180)                                   | WP <sup>2</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           |
|                          |                | Od <sub>min</sub> - Od <sub>max</sub> (mm) | <br>[bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque (Nm) |
| 180.0                    | Flex E 180.0   | 178.0 - 182.0                              | 13,5                                                                                       | 30,0                                                                                       | 35               | 139                     | 210       | 240       | 4,0                 | M 12 SW 10               | 25                        |
| 193.7                    | Flex E 193.7   | 192.0 - 196.0                              | 13,5                                                                                       | 28,0                                                                                       | 35               | 139                     | 225       | 255       | 4,1                 | M 12 SW 10               | 25                        |
| 206.0                    | Flex E 206.0   | 202.0 - 208.0                              | 13,5                                                                                       | 26,5                                                                                       | 35               | 139                     | 240       | 270       | 4,3                 | M 12 SW 10               | 25                        |
| 219.0                    | Flex E 219.0   | 216.0 - 221.0                              | 13,5                                                                                       | 23,0                                                                                       | 35               | 139                     | 250       | 280       | 4,4                 | M 12 SW 10               | 25                        |
| 225.0                    | Flex E 225.0   | 222.0 - 227.0                              | 12,0                                                                                       | 23,0                                                                                       | 35               | 139                     | 255       | 285       | 4,5                 | M 12 SW 10               | 25                        |
| 229.9                    | Flex E 229.9   | 228.0 - 232.0                              | 12,0                                                                                       | 23,0                                                                                       | 35               | 139                     | 260       | 290       | 4,5                 | M 12 SW 10               | 25                        |
| 244.5                    | Flex E 244.5   | 242.0 - 247.0                              | 12,0                                                                                       | 22,0                                                                                       | 35               | 139                     | 275       | 305       | 4,7                 | M 12 SW 10               | 25                        |
| 254.0                    | Flex E 254.0   | 250.0 - 256.0                              | 12,0                                                                                       | 21,0                                                                                       | 35               | 139                     | 285       | 315       | 4,8                 | M 12 SW 10               | 25                        |
| 267.0                    | Flex E 267.0   | 264.0 - 269.0                              | 12,0                                                                                       | 20,0                                                                                       | 35               | 139                     | 300       | 330       | 5,0                 | M 12 SW 10               | 25                        |
| 273.0                    | Flex E 273.0   | 270.0 - 275.0                              | 12,0                                                                                       | 20,0                                                                                       | 35               | 139                     | 305       | 335       | 5,1                 | M 12 SW 10               | 25                        |
| 306.0                    | Flex E 306.0   | 302.0 - 308.0                              | 9,0                                                                                        | 17,5                                                                                       | 35               | 139                     | 340       | 370       | 5,5                 | M 12 SW 10               | 25                        |
| 323.9                    | Flex E 323.9   | 320.0 - 327.0                              | 9,0                                                                                        | 17,5                                                                                       | 35               | 139                     | 355       | 385       | 5,7                 | M 12 SW 10               | 25                        |
| 326.0                    | Flex E 326.0   | 322.0 - 329.0                              | 9,0                                                                                        | 16,5                                                                                       | 35               | 139                     | 360       | 390       | 5,7                 | M 12 SW 10               | 25                        |
| 355.6                    | Flex E 355.6   | 352.0 - 359.0                              | 9,0                                                                                        | 15,0                                                                                       | 35               | 139                     | 390       | 420       | 6,0                 | M 12 SW 10               | 25                        |
| 406.4                    | Flex E 406.4   | 402.0 - 410.0                              | 7,5                                                                                        | 14,0                                                                                       | 35               | 139                     | 440       | 470       | 6,7                 | M 12 SW 10               | 25                        |
| 429.0                    | Flex E 429.0   | 426.0 - 431.0                              | 5,5                                                                                        | 13,0                                                                                       | 35               | 139                     | 460       | 490       | 6,9                 | M 12 SW 10               | 40                        |
| 442.0                    | Flex E 442.0   | 439.0 - 444.0                              | 5,5                                                                                        | 13,0                                                                                       | 35               | 139                     | 475       | 505       | 7,1                 | M 12 SW 10               | 40                        |
| 457.2                    | Flex E 457.2   | 454.0 - 459.0                              | 5,5                                                                                        | 12,0                                                                                       | 35               | 139                     | 490       | 520       | 7,3                 | M 12 SW 10               | 40                        |
| 508.0                    | Flex E 508.0   | 505.0 - 510.0                              | 5,5                                                                                        | 11,0                                                                                       | 35               | 139                     | 540       | 570       | 7,9                 | M 12 SW 10               | 40                        |
| 531.0                    | Flex E 531.0   | 528.0 - 534.0                              | 5,5                                                                                        | 10,5                                                                                       | 35               | 139                     | 565       | 595       | 8,1                 | M 12 SW 10               | 40                        |
| 558.8                    | Flex E 558.8   | 556.0 - 562.0                              | 5,5                                                                                        | 10,0                                                                                       | 35               | 139                     | 590       | 620       | 8,5                 | M 12 SW 10               | 40                        |
| 609.6                    | Flex E 609.6   | 606.0 - 613.0                              | 4,5                                                                                        | 9,0                                                                                        | 35               | 139                     | 640       | 670       | 9,1                 | M 12 SW 10               | 40                        |
| 634.0                    | Flex E 634.0   | 631.0 - 637.0                              | 4,5                                                                                        | 8,0                                                                                        | 35               | 139                     | 665       | 695       | 9,4                 | M 12 SW 10               | 40                        |
| 711.2                    | Flex E 711.2   | 707.0 - 715.0                              | 4,0                                                                                        | 7,0                                                                                        | 35               | 139                     | 745       | 775       | 10,3                | M 12 SW 10               | 40                        |
| 762.0                    | Flex E 762.0   | 758.0 - 766.0                              | 3,2                                                                                        | 7,0                                                                                        | 35               | 139                     | 795       | 885       | 10,9                | M 12 SW 10               | 40                        |
| 812.8                    | Flex E 812.8   | 808.0 - 817.0                              | 3,2                                                                                        | 6,5                                                                                        | 35               | 139                     | 845       | 935       | 12,8                | M 12 SW 10               | 40                        |
| 914.4                    | Flex E 914.4   | 909.0 - 919.0                              | 2,0                                                                                        | 5,5                                                                                        | 35               | 139                     | 945       | 1.035     | 14,0                | M 12 SW 10               | 45                        |
| 1,016.0                  | Flex E 1,016.0 | 1,013.0 - 1,019.0                          | 2,0                                                                                        | 5,0                                                                                        | 35               | 139                     | 1.050     | 1.140     | 15,2                | M 12 SW 10               | 45                        |
| 1,117.5                  | Flex E 1,117.5 | 1,114.0 - 1,120.0                          | 2,0                                                                                        | 4,5                                                                                        | 35               | 139                     | 1.150     | 1.240     | 16,4                | M 12 SW 10               | 50                        |
| 1,219.2                  | Flex E 1,219.2 | 1,216.0 - 1,222.0                          | 2,0                                                                                        | 4,0                                                                                        | 35               | 139                     | 1.250     | 1.340     | 17,7                | M 12 SW 10               | 50                        |



## Technical data &amp; Ordering information

| NORMACONNECT® FGR Flex E |                  |                   |               |                   |               |                   |               |
|--------------------------|------------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| Ø<br>(O.D.)              | Designation      | W2<br>Product No. |               | W4<br>Product No. |               | W5<br>Product No. |               |
|                          |                  | EPDM              | NBR           | EPDM              | NBR           | EPDM              | NBR           |
| 26.9                     | FGR Flex E 26.9  | 0582 9100 026     | 0582 8400 026 | 0582 9200 026     | 0582 8500 026 | 0582 9300 026     | 0582 8600 026 |
| 28.0                     | FGR Flex E 28.0  | 0582 9100 028     | 0582 8400 028 | 0582 9200 028     | 0582 8500 028 | 0582 9300 028     | 0582 8600 028 |
| 30.0                     | FGR Flex E 30.0  | 0582 9100 030     | 0582 8400 030 | 0582 9200 030     | 0582 8500 030 | 0582 9300 030     | 0582 8600 030 |
| 33.7                     | FGR Flex E 33.7  | 0582 9100 033     | 0582 8400 033 | 0582 9200 033     | 0582 8500 033 | 0582 9300 033     | 0582 8600 033 |
| 35.0                     | FGR Flex E 35.0  | 0582 9100 035     | 0582 8400 035 | 0582 9200 035     | 0582 8500 035 | 0582 9300 035     | 0582 8600 035 |
| 38.0                     | FGR Flex E 38.0  | 0582 9100 038     | 0582 8400 038 | 0582 9200 038     | 0582 8500 038 | 0582 9300 038     | 0582 8600 038 |
| 42.4                     | FGR Flex E 42.4  | 0582 9100 042     | 0582 8400 042 | 0582 9200 042     | 0582 8500 042 | 0582 9300 042     | 0582 8600 042 |
| 44.5                     | FGR Flex E 44.5  | 0582 9100 044     | 0582 8400 044 | 0582 9200 044     | 0582 8500 044 | 0582 9300 044     | 0582 8600 044 |
| 48.3                     | FGR Flex E 48.3  | 0582 9100 048     | 0582 8400 048 | 0582 9200 048     | 0582 8500 048 | 0582 9300 048     | 0582 8600 048 |
| 54.0                     | FGR Flex E 54.0  | 0582 9100 054     | 0582 8400 054 | 0582 9200 054     | 0582 8500 054 | 0582 9300 054     | 0582 8600 054 |
| 57.0                     | FGR Flex E 57.0  | 0582 9100 057     | 0582 8400 057 | 0582 9200 057     | 0582 8500 057 | 0582 9300 057     | 0582 8600 057 |
| 60.3                     | FGR Flex E 60.3  | 0582 9100 060     | 0582 8400 060 | 0582 9200 060     | 0582 8500 060 | 0582 9300 060     | 0582 8600 060 |
| 63.0                     | FGR Flex E 63.0  | 0582 9100 063     | 0582 8400 063 | 0582 9200 063     | 0582 8500 063 | 0582 9300 063     | 0582 8600 063 |
| 70.0                     | FGR Flex E 70.0  | 0582 9100 070     | 0582 8400 070 | 0582 9200 070     | 0582 8500 070 | 0582 9300 070     | 0582 8600 070 |
| 73.0                     | FGR Flex E 73.0  | 0582 9100 073     | 0582 8400 073 | 0582 9200 073     | 0582 8500 073 | 0582 9300 073     | 0582 8600 073 |
| 76.1                     | FGR Flex E 76.1  | 0582 9100 076     | 0582 8400 076 | 0582 9200 076     | 0582 8500 076 | 0582 9300 076     | 0582 8600 076 |
| 80.0                     | FGR Flex E 80.0  | 0582 9100 080     | 0582 8400 080 | 0582 9200 080     | 0582 8500 080 | 0582 9300 080     | 0582 8600 080 |
| 84.0                     | FGR Flex E 84.0  | 0582 9100 084     | 0582 8400 084 | 0582 9200 084     | 0582 8500 084 | 0582 9300 084     | 0582 8600 084 |
| 88.9                     | FGR Flex E 88.9  | 0582 9100 088     | 0582 8400 088 | 0582 9200 088     | 0582 8500 088 | 0582 9300 088     | 0582 8600 088 |
| 101.6                    | FGR Flex E 101.6 | 0582 9100 101     | 0582 8400 101 | 0582 9200 101     | 0582 8500 101 | 0582 9300 101     | 0582 8600 101 |
| 104.0                    | FGR Flex E 104.0 | 0582 9100 104     | 0582 8400 104 | 0582 9200 104     | 0582 8500 104 | 0582 9300 104     | 0582 8600 104 |
| 108.0                    | FGR Flex E 108.0 | 0582 9100 108     | 0582 8400 108 | 0582 9200 108     | 0582 8500 108 | 0582 9300 108     | 0582 8600 108 |
| 110.0                    | FGR Flex E 110.0 | 0582 9100 110     | 0582 8400 110 | 0582 9200 110     | 0582 8500 110 | 0582 9300 110     | 0582 8600 110 |
| 114.3                    | FGR Flex E 114.3 | 0582 9100 114     | 0582 8400 114 | 0582 9200 114     | 0582 8500 114 | 0582 9300 114     | 0582 8600 114 |
| 129.0                    | FGR Flex E 129.0 | 0582 9100 129     | 0582 8400 129 | 0582 9200 129     | 0582 8500 129 | 0582 9300 129     | 0582 8600 129 |
| 133.0                    | FGR Flex E 133.0 | 0582 9100 133     | 0582 8400 133 | 0582 9200 133     | 0582 8500 133 | 0582 9300 133     | 0582 8600 133 |
| 139.7                    | FGR Flex E 139.7 | 0582 9100 139     | 0582 8400 139 | 0582 9200 139     | 0582 8500 139 | 0582 9300 139     | 0582 8600 139 |
| 141.3                    | FGR Flex E 141.3 | 0582 9100 141     | 0582 8400 141 | 0582 9200 141     | 0582 8500 141 | 0582 9300 141     | 0582 8600 141 |
| 154.0                    | FGR Flex E 154.0 | 0582 9100 154     | 0582 8400 154 | 0582 9200 154     | 0582 8500 154 | 0582 9300 154     | 0582 8600 154 |
| 159.0                    | FGR Flex E 159.0 | 0582 9100 159     | 0582 8400 159 | 0582 9200 159     | 0582 8500 159 | 0582 9300 159     | 0582 8600 159 |
| 168.3                    | FGR Flex E 168.3 | 0582 9100 168     | 0582 8400 168 | 0582 9200 168     | 0582 8500 168 | 0582 9300 168     | 0582 8600 168 |

## Technical data &amp; Ordering information

| NORMACONNECT® FGR Flex E |                    |                   |               |                   |               |                   |               |
|--------------------------|--------------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| Ø<br>(O.D.)              | Designation        | W2<br>Product No. |               | W4<br>Product No. |               | W5<br>Product No. |               |
|                          |                    | EPDM              | NBR           | EPDM              | NBR           | EPDM              | NBR           |
| 180.0                    | FGR Flex E 180.0   | 0583 8120 180     | 0583 8420 180 | 0583 8220 180     | 0583 8520 180 | 0583 8320 180     | 0583 8620 180 |
| 193.7                    | FGR Flex E 193.7   | 0583 8120 193     | 0583 8420 193 | 0583 8220 193     | 0583 8520 193 | 0583 8320 193     | 0583 8620 193 |
| 206.0                    | FGR Flex E 206.0   | 0583 8120 206     | 0583 8420 206 | 0583 8220 206     | 0583 8520 206 | 0583 8320 206     | 0583 8620 206 |
| 219.0                    | FGR Flex E 219.0   | 0583 8120 219     | 0583 8420 219 | 0583 8220 219     | 0583 8520 219 | 0583 8320 219     | 0583 8620 219 |
| 225.0                    | FGR Flex E 225.0   | 0583 8120 225     | 0583 8420 225 | 0583 8220 225     | 0583 8520 225 | 0583 8320 225     | 0583 8620 225 |
| 229.9                    | FGR Flex E 229.9   | 0583 8120 229     | 0583 8420 229 | 0583 8220 229     | 0583 8520 229 | 0583 8320 229     | 0583 8620 229 |
| 244.5                    | FGR Flex E 244.5   | 0583 8120 244     | 0583 8420 244 | 0583 8220 244     | 0583 8520 244 | 0583 8320 244     | 0583 8620 244 |
| 254.0                    | FGR Flex E 254.0   | 0583 8120 254     | 0583 8420 254 | 0583 8220 254     | 0583 8520 254 | 0583 8320 254     | 0583 8620 254 |
| 267.0                    | FGR Flex E 267.0   | 0583 8120 267     | 0583 8420 267 | 0583 8220 267     | 0583 8520 267 | 0583 8320 267     | 0583 8620 267 |
| 273.0                    | FGR Flex E 273.0   | 0583 8120 273     | 0583 8420 273 | 0583 8220 273     | 0583 8520 273 | 0583 8320 273     | 0583 8620 273 |
| 306.0                    | FGR Flex E 306.0   | 0583 8120 306     | 0583 8420 306 | 0583 8220 306     | 0583 8520 306 | 0583 8320 306     | 0583 8620 306 |
| 323.9                    | FGR Flex E 323.9   | 0583 8120 323     | 0583 8420 323 | 0583 8220 323     | 0583 8520 323 | 0583 8320 323     | 0583 8620 323 |
| 326.0                    | FGR Flex E 326.0   | 0583 8120 326     | 0583 8420 326 | 0583 8220 326     | 0583 8520 326 | 0583 8320 326     | 0583 8620 326 |
| 355.6                    | FGR Flex E 355.6   | 0583 8120 355     | 0583 8420 355 | 0583 8220 355     | 0583 8520 355 | 0583 8320 355     | 0583 8620 355 |
| 406.4                    | FGR Flex E 406.4   | 0583 8120 406     | 0583 8420 406 | 0583 8220 406     | 0583 8520 406 | 0583 8320 406     | 0583 8620 406 |
| 429.0                    | FGR Flex E 429.0   | 0583 8120 429     | 0583 8420 429 | 0583 8220 429     | 0583 8520 429 | 0583 8320 429     | 0583 8620 429 |
| 442.0                    | FGR Flex E 442.0   | 0583 8120 442     | 0583 8420 442 | 0583 8220 442     | 0583 8520 442 | 0583 8320 442     | 0583 8620 442 |
| 457.2                    | FGR Flex E 457.2   | 0583 8120 457     | 0583 8420 457 | 0583 8220 457     | 0583 8520 457 | 0583 8320 457     | 0583 8620 457 |
| 508.0                    | FGR Flex E 508.0   | 0583 8120 508     | 0583 8420 508 | 0583 8220 508     | 0583 8520 508 | 0583 8320 508     | 0583 8620 508 |
| 531.0                    | FGR Flex E 531.0   | 0583 8120 531     | 0583 8420 531 | 0583 8220 531     | 0583 8520 531 | 0583 8320 531     | 0583 8620 531 |
| 558.8                    | FGR Flex E 558.8   | 0583 8120 558     | 0583 8420 558 | 0583 8220 558     | 0583 8520 558 | 0583 8320 558     | 0583 8620 558 |
| 609.6                    | FGR Flex E 609.6   | 0583 8120 609     | 0583 8420 609 | 0583 8220 609     | 0583 8520 609 | 0583 8320 609     | 0583 8620 609 |
| 634.0                    | FGR Flex E 634.0   | 0583 8120 634     | 0583 8420 634 | 0583 8220 634     | 0583 8520 634 | 0583 8320 634     | 0583 8620 634 |
| 711.2                    | FGR Flex E 711.2   | 0583 8120 711     | 0583 8420 711 | 0583 8220 711     | 0583 8520 711 | 0583 8320 711     | 0583 8620 711 |
| 762.0                    | FGR Flex E 762.0   | 0583 8120 762     | 0583 8420 762 | 0583 8220 762     | 0583 8520 762 | 0583 8320 762     | 0583 8620 762 |
| 812.8                    | FGR Flex E 812.8   | 0583 8120 812     | 0583 8420 812 | 0583 8220 812     | 0583 8520 812 | 0583 8320 8012    | 0583 8620 812 |
| 914.4                    | FGR Flex E 914.4   | 0583 8120 914     | 0583 8420 914 | 0583 8220 914     | 0583 8520 914 | 0583 8320 914     | 0583 8620 914 |
| 1,016.0                  | FGR Flex E 1,016.0 | 0583 8121 016     | 0583 8421 016 | 0583 8221 016     | 0583 8521 016 | 0583 8321 016     | 0583 8621 016 |
| 1,117.5                  | FGR Flex E 1,117.5 | 0583 8121 117     | 0583 8421 117 | 0583 8221 117     | 0583 8521 117 | 0583 8321 117     | 0583 8621 117 |
| 1,219.2                  | FGR Flex E 1,219.2 | 0583 8121 219     | 0583 8421 219 | 0583 8221 219     | 0583 8521 219 | 0583 8321 219     | 0583 8621 219 |



NORMACONNECT® FGR Flex is an axial non-restraint coupling. It is used for connecting metal pipes, stainless pipes, as well as concrete and plastic pipes. This is a full trunnions version.

### Material

W2, W4, W5

| NORMACONNECT® FGR Flex |              |                                            |                                                                                             |                                                                                            |                  |                         |           |           |                     |                          |                           |
|------------------------|--------------|--------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|
| Ø<br>(O.D.)            | Designation  | Clamping ranges                            | PN <sup>1</sup><br>(MAWP <sup>1</sup> from Ø 180)                                           | WP <sup>2</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           |
|                        |              | Od <sub>min</sub> - Od <sub>max</sub> (mm) | <br>[ bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque (Nm) |
| 180.0                  | Flex 180.0   | 178.0 - 182.0                              | 16.0                                                                                        | 50.0                                                                                       | 35               | 141                     | 210       | 240       | 5.4                 | M 12 SW 10               | 35                        |
| 193.7                  | Flex 193.7   | 192.0 - 196.0                              | 16.0                                                                                        | 46.0                                                                                       | 35               | 141                     | 225       | 255       | 5.6                 | M 12 SW 10               | 35                        |
| 206.0                  | Flex 206.0   | 202.0 - 208.0                              | 16.0                                                                                        | 43.0                                                                                       | 35               | 141                     | 240       | 270       | 5.8                 | M 12 SW 10               | 35                        |
| 219.0                  | Flex 219.0   | 216.0 - 221.0                              | 16.0                                                                                        | 40.5                                                                                       | 35               | 141                     | 250       | 280       | 6.0                 | M 12 SW 10               | 35                        |
| 225.0                  | Flex 225.0   | 222.0 - 227.0                              | 16.0                                                                                        | 40.0                                                                                       | 35               | 141                     | 255       | 285       | 6.1                 | M 12 SW 10               | 35                        |
| 229.9                  | Flex 229.9   | 228.0 - 232.0                              | 16.0                                                                                        | 39.0                                                                                       | 35               | 141                     | 260       | 290       | 6.2                 | M 12 SW 10               | 35                        |
| 244.5                  | Flex 244.5   | 242.0 - 247.0                              | 16.0                                                                                        | 37.0                                                                                       | 35               | 141                     | 275       | 305       | 6.4                 | M 12 SW 10               | 35                        |
| 254.0                  | Flex 254.0   | 250.0 - 256.0                              | 16.0                                                                                        | 35.5                                                                                       | 35               | 141                     | 285       | 315       | 6.5                 | M 12 SW 10               | 35                        |
| 267.0                  | Flex 267.0   | 264.0 - 269.0                              | 16.0                                                                                        | 33.5                                                                                       | 35               | 141                     | 300       | 330       | 6.7                 | M 12 SW 10               | 35                        |
| 273.0                  | Flex 273.0   | 270.0 - 275.0                              | 16.0                                                                                        | 33.0                                                                                       | 35               | 141                     | 305       | 335       | 6.8                 | M 12 SW 10               | 35                        |
| 306.0                  | Flex 306.0   | 302.0 - 308.0                              | 15.0                                                                                        | 29.0                                                                                       | 35               | 141                     | 340       | 370       | 7.4                 | M 12 SW 10               | 35                        |
| 323.9                  | Flex 323.9   | 320.0 - 327.0                              | 15.0                                                                                        | 28.0                                                                                       | 35               | 141                     | 355       | 385       | 7.6                 | M 12 SW 10               | 35                        |
| 326.0                  | Flex 326.0   | 322.0 - 329.0                              | 13.0                                                                                        | 27.5                                                                                       | 35               | 141                     | 360       | 390       | 7.7                 | M 12 SW 10               | 35                        |
| 355.6                  | Flex 355.6   | 352.0 - 359.0                              | 13.0                                                                                        | 25.0                                                                                       | 35               | 141                     | 390       | 420       | 8.1                 | M 12 SW 10               | 35                        |
| 406.4                  | Flex 406.4   | 402.0 - 410.0                              | 10.0                                                                                        | 22.0                                                                                       | 35               | 141                     | 440       | 470       | 8.9                 | M 12 SW 10               | 35                        |
| 429.0                  | Flex 429.0   | 426.0 - 431.0                              | 7.5                                                                                         | 21.0                                                                                       | 35               | 141                     | 460       | 490       | 9.3                 | M 12 SW 10               | 40                        |
| 442.0                  | Flex 442.0   | 439.0 - 444.0                              | 7.5                                                                                         | 20.0                                                                                       | 35               | 141                     | 475       | 505       | 9.5                 | M 12 SW 10               | 40                        |
| 457.2                  | Flex 457.2   | 454.0 - 459.0                              | 7.5                                                                                         | 19.5                                                                                       | 35               | 141                     | 490       | 520       | 9.7                 | M 12 SW 10               | 40                        |
| 508.0                  | Flex 508.0   | 505.0 - 510.0                              | 7.5                                                                                         | 17.0                                                                                       | 35               | 141                     | 540       | 570       | 10.5                | M 12 SW 10               | 40                        |
| 531.0                  | Flex 531.0   | 528.0 - 534.0                              | 7.5                                                                                         | 16.0                                                                                       | 35               | 141                     | 565       | 595       | 10.9                | M 12 SW 10               | 50                        |
| 558.8                  | Flex 558.8   | 556.0 - 562.0                              | 7.5                                                                                         | 15.5                                                                                       | 35               | 141                     | 590       | 620       | 11.3                | M 12 SW 10               | 50                        |
| 609.6                  | Flex 609.6   | 606.0 - 613.0                              | 6.0                                                                                         | 14.0                                                                                       | 35               | 141                     | 640       | 670       | 12.1                | M 12 SW 10               | 50                        |
| 634.0                  | Flex 634.0   | 631.0 - 637.0                              | 5.0                                                                                         | 13.5                                                                                       | 35               | 141                     | 665       | 695       | 12.5                | M 12 SW 10               | 50                        |
| 711.2                  | Flex 711.2   | 707.0 - 715.0                              | 5.0                                                                                         | 12.0                                                                                       | 35               | 141                     | 745       | 775       | 13.7                | M 12 SW 10               | 50                        |
| 762.0                  | Flex 762.0   | 758.0 - 766.0                              | 4.5                                                                                         | 11.0                                                                                       | 35               | 141                     | 795       | 885       | 14.5                | M 12 SW 10               | 50                        |
| 812.8                  | Flex 812.8   | 808.0 - 817.0                              | 4.5                                                                                         | 10.5                                                                                       | 35               | 141                     | 845       | 935       | 17.2                | M 12 SW 10               | 50                        |
| 914.4                  | Flex 914.4   | 909.0 - 919.0                              | 3.3                                                                                         | 9.5                                                                                        | 35               | 141                     | 945       | 1,035     | 18.8                | M 12 SW 10               | 60                        |
| 1,016.0                | Flex 1,016.0 | 1,013.0 - 1,019.0                          | 3.3                                                                                         | 8.0                                                                                        | 35               | 141                     | 1,050     | 1,140     | 20.4                | M 12 SW 10               | 60                        |
| 1,117.5                | Flex 1,117.5 | 1,114.0 - 1,120.0                          | 3.3                                                                                         | 7.5                                                                                        | 35               | 141                     | 1,150     | 1,240     | 22.0                | M 12 SW 10               | 60                        |
| 1,219.2                | Flex 1,219.2 | 1,216.0 - 1,222.0                          | 3.3                                                                                         | 7.0                                                                                        | 35               | 141                     | 1,250     | 1,340     | 23.6                | M 12 SW 10               | 60                        |

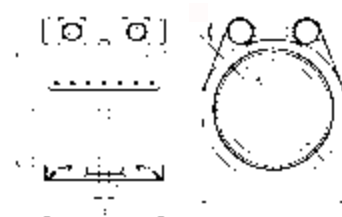
PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

MAWP<sup>1</sup> (Maximum Allowable Working Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.



## Technical data & Ordering information



| NORMACONNECT® FGR Flex |              |                   |               |                   |               |                   |               |
|------------------------|--------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| Ø<br>(O.D.)            | Designation  | W2<br>Product No. |               | W4<br>Product No. |               | W5<br>Product No. |               |
|                        |              | EPDM              | NBR           | EPDM              | NBR           | EPDM              | NBR           |
| 180.0                  | Flex 180.0   | 0575 8140 180     | 0575 8440 180 | 0575 8240 180     | 0575 8540 180 | 0575 8340 180     | 0575 8640 180 |
| 193.7                  | Flex 193.7   | 0575 8140 193     | 0575 8440 193 | 0575 8240 193     | 0575 8540 193 | 0575 8340 193     | 0575 8640 193 |
| 206.0                  | Flex 206.0   | 0575 8140 206     | 0575 8440 206 | 0575 8240 206     | 0575 8540 206 | 0575 8340 206     | 0575 8640 206 |
| 219.0                  | Flex 219.0   | 0575 8140 219     | 0575 8440 219 | 0575 8240 219     | 0575 8540 219 | 0575 8340 219     | 0575 8640 219 |
| 225.0                  | Flex 225.0   | 0575 8140 225     | 0575 8440 225 | 0575 8240 225     | 0575 8540 225 | 0575 8340 225     | 0575 8640 225 |
| 229.9                  | Flex 229.9   | 0575 8140 229     | 0575 8440 229 | 0575 8240 229     | 0575 8540 229 | 0575 8340 229     | 0575 8640 229 |
| 244.5                  | Flex 244.5   | 0575 8140 244     | 0575 8440 244 | 0575 8240 244     | 0575 8540 244 | 0575 8340 244     | 0575 8640 244 |
| 254.0                  | Flex 254.0   | 0575 8140 254     | 0575 8440 254 | 0575 8240 254     | 0575 8540 254 | 0575 8340 254     | 0575 8640 254 |
| 267.0                  | Flex 267.0   | 0575 8140 267     | 0575 8440 267 | 0575 8240 267     | 0575 8540 267 | 0575 8340 267     | 0575 8640 267 |
| 273.0                  | Flex 273.0   | 0575 8140 273     | 0575 8440 273 | 0575 8240 273     | 0575 8540 273 | 0575 8340 273     | 0575 8640 273 |
| 306.0                  | Flex 306.0   | 0575 8140 306     | 0575 8440 306 | 0575 8240 306     | 0575 8540 306 | 0575 8340 306     | 0575 8640 306 |
| 323.9                  | Flex 323.9   | 0575 8140 323     | 0575 8440 323 | 0575 8240 323     | 0575 8540 323 | 0575 8340 323     | 0575 8640 323 |
| 326.0                  | Flex 326.0   | 0575 8140 326     | 0575 8440 326 | 0575 8240 326     | 0575 8540 326 | 0575 8340 326     | 0575 8640 326 |
| 355.6                  | Flex 355.6   | 0575 8140 355     | 0575 8440 355 | 0575 8240 355     | 0575 8540 355 | 0575 8340 355     | 0575 8640 355 |
| 406.4                  | Flex 406.4   | 0575 8140 406     | 0575 8440 406 | 0575 8240 406     | 0575 8540 406 | 0575 8340 406     | 0575 8640 406 |
| 429.0                  | Flex 429.0   | 0575 8140 429     | 0575 8440 429 | 0575 8240 429     | 0575 8540 429 | 0575 8340 429     | 0575 8640 429 |
| 442.0                  | Flex 442.0   | 0575 8140 442     | 0575 8440 442 | 0575 8240 442     | 0575 8540 442 | 0575 8340 442     | 0575 8640 442 |
| 457.2                  | Flex 457.2   | 0575 8140 457     | 0575 8440 457 | 0575 8240 457     | 0575 8540 457 | 0575 8340 457     | 0575 8640 457 |
| 508.0                  | Flex 508.0   | 0575 8140 508     | 0575 8440 508 | 0575 8240 508     | 0575 8540 508 | 0575 8340 508     | 0575 8640 508 |
| 531.0                  | Flex 531.0   | 0575 8140 531     | 0575 8440 531 | 0575 8240 531     | 0575 8540 531 | 0575 8340 531     | 0575 8640 531 |
| 558.8                  | Flex 558.8   | 0575 8140 558     | 0575 8440 558 | 0575 8240 558     | 0575 8540 558 | 0575 8340 558     | 0575 8640 558 |
| 609.6                  | Flex 609.6   | 0575 8140 609     | 0575 8440 609 | 0575 8240 609     | 0575 8540 609 | 0575 8340 609     | 0575 8640 609 |
| 634.0                  | Flex 634.0   | 0575 8140 634     | 0575 8440 634 | 0575 8240 634     | 0575 8540 634 | 0575 8340 634     | 0575 8640 634 |
| 711.2                  | Flex 711.2   | 0575 8140 711     | 0575 8440 711 | 0575 8240 711     | 0575 8540 711 | 0575 8340 711     | 0575 8640 711 |
| 762.0                  | Flex 762.0   | 0575 8140 762     | 0575 8440 762 | 0575 8240 762     | 0575 8540 762 | 0575 8340 762     | 0575 8640 762 |
| 812.8                  | Flex 812.8   | 0575 8140 812     | 0575 8440 812 | 0575 8240 812     | 0575 8540 812 | 0575 8340 812     | 0575 8640 812 |
| 914.4                  | Flex 914.4   | 0575 8140 914     | 0575 8440 914 | 0575 8240 914     | 0575 8540 914 | 0575 8340 914     | 0575 8640 914 |
| 1,016.0                | Flex 1,016.0 | 0575 8141 016     | 0575 8441 016 | 0575 8241 016     | 0575 8541 016 | 0575 8341 016     | 0575 8641 016 |
| 1,117.5                | Flex 1,117.5 | 0575 8141 117     | 0575 8441 117 | 0575 8241 117     | 0575 8541 117 | 0575 8341 117     | 0575 8641 117 |
| 1,219.2                | Flex 1,219.2 | 0575 8141 219     | 0575 8441 219 | 0575 8241 219     | 0575 8541 219 | 0575 8341 219     | 0575 8641 219 |



- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Lock bars



NORMACONNECT® FGR Flex 3 pipe coupling with extra wide band width of 211 mm

## The pipe coupling with extra wide band

NORMACONNECT® FGR Flex 3 featuring an extra wide band is an axial non-restraint coupling used to connect metal and/or plastic pipes quickly and safely.



### Advantages at a glance

- ✓ Easy and quick to assemble
- ✓ Pipe end distance up to 65 mm possible
- ✓ Compensation of misalignment, angular deflection up to 4° possible

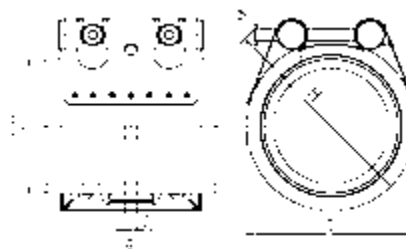
### Information

- Sizes: from 812.8 mm to 2,032.0 mm
- Working pressure: 6.5 bar – 1.5 bar
- Solid trunnions
- 2 closure units
- Material: AISI 316 Ti
- EPDM: from -20 °C up to +80 °C
- NBR: from -20 °C up to +80 °C

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Technical data & Ordering information

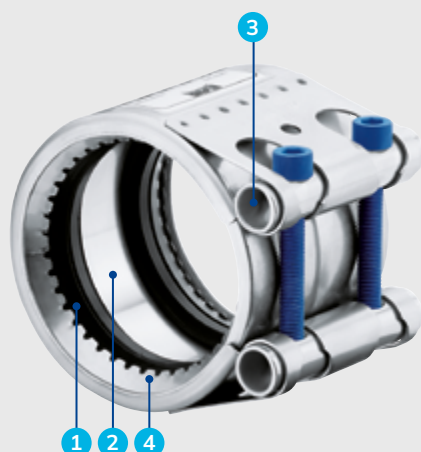


## Technical data & Ordering information

| NORMACONNECT® FGR Flex 3 |                |                                               |                                                                                            |                  |                         |           |           |                     |                          |                           |                   |               |
|--------------------------|----------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|-------------------|---------------|
| Ø<br>(O.D.)              | Designation    | Clamping<br>ranges                            | WP <sup>1</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           | W5<br>Product No. |               |
|                          |                | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque (Nm) | EPDM              | NBR           |
| 812.8                    | Flex 3 812.8   | 808.0 - 817.0                                 | 6.5                                                                                        | 65               | 211                     | 850       | 890       | 21.4                | M 16 SW 14               | 45                        | 0571 8330 812     | 0571 8630 812 |
| 914.4                    | Flex 3 914.4   | 909.0 - 919.0                                 | 6.0                                                                                        | 65               | 211                     | 950       | 990       | 23.4                | M 16 SW 14               | 45                        | 0571 8330 914     | 0571 8630 914 |
| 1,016.0                  | Flex 3 1,016.0 | 1,013.0 - 1,019.0                             | 5.0                                                                                        | 65               | 211                     | 1,055     | 1,095     | 25.4                | M 16 SW 14               | 50                        | 0571 8331 016     | 0571 8631 016 |
| 1,117.5                  | Flex 3 1,117.5 | 1,114.0 - 1,120.0                             | 4.5                                                                                        | 65               | 211                     | 1,155     | 1,195     | 27.4                | M 16 SW 14               | 50                        | 0571 8331 117     | 0571 8631 117 |
| 1,219.2                  | Flex 3 1,219.2 | 1,216.0 - 1,222.0                             | 4.0                                                                                        | 65               | 211                     | 1,255     | 1,295     | 29.4                | M 16 SW 14               | 55                        | 0571 8331 219     | 0571 8631 219 |
| 1,320.8                  | Flex 3 1,320.8 | 1,314.0 - 1,328.0                             | 3.0                                                                                        | 65               | 211                     | 1,360     | 1,400     | 31.4                | M 16 SW 14               | 55                        | 0571 8331 320     | 0571 8631 320 |
| 1,422.4                  | Flex 3 1,422.4 | 1,415.0 - 1,430.0                             | 3.0                                                                                        | 65               | 211                     | 1,460     | 1,500     | 33.4                | M 16 SW 14               | 60                        | 0571 8331 422     | 0571 8631 422 |
| 1,524.0                  | Flex 3 1,524.0 | 1,516.0 - 1,532.0                             | 2.5                                                                                        | 65               | 211                     | 1,560     | 1,600     | 35.4                | M 16 SW 14               | 60                        | 0571 8331 524     | 0571 8631 524 |
| 1,625.6                  | Flex 3 1,625.6 | 1,617.0 - 1,634.0                             | 2.5                                                                                        | 65               | 211                     | 1,665     | 1,705     | 37.4                | M 16 SW 14               | 70                        | 0571 8331 625     | 0571 8631 625 |
| 1,727.2                  | Flex 3 1,727.2 | 1,718.0 - 1,736.0                             | 2.0                                                                                        | 65               | 211                     | 1,765     | 1,805     | 39.4                | M 16 SW 14               | 70                        | 0571 8331 727     | 0571 8631 727 |
| 1,828.8                  | Flex 3 1,828.8 | 1,819.0 - 1,838.0                             | 2.0                                                                                        | 65               | 211                     | 1,865     | 1,905     | 41.4                | M 16 SW 14               | 80                        | 0571 8331 828     | 0571 8631 828 |
| 1,930.4                  | Flex 3 1,930.4 | 1,320.0 - 1,940.0                             | 2.0                                                                                        | 65               | 211                     | 1,970     | 2,010     | 43.4                | M 16 SW 14               | 80                        | 0571 8331 930     | 0571 8631 930 |
| 2,032.0                  | Flex 3 2,032.0 | 2,021.0 - 2,042.0                             | 1.5                                                                                        | 65               | 211                     | 2,070     | 2,110     | 45.4                | M 16 SW 14               | 80                        | 0571 8332 032     | 0571 8632 032 |

WP<sup>1</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.





- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Lock bars
- 4 Anchoring ring with conically stamped teeth

## The strong pipe coupling

NORMACONNECT® FGR Grip/Grip E axial restraint pipe couplings are used to connect metal pipes. The anchoring ring with conically stamped teeth indents into the pipe surface (steel, stainless steel or cast iron) and provides safe and strong axial restraint. Owing to the special design, the coupling can withstand even high vibration loads.

### Advantages at a glance

- ✓ Progressive locking effect ensures a trouble- and maintenance-free connection
- ✓ Reusable
- ✓ Shock resistant
- ✓ Space saving connector
- ✓ Withstand high vibration loads

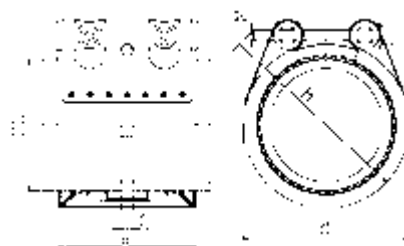
### Information

- Sizes: 26.9 mm – 812.8 mm
- Working pressure: 70.0 bar – 1 bar
- Material: AISI 304, AISI 316 Ti
- EPDM:
  - Sizes from 26.9 mm up to 168.3 mm: -30 °C up to +125 °C
  - Sizes > 180.0 mm: from -20 °C up to +80 °C
- NBR: from -20 °C up to +80 °C
- FKM: -10 °C to +150 °C  
(Higher temperatures possible in some cases.)

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    | x  | x  |

### Technical data & Ordering information



## Technical data &amp; Ordering information

| NORMACONNECT® FGR Grip E |              |                                               |                                                                                            |                                                                                            |                  |                         |           |           |                     |                          |                           |
|--------------------------|--------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|
| Ø<br>(O.D.)              | Designation  | Clamping<br>ranges                            | PN <sup>1</sup>                                                                            | WP <sup>2</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           |
|                          |              | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) | <br>[bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening torque<br>(Nm) |
| 26.9                     | Grip E 26.9  | 26.4 - 27.5                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.32                | M 8 SW 6                 | 10                        |
| 28.0                     | Grip E 28.0  | 27.5 - 28.5                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.32                | M 8 SW 6                 | 10                        |
| 30.0                     | Grip E 30.0  | 29.5 - 30.6                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 50        | 70        | 0.32                | M 8 SW 6                 | 10                        |
| 33.7                     | Grip E 33.7  | 33.0 - 34.3                                   | 16                                                                                         | 60                                                                                         | 3                | 67                      | 55        | 75        | 0.33                | M 8 SW 6                 | 10                        |
| 35.0                     | Grip E 35.0  | 34.5 - 35.6                                   | 16                                                                                         | 60                                                                                         | 8                | 63                      | 55        | 75        | 0.45                | M 8 SW 6                 | 15                        |
| 38.0                     | Grip E 38.0  | 37.5 - 38.6                                   | 16                                                                                         | 60                                                                                         | 8                | 63                      | 60        | 80        | 0.45                | M 8 SW 6                 | 15                        |
| 42.4                     | Grip E 42.4  | 41.7 - 43.0                                   | 16                                                                                         | 50                                                                                         | 8                | 63                      | 65        | 85        | 0.46                | M 8 SW 6                 | 15                        |
| 44.5                     | Grip E 44.5  | 44.0 - 45.1                                   | 16                                                                                         | 50                                                                                         | 8                | 63                      | 65        | 85        | 0.47                | M 8 SW 6                 | 15                        |
| 48.3                     | Grip E 48.3  | 47.6 - 50.5                                   | 16                                                                                         | 50                                                                                         | 8                | 63                      | 70        | 90        | 0.48                | M 8 SW 6                 | 15                        |
| 54.0                     | Grip E 54.0  | 53.3 - 54.6                                   | 16                                                                                         | 50                                                                                         | 17               | 78                      | 75        | 95        | 0.62                | M 8 SW 6                 | 15                        |
| 57.0                     | Grip E 57.0  | 56.3 - 57.7                                   | 16                                                                                         | 50                                                                                         | 17               | 78                      | 80        | 100       | 0.63                | M 8 SW 6                 | 20                        |
| 60.3                     | Grip E 60.3  | 59.5 - 61.0                                   | 16                                                                                         | 40                                                                                         | 17               | 78                      | 85        | 105       | 0.64                | M 8 SW 6                 | 20                        |
| 70.0                     | Grip E 70.0  | 69.0 - 71.0                                   | 16                                                                                         | 40                                                                                         | 25               | 98                      | 90        | 110       | 1.21                | M 10 SW 8                | 30                        |
| 73.0                     | Grip E 73.0  | 72.1 - 73.8                                   | 16                                                                                         | 40                                                                                         | 25               | 98                      | 95        | 115       | 1.23                | M 10 SW 8                | 30                        |
| 76.1                     | Grip E 76.1  | 75.2 - 77.0                                   | 16                                                                                         | 35                                                                                         | 25               | 98                      | 100       | 120       | 1.23                | M 10 SW 8                | 30                        |
| 80.0                     | Grip E 80.0  | 79.0 - 80.8                                   | 16                                                                                         | 35                                                                                         | 25               | 98                      | 100       | 120       | 1.27                | M 10 SW 8                | 30                        |
| 84.0                     | Grip E 84.0  | 83.0 - 85.0                                   | 16                                                                                         | 35                                                                                         | 25               | 98                      | 105       | 125       | 1.29                | M 10 SW 8                | 30                        |
| 88.9                     | Grip E 88.9  | 87.0 - 89.9                                   | 16                                                                                         | 35                                                                                         | 25               | 98                      | 110       | 130       | 1.31                | M 10 SW 8                | 30                        |
| 101.6                    | Grip E 101.6 | 100.4 - 102.8                                 | 16                                                                                         | 35                                                                                         | 25               | 98                      | 125       | 145       | 1.45                | M 10 SW 8                | 30                        |
| 104.0                    | Grip E 104.0 | 102.8 - 106.1                                 | 16                                                                                         | 35                                                                                         | 25               | 98                      | 125       | 145       | 1.46                | M 10 SW 8                | 30                        |
| 108.0                    | Grip E 108.0 | 106.8 - 109.2                                 | 16                                                                                         | 35                                                                                         | 25               | 98                      | 130       | 150       | 1.49                | M 10 SW 8                | 30                        |
| 110.0                    | Grip E 110.0 | 108.8 - 111.4                                 | 16                                                                                         | 35                                                                                         | 25               | 98                      | 130       | 150       | 1.54                | M 10 SW 8                | 30                        |
| 114.3                    | Grip E 114.3 | 113.0 - 115.5                                 | 16                                                                                         | 35                                                                                         | 25               | 98                      | 135       | 155       | 1.54                | M 10 SW 8                | 50                        |
| 129.0                    | Grip E 129.0 | 127.6 - 131.1                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 155       | 185       | 2.83                | M 12 SW 10               | 50                        |
| 133.0                    | Grip E 133.0 | 131.5 - 134.4                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 160       | 190       | 2.93                | M 12 SW 10               | 50                        |
| 139.7                    | Grip E 139.7 | 138.1 - 141.6                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 165       | 195       | 3.04                | M 12 SW 10               | 50                        |
| 141.3                    | Grip E 141.3 | 139.6 - 142.8                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 170       | 200       | 3.04                | M 12 SW 10               | 50                        |
| 154.0                    | Grip E 154.0 | 152.3 - 156.1                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 180       | 210       | 3.17                | M 12 SW 10               | 60                        |
| 159.0                    | Grip E 159.0 | 157.3 - 160.7                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 185       | 215       | 3.28                | M 12 SW 10               | 60                        |
| 168.3                    | Grip E 168.3 | 166.5 - 170.1                                 | 16                                                                                         | 32                                                                                         | 35               | 115                     | 195       | 225       | 3.35                | M 12 SW 10               | 60                        |
| 193.7                    | Grip E 193.7 | 192.0 - 196.0                                 | 10,0                                                                                       | 20,0                                                                                       | 35               | 141                     | 225       | 255       | 6,2                 | M 16 SW 14               | 100                       |
| 206.0                    | Grip E 206.0 | 202.0 - 208.0                                 | 10,0                                                                                       | 20,0                                                                                       | 35               | 141                     | 240       | 270       | 6,5                 | M 16 SW 14               | 100                       |
| 219.1                    | Grip E 219.1 | 216.0 - 221.0                                 | 10,0                                                                                       | 20,0                                                                                       | 35               | 141                     | 250       | 280       | 6,7                 | M 16 SW 14               | 100                       |
| 225.0                    | Grip E 225.0 | 222.0 - 227.0                                 | 10,0                                                                                       | 16,0                                                                                       | 35               | 140                     | 255       | 285       | 6,2                 | M 16 SW 14               | 100                       |
| 229.9                    | Grip E 229.9 | 228.0 - 232.0                                 | 5,5                                                                                        | 16,0                                                                                       | 35               | 140                     | 260       | 290       | 6,3                 | M 16 SW 14               | 100                       |
| 244.5                    | Grip E 244.5 | 242.0 - 247.0                                 | 5,5                                                                                        | 15,0                                                                                       | 35               | 140                     | 275       | 305       | 6,5                 | M 16 SW 14               | 100                       |
| 254.0                    | Grip E 254.0 | 250.0 - 256.0                                 | 5,5                                                                                        | 14,0                                                                                       | 35               | 140                     | 285       | 315       | 6,6                 | M 16 SW 14               | 100                       |
| 267.0                    | Grip E 267.0 | 264.0 - 269.0                                 | 5,5                                                                                        | 13,5                                                                                       | 35               | 140                     | 300       | 330       | 6,8                 | M 16 SW 14               | 100                       |
| 273.0                    | Grip E 273.0 | 270.0 - 275.0                                 | 5,5                                                                                        | 13,0                                                                                       | 35               | 140                     | 305       | 335       | 6,9                 | M 16 SW 14               | 100                       |
| 306.0                    | Grip E 306.0 | 302.0 - 308.0                                 | 5,5                                                                                        | 10,5                                                                                       | 35               | 140                     | 340       | 370       | 7,4                 | M 16 SW 14               | 120                       |
| 323.9                    | Grip E 323.9 | 320.0 - 327.0                                 | 3,0                                                                                        | 9,5                                                                                        | 35               | 140                     | 355       | 385       | 7,7                 | M 16 SW 14               | 120                       |
| 326.0                    | Grip E 326.0 | 322.0 - 329.0                                 | 3,0                                                                                        | 9,5                                                                                        | 35               | 140                     | 360       | 390       | 7,7                 | M 16 SW 14               | 120                       |
| 355.6                    | Grip E 355.6 | 352.0 - 359.0                                 | 2,7                                                                                        | 8,5                                                                                        | 35               | 140                     | 390       | 420       | 8,2                 | M 16 SW 14               | 120                       |
| 406.4                    | Grip E 406.4 | 402.0 - 410.0                                 | 2,5                                                                                        | 7,0                                                                                        | 35               | 140                     | 440       | 470       | 8,9                 | M 16 SW 14               | 120                       |
| 429.0                    | Grip E 429.0 | 426.0 - 431.0                                 | 2,5                                                                                        | 6,5                                                                                        | 35               | 140                     | 460       | 490       | 9,3                 | M 16 SW 14               | 120                       |
| 442.0                    | Grip E 442.0 | 439.0 - 444.0                                 | 2,5                                                                                        | 6,5                                                                                        | 35               | 140                     | 475       | 505       | 9,5                 | M 16 SW 14               | 140                       |
| 457.2                    | Grip E 457.2 | 454.0 - 459.0                                 | 2,5                                                                                        | 6,0                                                                                        | 35               | 140                     | 490       | 520       | 9,7                 | M 16 SW 14               | 140                       |
| 508.0                    | Grip E 508.0 | 505.0 - 510.0                                 | 2,0                                                                                        | 4,0                                                                                        | 35               | 140                     | 540       | 570       | 10,5                | M 16 SW 14               | 140                       |
| 531.0                    | Grip E 531.0 | 528.0 - 534.0                                 | 1,5                                                                                        | 4,0                                                                                        | 35               | 140                     | 565       | 595       | 10,8                | M 16 SW 14               | 140                       |
| 558.8                    | Grip E 558.8 | 556.0 - 562.0                                 | 1,5                                                                                        | 3,5                                                                                        | 35               | 140                     | 590       | 620       | 11,3                | M 16 SW 14               | 140                       |
| 609.6                    | Grip E 609.6 | 606.0 - 613.0                                 | 1,0                                                                                        | 2,0                                                                                        | 35               | 140                     | 640       | 670       | 12,0                | M 16 SW 14               | 140                       |

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.

## Technical data &amp; Ordering information

| NORMACONNECT® FGR Grip E |              |                   |               |                   |               |                   |               |               |
|--------------------------|--------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|---------------|
| Ø<br>(O.D.)              | Designation  | W2<br>Product No. |               | W4<br>Product No. |               | W5<br>Product No. |               |               |
|                          |              | EPDM              | NBR           | EPDM              | NBR           | EPDM              | NBR           | FKM           |
| 26.9                     | Grip E 26.9  | 0579 9100 026     | 0579 8400 026 | 0579 9200 026     | 0579 8500 026 | 0579 9300 026     | 0579 8600 026 |               |
| 28.0                     | Grip E 28.0  | 0579 9100 028     | 0579 8400 028 | 0579 9200 028     | 0579 8500 028 | 0579 9300 028     | 0579 8600 028 |               |
| 30.0                     | Grip E 30.0  | 0579 9100 030     | 0579 8400 030 | 0579 9200 030     | 0579 8500 030 | 0579 9300 030     | 0579 8600 030 |               |
| 33.7                     | Grip E 33.7  | 0579 9100 033     | 0579 8400 033 | 0579 9200 033     | 0579 8500 033 | 0579 9300 033     | 0579 8600 033 | 0579 9900 033 |
| 35.0                     | Grip E 35.0  | 0579 9100 035     | 0579 8400 035 | 0579 9200 035     | 0579 8500 035 | 0579 9300 035     | 0579 8600 035 |               |
| 38.0                     | Grip E 38.0  | 0579 9100 038     | 0579 8400 038 | 0579 9200 038     | 0579 8500 038 | 0579 9300 038     | 0579 8600 038 | 0579 9900 038 |
| 42.4                     | Grip E 42.4  | 0579 9100 042     | 0579 8400 042 | 0579 9200 042     | 0579 8500 042 | 0579 9300 042     | 0579 8600 042 | 0579 9900 042 |
| 44.5                     | Grip E 44.5  | 0579 9100 044     | 0579 8400 044 | 0579 9200 044     | 0579 8500 044 | 0579 9300 044     | 0579 8600 044 |               |
| 48.3                     | Grip E 48.3  | 0579 9100 048     | 0579 8400 048 | 0579 9200 048     | 0579 8500 048 | 0579 9300 048     | 0579 8600 048 | 0579 9900 048 |
| 54.0                     | Grip E 54.0  | 0579 9100 054     | 0579 8400 054 | 0579 9200 054     | 0579 8500 054 | 0579 9300 054     | 0579 8600 054 |               |
| 57.0                     | Grip E 57.0  | 0579 9100 057     | 0579 8400 057 | 0579 9200 057     | 0579 8500 057 | 0579 9300 057     | 0579 8600 057 | 0579 9900 057 |
| 60.3                     | Grip E 60.3  | 0579 9100 060     | 0579 8400 060 | 0579 9200 060     | 0579 8500 060 | 0579 9300 060     | 0579 8600 060 | 0579 9900 060 |
| 63.0                     | Grip E 63.0  | 0579 9100 063     | 0579 8400 063 | 0579 9200 063     | 0579 8500 063 | 0579 9300 063     | 0579 8600 063 | 0579 9900 063 |
| 70.0                     | Grip E 70.0  | 0579 9100 070     | 0579 8400 070 | 0579 9200 070     | 0579 8500 070 | 0579 9300 070     | 0579 8600 070 |               |
| 73.0                     | Grip E 73.0  | 0579 9100 073     | 0579 8400 073 | 0579 9200 073     | 0579 8500 073 | 0579 9300 073     | 0579 8600 073 |               |
| 76.1                     | Grip E 76.1  | 0579 9100 076     | 0579 8400 076 | 0579 9200 076     | 0579 8500 076 | 0579 9300 076     | 0579 8600 076 | 0579 9900 076 |
| 80.0                     | Grip E 80.0  | 0579 9100 080     | 0579 8400 080 | 0579 9200 080     | 0579 8500 080 | 0579 9300 080     | 0579 8600 080 |               |
| 84.0                     | Grip E 84.0  | 0579 9100 084     | 0579 8400 084 | 0579 9200 084     | 0579 8500 084 | 0579 9300 084     | 0579 8600 084 |               |
| 88.9                     | Grip E 88.9  | 0579 9100 088     | 0579 8400 088 | 0579 9200 088     | 0579 8500 088 | 0579 9300 088     | 0579 8600 088 | 0579 9900 088 |
| 101.6                    | Grip E 101.6 | 0579 9100 101     | 0579 8400 101 | 0579 9200 101     | 0579 8500 101 | 0579 9300 101     | 0579 8600 101 |               |
| 104.0                    | Grip E 104.0 | 0579 9100 104     | 0579 8400 104 | 0579 9200 104     | 0579 8500 104 | 0579 9300 104     | 0579 8600 104 |               |
| 108.0                    | Grip E 108.0 | 0579 9100 108     | 0579 8400 108 | 0579 9200 108     | 0579 8500 108 | 0579 9300 108     | 0579 8600 108 |               |
| 110.0                    | Grip E 110.0 | 0579 9100 110     | 0579 8400 110 | 0579 9200 110     | 0579 8500 110 | 0579 9300 110     | 0579 8600 110 |               |
| 114.3                    | Grip E 114.3 | 0579 9100 114     | 0579 8400 114 | 0579 9200 114     | 0579 8500 114 | 0579 9300 114     | 0579 8600 114 | 0579 9900 114 |
| 129.0                    | Grip E 129.0 | 0579 9100 129     | 0579 8400 129 | 0579 9200 129     | 0579 8500 129 | 0579 9300 129     | 0579 8600 129 | 0579 9900 129 |
| 133.0                    | Grip E 133.0 | 0579 9100 133     | 0579 8400 133 | 0579 9200 133     | 0579 8500 133 | 0579 9300 133     | 0579 8600 133 |               |
| 139.7                    | Grip E 139.7 | 0579 9100 139     | 0579 8400 139 | 0579 9200 139     | 0579 8500 139 | 0579 9300 139     | 0579 8600 139 | 0579 9900 139 |
| 141.3                    | Grip E 141.3 | 0579 9100 141     | 0579 8400 141 | 0579 9200 141     | 0579 8500 141 | 0579 9300 141     | 0579 8600 141 |               |
| 154.0                    | Grip E 154.0 | 0579 9100 154     | 0579 8400 154 | 0579 9200 154     | 0579 8500 154 | 0579 9300 154     | 0579 8600 154 |               |
| 159.0                    | Grip E 159.0 | 0579 9100 159     | 0579 8400 159 | 0579 9200 159     | 0579 8500 159 | 0579 9300 159     | 0579 8600 159 |               |
| 168.3                    | Grip E 168.3 | 0579 9100 168     | 0579 8400 168 | 0579 9200 168     | 0579 8500 168 | 0579 9300 168     | 0579 8600 168 | 0579 9900 168 |
| 193.7                    | Grip E 193.7 | 0574 8100 193     | 0574 8400 193 | 0574 8200 193     | 0574 8500 193 | 0574 8300 193     | 0574 8600 193 |               |
| 206.0                    | Grip E 206.0 | 0574 8100 206     | 0574 8400 206 | 0574 8200 206     | 0574 8500 206 | 0574 8300 206     | 0574 8600 206 |               |
| 219.1                    | Grip E 219.1 | 0574 8100 219     | 0574 8400 219 | 0574 8200 219     | 0574 8500 219 | 0574 8300 219     | 0574 8600 219 |               |
| 225.0                    | Grip E 225.0 | 0574 8100 225     | 0574 8400 225 | 0574 8200 225     | 0574 8500 225 | 0574 8300 225     | 0574 8600 225 |               |
| 229.9                    | Grip E 229.9 | 0574 8100 229     | 0574 8400 229 | 0574 8200 229     | 0574 8500 229 | 0574 8300 229     | 0574 8600 229 |               |
| 244.5                    | Grip E 244.5 | 0574 8100 244     | 0574 8400 244 | 0574 8200 244     | 0574 8500 244 | 0574 8300 244     | 0574 8600 244 |               |
| 254.0                    | Grip E 254.0 | 0574 8100 254     | 0574 8400 254 | 0574 8200 254     | 0574 8500 254 | 0574 8300 254     | 0574 8600 254 |               |
| 267.0                    | Grip E 267.0 | 0574 8100 267     | 0574 8400 267 | 0574 8200 267     | 0574 8500 267 | 0574 8300 267     | 0574 8600 267 |               |
| 273.0                    | Grip E 273.0 | 0574 8100 273     | 0574 8400 273 | 0574 8200 273     | 0574 8500 273 | 0574 8300 273     | 0574 8600 273 |               |
| 306.0                    | Grip E 306.0 | 0574 8100 306     | 0574 8400 306 | 0574 8200 306     | 0574 8500 306 | 0574 8300 306     | 0574 8600 306 |               |
| 323.9                    | Grip E 323.9 | 0574 8100 323     | 0574 8400 323 | 0574 8200 323     | 0574 8500 323 | 0574 8300 323     | 0574 8600 323 |               |
| 326.0                    | Grip E 326.0 | 0574 8100 326     | 0574 8400 326 | 0574 8200 326     | 0574 8500 326 | 0574 8300 326     | 0574 8600 326 |               |
| 355.6                    | Grip E 355.6 | 0574 8100 355     | 0574 8400 355 | 0574 8200 355     | 0574 8500 355 | 0574 8300 355     | 0574 8600 355 |               |
| 406.4                    | Grip E 406.4 | 0574 8100 406     | 0574 8400 406 | 0574 8200 406     | 0574 8500 406 | 0574 8300 406     | 0574 8600 406 |               |
| 429.0                    | Grip E 429.0 | 0574 8100 429     | 0574 8400 429 | 0574 8200 429     | 0574 8500 429 | 0574 8300 429     | 0574 8600 429 |               |
| 442.0                    | Grip E 442.0 | 0574 8100 442     | 0574 8400 442 | 0574 8200 442     | 0574 8500 442 | 0574 8300 442     | 0574 8600 442 |               |
| 457.2                    | Grip E 457.2 | 0574 8100 457     | 0574 8400 457 | 0574 8200 457     | 0574 8500 457 | 0574 8300 457     | 0574 8600 457 |               |
| 508.0                    | Grip E 508.0 | 0574 8100 508     | 0574 8400 508 | 0574 8200 508     | 0574 8500 508 | 0574 8300 508     | 0574 8600 508 |               |
| 531.0                    | Grip E 531.0 | 0574 8100 531     | 0574 8400 531 | 0574 8200 531     | 0574 8500 531 | 0574 8300 531     | 0574 8600 531 |               |
| 558.8                    | Grip E 558.8 | 0574 8100 558     | 0574 8400 558 | 0574 8200 558     | 0574 8500 558 | 0574 8300 558     | 0574 8600 558 |               |
| 609.6                    | Grip E 609.6 | 0574 8100 609     | 0574 8400 609 | 0574 8200 609     | 0574 8500 609 | 0574 8300 609     | 0574 8600 609 |               |



NORMACONNECT® FGR Grip axial restraint pipe couplings are used to connect metal pipes.

### Material

W2, W4, W5

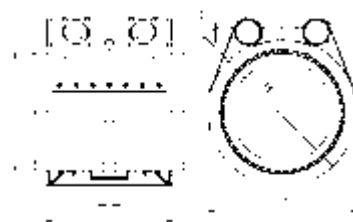
| NORMACONNECT® FGR Grip |             |                                            |                                                                                            |                                                                                            |                  |                         |           |           |                     |                          |                           |
|------------------------|-------------|--------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|---------------------------|
| Ø<br>(O.D.)            | Designation | Clamping ranges                            | PN <sup>1</sup>                                                                            | WP <sup>2</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                           |
|                        |             | Od <sub>min</sub> - Od <sub>max</sub> (mm) | <br>[bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening torque<br>(Nm) |
| 193.7                  | Grip 193.7  | 192.0 - 196.0                              | 16                                                                                         | 32                                                                                         | 35               | 142                     | 225       | 255       | 6.8                 | M 16 SW 14               | 150                       |
| 206.0                  | Grip 206.0  | 202.0 - 208.0                              | 16                                                                                         | 32                                                                                         | 35               | 142                     | 240       | 270       | 7.0                 | M 16 SW 14               | 150                       |
| 219.1                  | Grip 219.1  | 216.0 - 221.0                              | 16                                                                                         | 32                                                                                         | 35               | 142                     | 250       | 280       | 7.3                 | M 16 SW 14               | 150                       |
| 225.0                  | Grip 225.0  | 222.0 - 227.0                              | 13                                                                                         | 26.5                                                                                       | 35               | 142                     | 255       | 285       | 7.4                 | M 16 SW 14               | 180                       |
| 229.9                  | Grip 229.9  | 228.0 - 232.0                              | 13                                                                                         | 26                                                                                         | 35               | 142                     | 260       | 290       | 7.5                 | M 16 SW 14               | 180                       |
| 244.5                  | Grip 244.5  | 242.0 - 247.0                              | 12                                                                                         | 24.5                                                                                       | 35               | 142                     | 275       | 305       | 7.7                 | M 16 SW 14               | 180                       |
| 254.0                  | Grip 254.0  | 250.0 - 256.0                              | 11.5                                                                                       | 22.5                                                                                       | 35               | 142                     | 285       | 315       | 7.9                 | M 16 SW 14               | 180                       |
| 267.0                  | Grip 267.0  | 264.0 - 269.0                              | 11                                                                                         | 22.5                                                                                       | 35               | 142                     | 300       | 330       | 8.2                 | M 16 SW 14               | 180                       |
| 273.0                  | Grip 273.0  | 270.0 - 275.0                              | 11                                                                                         | 22                                                                                         | 35               | 142                     | 305       | 335       | 8.3                 | M 16 SW 14               | 180                       |
| 306.0                  | Grip 306.0  | 302.0 - 308.0                              | 9.5                                                                                        | 19.5                                                                                       | 35               | 142                     | 340       | 370       | 8.9                 | M 16 SW 14               | 180                       |
| 323.9                  | Grip 323.9  | 320.0 - 327.0                              | 6.5                                                                                        | 13                                                                                         | 35               | 142                     | 355       | 385       | 9.2                 | M 16 SW 14               | 180                       |
| 326.0                  | Grip 326.0  | 322.0 - 329.0                              | 6.5                                                                                        | 13                                                                                         | 35               | 142                     | 360       | 390       | 9.3                 | M 16 SW 14               | 180                       |
| 355.6                  | Grip 355.6  | 352.0 - 359.0                              | 6                                                                                          | 12                                                                                         | 35               | 142                     | 390       | 420       | 9.8                 | M 16 SW 14               | 180                       |
| 406.4                  | Grip 406.4  | 402.0 - 410.0                              | 4.5                                                                                        | 9                                                                                          | 35               | 142                     | 440       | 470       | 10.8                | M 16 SW 14               | 180                       |
| 429.0                  | Grip 429.0  | 426.0 - 431.0                              | 4                                                                                          | 8.5                                                                                        | 35               | 142                     | 460       | 490       | 11.3                | M 16 SW 14               | 180                       |
| 442.0                  | Grip 442.0  | 439.0 - 444.0                              | 4                                                                                          | 8                                                                                          | 35               | 142                     | 475       | 505       | 11.5                | M 16 SW 14               | 180                       |
| 457.2                  | Grip 457.2  | 454.0 - 459.0                              | 4                                                                                          | 8                                                                                          | 35               | 142                     | 490       | 520       | 11.8                | M 16 SW 14               | 180                       |
| 508.0                  | Grip 508.0  | 505.0 - 510.0                              | 2.5                                                                                        | 5                                                                                          | 35               | 142                     | 540       | 570       | 12.7                | M 16 SW 14               | 180                       |
| 531.0                  | Grip 531.0  | 528.0 - 534.0                              | 2.5                                                                                        | 5                                                                                          | 35               | 142                     | 565       | 595       | 13.2                | M 16 SW 14               | 180                       |
| 558.8                  | Grip 558.8  | 556.0 - 562.0                              | 2                                                                                          | 4.5                                                                                        | 35               | 142                     | 590       | 620       | 13.7                | M 16 SW 14               | 180                       |
| 609.6                  | Grip 609.6  | 606.0 - 613.0                              | 1.5                                                                                        | 3                                                                                          | 35               | 142                     | 640       | 670       | 14.7                | M 16 SW 14               | 180                       |
| 634.0                  | Grip 634.0  | 631.0 - 637.0                              | 1.5                                                                                        | 3                                                                                          | 35               | 142                     | 665       | 695       | 15.1                | M 16 SW 14               | 200                       |
| 711.2                  | Grip 711.2  | 707.0 - 715.0                              | 1.5                                                                                        | 2.5                                                                                        | 35               | 142                     | 745       | 775       | 16.6                | M 16 Sw 14               | 200                       |

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

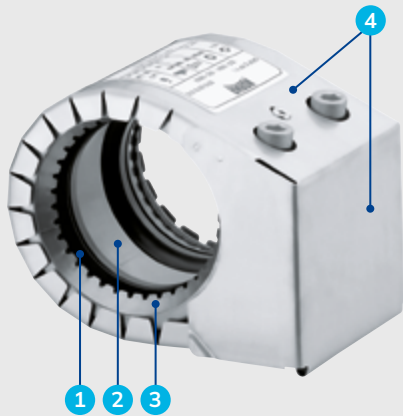
WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.



## Technical data &amp; Ordering information



| NORMACONNECT® FGR Grip |             |                   |               |                   |               |                   |               |
|------------------------|-------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| Ø<br>(O.D.)            | Designation | W2<br>Product No. |               | W4<br>Product No. |               | W5<br>Product No. |               |
|                        |             | EPDM              | NBR           | EPDM              | NBR           | EPDM              | NBR           |
| 193.7                  | Grip 193.7  | 0577 8100 193     | 0577 8400 193 | 0577 8200 193     | 0577 8500 193 | 0577 8300 193     | 0577 8600 193 |
| 206.0                  | Grip 206.0  | 0577 8100 206     | 0577 8400 206 | 0577 8200 206     | 0577 8500 206 | 0577 8300 206     | 0577 8600 206 |
| 219.1                  | Grip 219.1  | 0577 8100 219     | 0577 8400 219 | 0577 8200 219     | 0577 8500 219 | 0577 8300 219     | 0577 8600 219 |
| 225.0                  | Grip 225.0  | 0577 8100 225     | 0577 8400 225 | 0577 8200 225     | 0577 8500 225 | 0577 8300 225     | 0577 8600 225 |
| 229.9                  | Grip 229.9  | 0577 8100 229     | 0577 8400 229 | 0577 8200 229     | 0577 8500 229 | 0577 8300 229     | 0577 8600 229 |
| 244.5                  | Grip 244.5  | 0577 8100 244     | 0577 8400 244 | 0577 8200 244     | 0577 8500 244 | 0577 8300 244     | 0577 8600 244 |
| 254.0                  | Grip 254.0  | 0577 8100 254     | 0577 8400 254 | 0577 8200 254     | 0577 8500 254 | 0577 8300 254     | 0577 8600 254 |
| 267.0                  | Grip 267.0  | 0577 8100 267     | 0577 8400 267 | 0577 8200 267     | 0577 8500 267 | 0577 8300 267     | 0577 8600 267 |
| 273.0                  | Grip 273.0  | 0577 8100 273     | 0577 8400 273 | 0577 8200 273     | 0577 8500 273 | 0577 8300 273     | 0577 8600 273 |
| 306.0                  | Grip 306.0  | 0577 8100 306     | 0577 8400 306 | 0577 8200 306     | 0577 8500 306 | 0577 8300 306     | 0577 8600 306 |
| 323.9                  | Grip 323.9  | 0577 8100 323     | 0577 8400 323 | 0577 8200 323     | 0577 8500 323 | 0577 8300 323     | 0577 8600 323 |
| 326.0                  | Grip 326.0  | 0577 8100 326     | 0577 8400 326 | 0577 8200 326     | 0577 8500 326 | 0577 8300 326     | 0577 8600 326 |
| 355.6                  | Grip 355.6  | 0577 8100 355     | 0577 8400 355 | 0577 8200 355     | 0577 8500 355 | 0577 8300 355     | 0577 8600 355 |
| 406.4                  | Grip 406.4  | 0577 8100 406     | 0577 8400 406 | 0577 8200 406     | 0577 8500 406 | 0577 8300 406     | 0577 8600 406 |
| 429.0                  | Grip 429.0  | 0577 8100 429     | 0577 8400 429 | 0577 8200 429     | 0577 8500 429 | 0577 8300 429     | 0577 8600 429 |
| 442.0                  | Grip 442.0  | 0577 8100 442     | 0577 8400 442 | 0577 8200 442     | 0577 8500 442 | 0577 8300 442     | 0577 8600 442 |
| 457.2                  | Grip 457.2  | 0577 8100 457     | 0577 8400 457 | 0577 8200 457     | 0577 8500 457 | 0577 8300 457     | 0577 8600 457 |
| 508.0                  | Grip 508.0  | 0577 8100 508     | 0577 8400 508 | 0577 8200 508     | 0577 8500 508 | 0577 8300 508     | 0577 8600 508 |
| 531.0                  | Grip 531.0  | 0577 8100 531     | 0577 8400 531 | 0577 8200 531     | 0577 8500 531 | 0577 8300 531     | 0577 8600 531 |
| 558.8                  | Grip 558.8  | 0577 8100 558     | 0577 8400 558 | 0577 8200 558     | 0577 8500 558 | 0577 8300 558     | 0577 8600 558 |
| 609.6                  | Grip 609.6  | 0577 8100 609     | 0577 8400 609 | 0577 8200 609     | 0577 8500 609 | 0577 8300 609     | 0577 8600 609 |
| 634.0                  | Grip 634.0  | 0577 8100 634     | 0577 8400 634 | 0577 8200 634     | 0577 8500 634 | 0577 8300 634     | 0577 8600 634 |
| 711.2                  | Grip 711.2  | 0577 8100 711     | 0577 8400 711 | 0577 8200 711     | 0577 8500 711 | 0577 8300 711     | 0577 8600 711 |



- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Conically stamped anchoring ring
- 4 Flame protection housing

## The flame resistant coupling

NORMACONNECT® FGR Grip E-FP pipe couplings with integrated flame protection are used with applications in the marine sector (civil and military) as well as in sprinkler systems. For this purpose the Grip E type has been equipped with an additional housing made from stainless steel plus a flame-resistant lining which can resist temperatures of 850 °C and upwards.

### Advantages at a glance

- ✓ Dampens absorbing vibrations, pressure surges
- ✓ Weight saving
- ✓ Tension free
- ✓ Ready to install

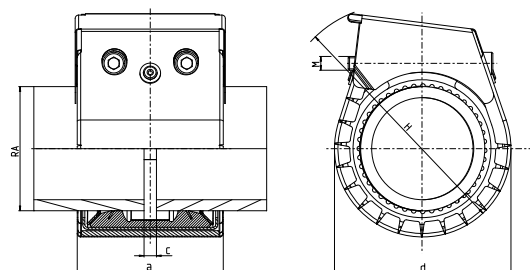
### Information

- Sizes: 26.9 mm – 219.1 mm
- Working pressure: 16.0 – 6.0 bar
- Material: AISI 304, AISI 316 Ti
- EPDM:
  - Sizes from 26.9 mm up to 168.3 mm: -30 °C up to +125 °C
  - Sizes > 180.0 mm: from -20 °C up to +80 °C
- NBR: from -20 °C up to +80 °C

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Technical data & ordering information



## Technical data &amp; Ordering information

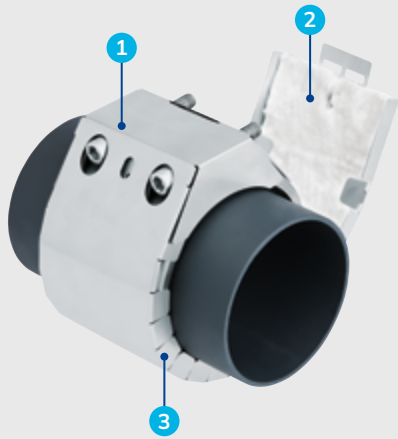
| NORMACONNECT® FGR Grip E-FP |                 |                                               |                                                                                            |                                                                                            |                  |                         |           |           |                     |                          |                              |                   |               |
|-----------------------------|-----------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|------------------------------|-------------------|---------------|
| Ø<br>(O.D.)                 | Designation     | Clamping<br>ranges                            | PN <sup>1</sup><br>(MAWP <sup>1</sup><br>from dia-<br>meter 180)                           | WP <sup>1</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                              | W5<br>Product No. |               |
|                             |                 | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) | <br>[bar] | <br>[bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque<br>(Nm) | EPDM              | NBR           |
| 26.9                        | Grip E-FP 26.9  | 26.4 - 27.5                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 60        | 110       | 0.42                | M 8 SW 6                 | 10                           | 0579 9370 026     | 0579 8670 026 |
| 28.0                        | Grip E-FP 28.0  | 27.5 - 28.5                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 60        | 110       | 0.42                | M 8 SW 6                 | 10                           | 0579 9370 028     | 0579 8670 028 |
| 30.0                        | Grip E-FP 30.0  | 29.5 - 30.6                                   | 16                                                                                         | 70                                                                                         | 3                | 67                      | 60        | 110       | 0.42                | M 8 SW 6                 | 10                           | 0579 9370 030     | 0579 8670 030 |
| 33.7                        | Grip E-FP 33.7  | 33.0 - 34.3                                   | 16                                                                                         | 60                                                                                         | 3                | 67                      | 65        | 115       | 0.43                | M 8 SW 6                 | 10                           | 0579 9370 033     | 0579 8670 033 |
| 35.0                        | Grip E-FP 35.0  | 34.5 - 35.6                                   | 16                                                                                         | 60                                                                                         | 8                | 75                      | 65        | 115       | 0.58                | M 8 SW 6                 | 15                           | 0579 9370 035     | 0579 8670 035 |
| 38.0                        | Grip E-FP 38.0  | 37.5 - 38.6                                   | 16                                                                                         | 60                                                                                         | 8                | 75                      | 70        | 120       | 0.58                | M 8 SW 6                 | 15                           | 0579 9370 038     | 0579 8670 038 |
| 42.4                        | Grip E-FP 42.4  | 41.7 - 43.0                                   | 16                                                                                         | 50                                                                                         | 8                | 75                      | 75        | 125       | 0.59                | M 8 SW 6                 | 15                           | 0579 9370 042     | 0579 8670 042 |
| 44.5                        | Grip E-FP 44.5  | 44.0 - 45.1                                   | 16                                                                                         | 50                                                                                         | 8                | 75                      | 75        | 125       | 0.60                | M 8 SW 6                 | 15                           | 0579 9370 044     | 0579 8670 044 |
| 48.3                        | Grip E-FP 48.3  | 47.6 - 50.5                                   | 16                                                                                         | 50                                                                                         | 8                | 75                      | 80        | 130       | 0.61                | M 8 SW 6                 | 15                           | 0579 9370 048     | 0579 8670 048 |
| 54.0                        | Grip E-FP 54.0  | 53.3 - 54.6                                   | 16                                                                                         | 50                                                                                         | 17               | 90                      | 85        | 135       | 0.92                | M 8 SW 6                 | 15                           | 0579 9370 054     | 0579 8670 054 |
| 57.0                        | Grip E-FP 57.0  | 56.3 - 57.7                                   | 16                                                                                         | 50                                                                                         | 17               | 90                      | 90        | 140       | 0.93                | M 8 SW 6                 | 20                           | 0579 9370 057     | 0579 8670 057 |
| 60.3                        | Grip E-FP 60.3  | 59.5 - 61.0                                   | 16                                                                                         | 40                                                                                         | 17               | 90                      | 95        | 145       | 0.94                | M 8 SW 6                 | 20                           | 0579 9370 060     | 0579 8670 060 |
| 73.0                        | Grip E-FP 73.0  | 72.1 - 73.8                                   | 16                                                                                         | 40                                                                                         | 17               | 90                      | 95        | 145       | 0.94                | M 10 SW 8                | 30                           | 0579 9370 073     | 0579 8670 073 |
| 76.1                        | Grip E-FP 76.1  | 75.2 - 77.0                                   | 16                                                                                         | 35                                                                                         | 25               | 110                     | 105       | 155       | 1.49                | M 10 SW 8                | 30                           | 0579 9370 076     | 0579 8670 076 |
| 84.0                        | Grip E-FP 84.0  | 83.0 - 85.0                                   | 16                                                                                         | 35                                                                                         | 25               | 110                     | 110       | 160       | 1.49                | M 10 SW 8                | 30                           | 0579 9370 084     | 0579 8670 084 |
| 88.9                        | Grip E-FP 88.9  | 87.0 - 89.9                                   | 16                                                                                         | 35                                                                                         | 25               | 110                     | 115       | 165       | 1.56                | M 10 SW 8                | 30                           | 0579 9370 088     | 0579 8670 088 |
| 101.6                       | Grip E-FP 101.6 | 100.4 - 102.8                                 | 16                                                                                         | 35                                                                                         | 25               | 110                     | 120       | 170       | 1.59                | M 10 SW 8                | 30                           | 0579 9370 101     | 0579 8670 101 |
| 104.0                       | Grip E-FP 104.0 | 102.8 - 106.1                                 | 16                                                                                         | 35                                                                                         | 25               | 110                     | 135       | 185       | 1.75                | M 10 SW 8                | 30                           | 0579 9370 104     | 0579 8670 104 |
| 108.0                       | Grip E-FP 108.0 | 106.8 - 109.2                                 | 16                                                                                         | 35                                                                                         | 25               | 110                     | 135       | 185       | 1.76                | M 10 SW 8                | 30                           | 0579 9370 108     | 0579 8670 108 |
| 110.0                       | Grip E-FP 110.0 | 108.8 - 111.4                                 | 16                                                                                         | 35                                                                                         | 25               | 110                     | 140       | 190       | 1.79                | M 10 SW 8                | 30                           | 0579 9370 110     | 0579 8670 110 |
| 114.3                       | Grip E-FP 114.3 | 113.0 - 115.5                                 | 16                                                                                         | 35                                                                                         | 25               | 110                     | 145       | 195       | 1.89                | M 10 SW 8                | 40                           | 0579 9370 114     | 0579 8670 114 |
| 129.0                       | Grip E-FP 129.0 | 127.6 - 131.1                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 165       | 215       | 3.25                | M 12 SW 10               | 50                           | 0579 9370 129     | 0579 8670 129 |
| 133.0                       | Grip E-FP 133.0 | 131.5 - 134.4                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 170       | 220       | 3.36                | M 12 SW 10               | 50                           | 0579 9370 133     | 0579 8670 133 |
| 139.7                       | Grip E-FP 139.7 | 138.1 - 141.6                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 175       | 225       | 3.48                | M 12 SW 10               | 50                           | 0579 9370 139     | 0579 8670 139 |
| 141.3                       | Grip E-FP 141.3 | 139.6 - 142.8                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 180       | 230       | 3.48                | M 12 SW 10               | 50                           | 0579 9370 141     | 0579 8670 141 |
| 154.0                       | Grip E-FP 154.0 | 152.3 - 156.1                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 190       | 240       | 3.63                | M 12 SW 10               | 60                           | 0579 9370 154     | 0579 8670 154 |
| 159.0                       | Grip E-FP 159.0 | 157.3 - 160.7                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 195       | 245       | 3.75                | M 12 SW 10               | 60                           | 0579 9370 159     | 0579 8670 159 |
| 168.3                       | Grip E-FP 168.3 | 166.5 - 170.1                                 | 16                                                                                         | 32                                                                                         | 35               | 125                     | 205       | 255       | 3.83                | M 12 SW 10               | 60                           | 0579 9370 168     | 0579 8670 168 |
| 193.7                       | Grip E-FP 193.7 | 192.0 - 196.0                                 | 10                                                                                         | 20                                                                                         | 35               | 125                     | 235       | 285       | 6.9                 | M 16 SW 14               | 100                          | 0579 9370 193     | 0579 8670 193 |
| 206.0                       | Grip E-FP 206.0 | 202.0 - 208.0                                 | 10                                                                                         | 20                                                                                         | 35               | 125                     | 250       | 300       | 7.2                 | M 16 SW 14               | 100                          | 0579 9370 206     | 0579 8670 206 |
| 219.1                       | Grip E-FP 219.1 | 216.0 - 221.0                                 | 10                                                                                         | 20                                                                                         | 35               | 125                     | 260       | 310       | 7.4                 | M 16 SW 14               | 100                          | 0574 8370 219     | 0574 8670 219 |

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

MAWP<sup>1</sup> (Maximum Allowable Working Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.

Bigger dimensions available on request.



- 1 Metal housing made of AISI 316 Ti
- 2 Environmentally-friendly – No use of chemicals
- 3 Shoulders of the coupling are flame protected



Double-locked safeguards prevent accidental dismantling

## RFP for application at shipbuilding

The NORMACONNECT® FGR RFP is a retrofittable flame protector housing that has been specially designed for use with all NORMACONNECT® FGR Flex and Grip pipe couplings. Its low weight and straightforward design allows quick, easy assembly without any tools. The built-in flame resistant mineral fiber mat provides a premium level of flame protection. The Retrofittable Flame Protector (RFP) housing has been extensively tested and is approved by several international classification societies.

### Advantages at a glance

- ✓ Retrofittable
- ✓ Easy assembly without tooling
- ✓ Low weight
- ✓ Meets current IACS requirements
- ✓ No chemicals in flame protection mat
- ✓ High Flexibility
- ✓ Clear identification whether coupling is flame protected or not
- ✓ Mechanical stress resistant
- ✓ Less warehouse costs

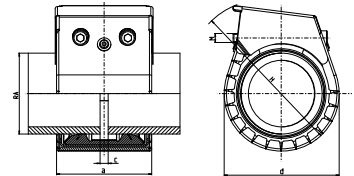
### Information

Sizes from 26.9 mm up to 273.0 mm

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Technical data & Ordering information



| NORMACONNECT® FGR RFP |                  |                      |        |         |                                    |                |
|-----------------------|------------------|----------------------|--------|---------|------------------------------------|----------------|
| Ø (O.D.)              | Designation      | Dimensions (approx.) |        |         | Weight of RFP (approx.) (kg/piece) | W5 Product No. |
|                       |                  | a (mm)               | d (mm) | H* (mm) |                                    |                |
| 26.9                  | FGR RFP W5 26.9  | 69                   | 60     | 110     | 0.09                               | 0573 0000 026  |
| 28.0                  | FGR RFP W5 28.0  | 69                   | 60     | 110     | 0.09                               | 0573 0000 028  |
| 30.0                  | FGR RFP W5 30.0  | 69                   | 60     | 110     | 0.10                               | 0573 0000 030  |
| 33.7                  | FGR RFP W5 33.7  | 69                   | 65     | 115     | 0.10                               | 0573 0000 033  |
| 38.0                  | FGR RFP W5 38.0  | 75                   | 70     | 120     | 0.11                               | 0573 0000 038  |
| 42.4                  | FGR RFP W5 42.4  | 75                   | 75     | 125     | 0.12                               | 0573 0000 042  |
| 44.5                  | FGR RFP W5 44.5  | 75                   | 75     | 125     | 0.12                               | 0573 0000 044  |
| 48.3                  | FGR RFP W5 48.3  | 75                   | 80     | 130     | 0.13                               | 0573 0000 048  |
| 54.0                  | FGR RFP W5 54.0  | 90                   | 90     | 135     | 0.14                               | 0573 0000 054  |
| 57.0                  | FGR RFP W5 57.0  | 90                   | 90     | 140     | 0.16                               | 0573 0000 057  |
| 60.3                  | FGR RFP W5 60.3  | 90                   | 95     | 145     | 0.16                               | 0573 0000 060  |
| 76.1                  | FGR RFP W5 76.1  | 110                  | 110    | 160     | 0.24                               | 0573 0000 076  |
| 88.9                  | FGR RFP W5 88.9  | 110                  | 120    | 170     | 0.26                               | 0573 0000 088  |
| 101.6                 | FGR RFP W5 101.6 | 110                  | 135    | 185     | 0.28                               | 0573 0000 101  |
| 104.0                 | FGR RFP W5 104.0 | 110                  | 135    | 185     | 0.29                               | 0573 0000 104  |
| 108.0                 | FGR RFP W5 108.0 | 110                  | 140    | 190     | 0.30                               | 0573 0000 108  |
| 114.3                 | FGR RFP W5 114.3 | 110                  | 145    | 195     | 0.31                               | 0573 0000 114  |
| 133.0                 | FGR RFP W5 133.0 | 125                  | 170    | 220     | 0.41                               | 0573 0000 133  |
| 139.7                 | FGR RFP W5 139.7 | 125                  | 175    | 225     | 0.43                               | 0573 0000 139  |
| 154.0                 | FGR RFP W5 154.0 | 125                  | 190    | 240     | 0.45                               | 0573 0000 154  |
| 159.0                 | FGR RFP W5 159.0 | 125                  | 195    | 245     | 0.49                               | 0573 0000 159  |
| 168.3                 | FGR RFP W5 168.3 | 125                  | 205    | 255     | 0.50                               | 0573 0000 168  |
| 219.1                 | FGR RFP W5 219.1 | 155                  | 260    | 310     | 0.73                               | 0573 0000 219  |

\* Dimensions of the housing are given as assembled on a NORMACONNECT® Grip / Grip E / Flex / Flex E pipe coupling. Further sizes available on request.





- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Anchoring ring

## The coupling for plastic pipes

NORMACONNECT® FGR PlastGrip/PlastGrip E axial restraint pipe couplings are used to connect plastic pipes. The specially designed anchoring ring, featuring flat rows of teeth, engages into the pipe surface without damaging the plastic material. The force applied is distributed evenly across the pipe surface. NORMACONNECT® FGR PlastGrip E has hollow trunnions (smaller diameters). NORMACONNECT® FGR PlastGrip has solid trunnions (larger diameters).

### Advantages at a glance

- ✓ Also usable for smooth thermoplastics such as PP and PE.
- ✓ Also available with hollow trunnions for weight-saving

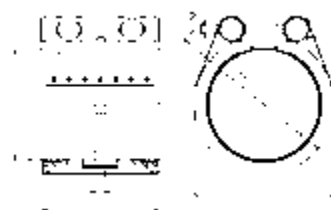
### Information

- Sizes: 40.0 mm – 400.0 mm
- Working pressure: 16.0 – 6.0 bar
- Material: AISI 304, AISI 316 Ti
- EPDM:
  - Sizes from 40.0 mm up to 168.3 mm -30 °C up to +125 °C
  - Sizes > 180.0 mm: -20 °C up to +80 °C
- NBR: -20 °C up to +80 °C

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Technical data & ordering information





NORMACONNECT® FGR PlastGrip/PlastGrip E axial restraint pipe couplings are used to connect plastic pipes.

### Main advantage

- PlastGrip E has hollow trunnions and is weight-saving (available for smaller diameters)
- PlastGrip has solid trunnions (available for larger diameters)

### Material

W5

## Technical data & Ordering information

| NORMACONNECT® FGR PlastGrip E |                    |                                               |                                                                                         |                                                                                         |                  |                         |           |           |                     |                          |                              |                   |               |
|-------------------------------|--------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|------------------------------|-------------------|---------------|
| Ø<br>(O.D.)                   | Designation        | Clamping<br>ranges                            | PN <sup>1</sup>                                                                         | WP <sup>2</sup>                                                                         | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                              | W5<br>Product No. |               |
|                               |                    | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) |  [bar] |  [bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque<br>(Nm) | EPDM              | NBR           |
| 40.0                          | PlastGrip E W5 40  | 39.0 - 40.5                                   | 10                                                                                      | 16                                                                                      | 8                | 62                      | 60        | 80        | 0.48                | M 8 SW 6                 | 15                           | 0581 9360 040     | 0581 8660 040 |
| 50.0                          | PlastGrip E W5 50  | 49.0 - 50.5                                   | 10                                                                                      | 16                                                                                      | 8                | 62                      | 70        | 90        | 0.52                | M 8 SW 6                 | 15                           | 0581 9360 050     | 0581 8660 050 |
| 63.0                          | PlastGrip E W5 63  | 62.0 - 63.5                                   | 10                                                                                      | 16                                                                                      | 17               | 78                      | 85        | 105       | 0.67                | M 8 SW 6                 | 20                           | 0581 9360 063     | 0581 8660 063 |
| 75.0                          | PlastGrip E W5 75  | 74.0 - 76.0                                   | 10                                                                                      | 16                                                                                      | 25               | 98                      | 100       | 120       | 1.33                | M 10 SW 8                | 30                           | 0581 9360 075     | 0581 8660 075 |
| 90.0                          | PlastGrip E W5 90  | 89.0 - 91.0                                   | 10                                                                                      | 16                                                                                      | 25               | 98                      | 110       | 130       | 1.42                | M 10 SW 8                | 30                           | 0581 9360 090     | 0581 8660 090 |
| 110.0                         | PlastGrip E W5 110 | 109.0 - 111.0                                 | 10                                                                                      | 16                                                                                      | 25               | 98                      | 130       | 150       | 1.66                | M 10 SW 8                | 30                           | 0581 9360 110     | 0581 8660 110 |
| 125.0                         | PlastGrip E W5 125 | 124.0 - 126.0                                 | 10                                                                                      | 16                                                                                      | 35               | 115                     | 140       | 160       | 1.42                | M 12 SW 10               | 40                           | 0581 9360 125     | 0581 8660 125 |
| 140.0                         | PlastGrip E W5 140 | 139.0 - 141.0                                 | 10                                                                                      | 16                                                                                      | 35               | 115                     | 160       | 180       | 1.18                | M 12 SW 10               | 50                           | 0581 9360 140     | 0581 8660 140 |
| 154.0                         | PlastGrip E W5 154 | 152.3 - 156.1                                 | 10                                                                                      | 16                                                                                      | 35               | 115                     | 170       | 190       | 1.27                | M 12 SW 10               | 50                           | 0581 9360 154     | 0581 8660 154 |
| 160.0                         | PlastGrip E W5 160 | 159.0 - 162.0                                 | 10                                                                                      | 16                                                                                      | 35               | 115                     | 180       | 200       | 1.45                | M 12 SW 10               | 60                           | 0581 9360 160     | 0581 8660 160 |

| NORMACONNECT® FGR PlastGrip |                  |                                               |                                                                                           |                                                                                           |                  |                         |           |           |                     |                          |                              |                   |               |
|-----------------------------|------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------|-------------------------|-----------|-----------|---------------------|--------------------------|------------------------------|-------------------|---------------|
| Ø<br>(O.D.)                 | Designation      | Clamping<br>ranges                            | PN <sup>1</sup>                                                                           | WP <sup>2</sup>                                                                           | C <sub>max</sub> | Dimensions<br>(approx.) |           |           | Weight<br>(approx.) | Hex socket locking bolts |                              | W5<br>Product No. |               |
|                             |                  | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) |  [bar] |  [bar] | (mm)             | a<br>(mm)               | d<br>(mm) | H<br>(mm) | (kg/pc.)            | Thread                   | Tightening<br>torque<br>(Nm) | EPDM              | NBR           |
| 180.0                       | PlastGrip W5 180 | 178.0 - 182.0                                 | -                                                                                         | 16                                                                                        | 35               | 142                     | 210       | 240       | 7.6                 | M 12 SW 10               | 60                           | 0581 8350 180     | 0581 8650 180 |
| 200.0                       | PlastGrip W5 200 | 198.0 - 202.0                                 | -                                                                                         | 16                                                                                        | 35               | 142                     | 230       | 260       | 8.1                 | M 12 SW 10               | 60                           | 0581 8350 200     | 0581 8650 200 |
| 225.0                       | PlastGrip W5 225 | 222.0 - 227.0                                 | -                                                                                         | 10                                                                                        | 35               | 142                     | 255       | 285       | 8.7                 | M 12 SW 10               | 60                           | 0581 8350 225     | 0581 8650 225 |
| 250.0                       | PlastGrip W5 250 | 247.0 - 253.0                                 | -                                                                                         | 10                                                                                        | 35               | 142                     | 280       | 310       | 9.4                 | M 12 SW 10               | 80                           | 0581 8350 250     | 0581 8650 250 |
| 280.0                       | PlastGrip W5 280 | 277.0 - 283.0                                 | -                                                                                         | 10                                                                                        | 35               | 142                     | 310       | 340       | 10.1                | M 16 SW 14               | 100                          | 0581 8350 280     | 0581 8650 280 |
| 315.0                       | PlastGrip W5 315 | 311.0 - 318.0                                 | -                                                                                         | 10                                                                                        | 35               | 142                     | 345       | 375       | 11                  | M 16 SW 14               | 100                          | 0581 8350 315     | 0581 8650 315 |
| 355.0                       | PlastGrip W5 355 | 352.0 - 359.0                                 | -                                                                                         | 6                                                                                         | 35               | 142                     | 385       | 415       | 12                  | M 16 SW 14               | 120                          | 0581 8350 355     | 0581 8650 355 |
| 400.0                       | PlastGrip W5 400 | 396.0 - 404.0                                 | -                                                                                         | 6                                                                                         | 35               | 142                     | 430       | 460       | 13.1                | M 16 SW 14               | 120                          | 0581 8350 400     | 0581 8650 400 |

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.



- 1 Double-lip sealing system
- 2 Standard strip insert
- 3 Anchoring ring

## The combining pipe coupling

NORMACONNECT® FGR CombiGrip/CombiGrip E axial restraint pipe couplings are used to connect plastic pipes with metal pipes.

On the side connecting the plastic pipe, the coupling has a special anchoring ring with rows of flat teeth which are pressed into the pipe surface without damaging the material. At the same time the force applied is distributed evenly across the pipe surface.

On the side connecting the metal pipe, the coupling has a different anchoring ring with conically stamped teeth which Grip into the pipe surface. Due to the special design of the anchoring ring the coupling can withstand even high vibration loads. NORMACONNECT® FGR CombiGrip E has hollow trunnions (smaller diameters). NORMACONNECT® FGR CombiGrip has solid trunnions (larger diameters).

### Advantages at a glance

- ✓ Corrosion resistant
- ✓ No welding
- ✓ No special tools necessary
- ✓ Installation and working in every kind of weather (hot and cold)
- ✓ Reusable

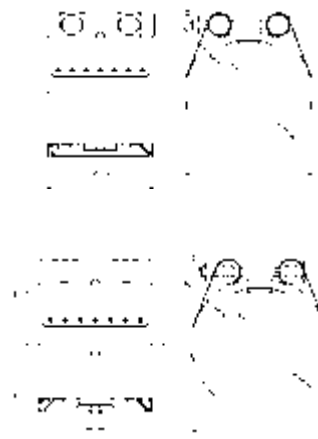
### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Information

- Sizes: from 38.0/40.0 mm to 400.0/406.0 mm
- Working pressure: 16.0 – 6.0 bar
- Material: AISI 304, AISI 316 Ti
- EPDM:
  - Sizes from 38.0 mm up to 160.0 mm: -30 °C up to +125 °C
  - Sizes > 200.0 mm: -20 °C up to +80 °C
- NBR: from -20 °C up to +80 °C

### Technical data & Ordering information





NORMACONNECT® FGR CombiGrip/CombiGrip E axial restraint pipe couplings are used to connect plastic pipes with metal pipes.

### Advantages at a glance

- CombiGrip E has hollow trunnions (smaller diameters)
- CombiGrip has solid trunnions (larger diameters)

### Material

W5

## Technical data & Ordering information

| NORMACONNECT® FGR CombiGrip E |                           |                                                               |             |                                                                                                               |                                                                                                               |                          |                         |           |           |                                 |                             |                                   |                   |               |
|-------------------------------|---------------------------|---------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|-----------|-----------|---------------------------------|-----------------------------|-----------------------------------|-------------------|---------------|
| Ø<br>(O.D.)                   | Designation               | Clamping ranges<br>Od <sub>min</sub> - Od <sub>max</sub> (mm) |             | PN <sup>1</sup><br><br>[bar] | WP <sup>2</sup><br><br>[bar] | C <sub>max</sub><br>(mm) | Dimensions<br>(approx.) |           |           | Weight<br>(approx.)<br>(kg/pc.) | Hex socket<br>locking bolts |                                   | W5<br>Product No. |               |
|                               |                           | Plastic                                                       | Metal       |                                                                                                               |                                                                                                               |                          | a<br>(mm)               | d<br>(mm) | H<br>(mm) |                                 | Thread                      | Tight-<br>ening<br>torque<br>(Nm) | EPDM              | NBR           |
| 38.0 / 40.0                   | CombiGrip E 38.0 / 40.0   | 39.0-40.5                                                     | 37.5-38.6   | 10                                                                                                            | 16                                                                                                            | 8                        | 62                      | 60        | 80        | 0.46                            | M 8 SW 6                    | 15                                | 0584 9360 038     | 0584 8660 038 |
| 40.0 / 42.4                   | CombiGrip E 40.0 / 42.4   | 39.0-40.5                                                     | 41.7-43.0   | 10                                                                                                            | 16                                                                                                            | 8                        | 62                      | 65        | 85        | 0.47                            | M 8 SW 6                    | 15                                | 0584 9360 042     | 0584 8660 042 |
| 50.0 / 48.3                   | CombiGrip E 50.0 / 48.3   | 47.6-51.0                                                     | 47.6-50.5   | 10                                                                                                            | 16                                                                                                            | 8                        | 62                      | 70        | 90        | 0.5                             | M 8 SW 6                    | 15                                | 0584 9360 048     | 0584 8660 048 |
| 56.0 / 54.0*                  | CombiGrip E 56.0 / 54.0   | 55.0-56.5                                                     | 53.3-54.6   | -                                                                                                             | 5*                                                                                                            | 17                       | 78                      | 80        | 100       | 0.62                            | M 8 SW 6                    | 15                                | 0584 9360 054     | 0584 8660 054 |
| 63.0 / 60.3                   | CombiGrip E 63.0 / 60.3   | 62.0-63.5                                                     | 59.5-61.0   | 10                                                                                                            | 16                                                                                                            | 17                       | 78                      | 85        | 105       | 0.65                            | M 8 SW 6                    | 20                                | 0584 9360 060     | 0584 8660 060 |
| 75.0 / 76.1                   | CombiGrip E 75.0 / 76.1   | 74.0-76.0                                                     | 75.2-77.0   | 10                                                                                                            | 16                                                                                                            | 25                       | 98                      | 100       | 120       | 1.3                             | M 10 SW 8                   | 30                                | 0584 9360 076     | 0584 8660 076 |
| 90.0 / 88.9                   | CombiGrip E 90.0 / 88.9   | 89.0-91.0                                                     | 87.0-89.9   | 10                                                                                                            | 16                                                                                                            | 25                       | 98                      | 110       | 130       | 1.39                            | M 10 SW 8                   | 30                                | 0584 9360 088     | 0584 8660 088 |
| 110.0 / 108.0                 | CombiGrip E 110.0 / 108.0 | 109.0-111.0                                                   | 106.8-109.2 | 10                                                                                                            | 16                                                                                                            | 25                       | 98                      | 130       | 150       | 1.58                            | M 10 SW 8                   | 40                                | 0584 9360 108     | 0584 8660 108 |
| 110.0 / 114.3                 | CombiGrip E 110.0 / 114.3 | 109.0-111.0                                                   | 113.0-115.5 | 10                                                                                                            | 16                                                                                                            | 25                       | 98                      | 135       | 155       | 1.62                            | M 10 SW 8                   | 40                                | 0584 9360 110     | 0584 8660 110 |
| 140.0 / 139.7                 | CombiGrip E 140.0 / 139.7 | 139.0-141.0                                                   | 138.1-141.6 | 10                                                                                                            | 16                                                                                                            | 35                       | 115                     | 160       | 180       | 3.14                            | M 12 SW 10                  | 50                                | 0584 9360 139     | 0584 8660 139 |
| 160.0 / 159.0                 | CombiGrip E 159.0 / 160.0 | 159.0-162.0                                                   | 157.3-160.7 | 10                                                                                                            | 16                                                                                                            | 35                       | 115                     | 180       | 200       | 3.45                            | M 12 SW 10                  | 60                                | 0584 9360 159     | 0584 8660 159 |

| NORMACONNECT® FGR CombiGrip |                         |                                                               |             |                                                                                                                 |                                                                                                                 |                          |                         |           |           |                                 |                             |                                   |                   |               |
|-----------------------------|-------------------------|---------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|-----------|-----------|---------------------------------|-----------------------------|-----------------------------------|-------------------|---------------|
| Ø<br>(O.D.)                 | Designation             | Clamping ranges<br>Od <sub>min</sub> - Od <sub>max</sub> (mm) |             | PN <sup>1</sup><br><br>[bar] | WP <sup>2</sup><br><br>[bar] | C <sub>max</sub><br>(mm) | Dimensions<br>(approx.) |           |           | Weight<br>(approx.)<br>(kg/pc.) | Hex socket<br>locking bolts |                                   | W5<br>Product No. |               |
|                             |                         | Plastic                                                       | Metal       |                                                                                                                 |                                                                                                                 |                          | a<br>(mm)               | d<br>(mm) | H<br>(mm) |                                 | Thread                      | Tight-<br>ening<br>torque<br>(Nm) | EPDM              | NBR           |
| 200.0 / 204.0               | CombiGrip 200.0 / 204.0 | 198.0-202.0                                                   | 202.0-206.0 | -                                                                                                               | 16                                                                                                              | 35                       | 142                     | 235       | 265       | 7.5                             | M 12 SW 10                  | 60                                | 0584 8350 204     | 0584 8650 204 |
| 225.0 / 219.1               | CombiGrip 225.0 / 219.1 | 222.0-227.0                                                   | 216.0-221.0 | -                                                                                                               | 10                                                                                                              | 35                       | 142                     | 255       | 285       | 8.1                             | M 12 SW 10                  | 60                                | 0584 8350 220     | 0584 8650 220 |
| 225.0 / 222.0               | CombiGrip 225.0 / 222.0 | 222.0-227.0                                                   | 220.0-224.0 | -                                                                                                               | 10                                                                                                              | 35                       | 142                     | 255       | 285       | 8.1                             | M 12 SW 10                  | 60                                | 0584 8350 222     | 0584 8650 222 |
| 250.0 / 254.0               | CombiGrip 250.0 / 254.0 | 247.0-253.0                                                   | 250.0-256.0 | -                                                                                                               | 10                                                                                                              | 35                       | 142                     | 285       | 315       | 8.6                             | M 12 SW 10                  | 80                                | 0584 8350 254     | 0584 8650 254 |
| 280.0 / 273.0               | CombiGrip 280.0 / 273.0 | 277.0-283.0                                                   | 270.0-275.0 | -                                                                                                               | 10                                                                                                              | 35                       | 142                     | 310       | 340       | 9.3                             | M 16 SW 14                  | 100                               | 0584 8350 273     | 0584 8650 273 |
| 355.0 / 355.6               | CombiGrip 355.0 / 355.6 | 351.0-359.0                                                   | 352.0-359.0 | -                                                                                                               | 6                                                                                                               | 35                       | 142                     | 390       | 420       | 10.9                            | M 16 SW 14                  | 120                               | 0584 8350 355     | 0584 8650 355 |
| 400.0 / 406.4               | CombiGrip 400.0 / 406.4 | 396.0-404.0                                                   | 402.0-410.0 | -                                                                                                               | 6                                                                                                               | 35                       | 142                     | 440       | 470       | 11.9                            | M 16 SW 14                  | 120                               | 0584 8350 400     | 0584 8650 400 |

PN<sup>1</sup> (Nominal Pressure) is the max. admissible working pressure in shipbuilding, based on a safety factor of  $\geq 4$ .

WP<sup>2</sup> is the max. working pressure in industrial applications, with a safety factor as per NORMA specification.

\* Special coupling for joining metal pipes with PE-HD drainage pipes





Support Sleeve to be used with NORMACONNECT® FGR PlastGrip/PlastGrip E, CombiGrip / CombiGrip E in W5 (316Ti) material.

For copper and CuNiFe pipes an optional Support Sleeve made from brass is available on request.

## Optional Support Sleeve

When joining plastic pipes made from PE and PP a Support Sleeve must be used. If the pipes to be joined are made from soft thermoplastic (e.g., PE) the use of a Support Sleeve is mandatory. The Support Sleeve is inserted into the pipe end within the area to be joined and thus protects the pipe from being deformed.

## Technical data & Ordering information

| Internal Support Sleeve for PlastGrip / PlastGrip E and CombiGrip / CombiGrip E in W5 (316Ti)* |               |       |               |       |               |       |
|------------------------------------------------------------------------------------------------|---------------|-------|---------------|-------|---------------|-------|
| PE                                                                                             | SDR 11        |       | SDR 13.6      |       | SDR 17        |       |
| Ø OD mm                                                                                        | Product No.   | Ø mm  | Product No.   | Ø mm  | Product No.   | Ø mm  |
| 40                                                                                             | 0581 0011 040 | 32.6  | 0581 0013 040 | 34.0  | 0581 0017 040 | 35.2  |
| 50                                                                                             | 0581 0011 050 | 40.8  | 0581 0013 050 | 42.6  | 0581 0017 050 | 44.0  |
| 63                                                                                             | 0581 0011 063 | 51.4  | 0581 0013 063 | 53.6  | 0581 0017 063 | 55.4  |
| 75                                                                                             | 0581 0011 075 | 61.4  | 0581 0013 075 | 63.8  | 0581 0017 075 | 66.0  |
| 90                                                                                             | 0581 0011 090 | 73.6  | 0581 0013 090 | 76.6  | 0581 0017 090 | 79.2  |
| 110                                                                                            | 0581 0011 110 | 90.0  | 0581 0013 110 | 93.8  | 0581 0017 110 | 96.8  |
| 125                                                                                            | 0581 0011 125 | 102.2 | 0581 0013 125 | 106.6 | 0581 0017 125 | 110.2 |
| 140                                                                                            | 0581 0011 140 | 114.6 | 0581 0013 140 | 119.4 | 0581 0017 140 | 123.4 |
| 160                                                                                            | 0581 0011 160 | 130.8 | 0581 0013 160 | 136.4 | 0581 0017 160 | 141.0 |
| 180                                                                                            | 0581 0011 180 | 147.2 | 0581 0013 180 | 153.4 | 0581 0017 180 | 158.6 |
| 200                                                                                            | 0581 0011 200 | 163.6 | 0581 0013 200 | 170.6 | 0581 0017 200 | 176.2 |
| 225                                                                                            | 0581 0011 225 | 184.0 | 0581 0013 225 | 191.8 | 0581 0017 225 | 198.2 |
| 250                                                                                            | 0581 0011 250 | 204.6 | 0581 0013 250 | 213.2 | 0581 0017 250 | 220.4 |
| 280                                                                                            | 0581 0011 280 | 229.2 | 0581 0013 280 | 238.8 | 0581 0017 280 | 246.8 |
| 315                                                                                            | 0581 0011 315 | 257.8 | 0581 0013 315 | 268.6 | 0581 0017 315 | 277.6 |
| 355                                                                                            | 0581 0011 355 | 290.6 | 0581 0013 355 | 302.8 | 0581 0017 355 | 312.8 |
| 400                                                                                            | 0581 0011 400 | 327.4 | 0581 0013 400 | 341.2 | 0581 0017 400 | 352.6 |
| 450                                                                                            | 0581 0011 450 |       | 0581 0013 450 |       | 0581 0017 450 |       |

Table continues on next page

\* Other SDR classes on request.

## Technical data & Ordering information

| Internal Support Sleeve for PlastGrip / PlastGrip E and CombiGrip / CombiGrip E in W5 (316Ti)* |               |       |               |       |
|------------------------------------------------------------------------------------------------|---------------|-------|---------------|-------|
| PE                                                                                             | SDR 17.6      |       | SDR 21        |       |
| Ø OD mm                                                                                        | Product No.   | Ø mm  | Product No.   | Ø mm  |
| 40                                                                                             | 0581 0018 040 | 35.4  | 0581 0021 040 | 36.0  |
| 50                                                                                             | 0581 0018 050 | 44.2  | 0581 0021 050 | 45.2  |
| 63                                                                                             | 0581 0018 063 | 55.8  | 0581 0021 063 | 57.0  |
| 75                                                                                             | 0581 0018 075 | 66.4  | 0581 0021 075 | 67.8  |
| 90                                                                                             | 0581 0018 090 | 79.8  | 0581 0021 090 | 81.4  |
| 110                                                                                            | 0581 0018 110 | 97.4  | 0581 0021 110 | 99.4  |
| 125                                                                                            | 0581 0018 125 | 110.8 | 0581 0021 125 | 113.0 |
| 140                                                                                            | 0581 0018 140 | 124.0 | 0581 0021 140 | 126.6 |
| 160                                                                                            | 0581 0018 160 | 141.8 | 0581 0021 160 | 144.6 |
| 180                                                                                            | 0581 0018 180 | 159.6 | 0581 0021 180 | 162.8 |
| 200                                                                                            | 0581 0018 200 | 177.2 | 0581 0021 200 | 180.8 |
| 225                                                                                            | 0581 0018 225 | 199.4 | 0581 0021 225 | 203.4 |
| 250                                                                                            | 0581 0018 250 | 221.6 | 0581 0021 250 | 226.2 |
| 280                                                                                            | 0581 0018 280 | 248.2 | 0581 0021 280 | 253.2 |
| 315                                                                                            | 0581 0018 315 | 279.2 | 0581 0021 315 | 285.0 |
| 355                                                                                            | 0581 0018 355 | 314.8 | 0581 0021 355 | 321.2 |
| 400                                                                                            | 0581 0018 400 | 354.6 | 0581 0021 400 | 361.8 |
| 450                                                                                            | 0581 0018 450 | 399.0 | 0581 0021 450 | 407.0 |

\* Other SDR classes on request

| Internal Support Sleeve for PlastGrip / PlastGrip E and CombiGrip / CombiGrip E in W5 (316Ti)* |               |       |               |       |               |       |
|------------------------------------------------------------------------------------------------|---------------|-------|---------------|-------|---------------|-------|
| PP                                                                                             | SDR 11        |       | SDR 17        |       | SDR 17.6      |       |
| Ø OD mm                                                                                        | Product No.   | Ø mm  | Product No.   | Ø mm  | Product No.   | Ø mm  |
| 40                                                                                             | 0581 1011 040 | 32.6  | 0581 1017 040 | 35.2  | 0581 1018 040 | 35.4  |
| 50                                                                                             | 0581 1011 050 | 40.8  | 0581 1017 050 | 44.0  | 0581 1018 050 | 44.2  |
| 63                                                                                             | 0581 1011 063 | 51.4  | 0581 1017 063 | 55.4  | 0581 1018 063 | 55.8  |
| 75                                                                                             | 0581 1011 075 | 61.4  | 0581 1017 075 | 66.0  | 0581 1018 075 | 66.4  |
| 90                                                                                             | 0581 1011 090 | 73.6  | 0581 1017 090 | 79.2  | 0581 1018 090 | 79.8  |
| 110                                                                                            | 0581 1011 110 | 90.0  | 0581 1017 110 | 96.8  | 0581 1018 110 | 97.4  |
| 125                                                                                            | 0581 1011 125 | 102.2 | 0581 1017 125 | 110.2 | 0581 1018 125 | 110.8 |
| 140                                                                                            | 0581 1011 140 | 114.6 | 0581 1017 140 | 123.4 | 0581 1018 140 | 124.0 |
| 160                                                                                            | 0581 1011 160 | 130.8 | 0581 1017 160 | 141.0 | 0581 1018 160 | 141.8 |
| 180                                                                                            | 0581 1011 180 | 147.2 | 0581 1017 180 | 158.6 | 0581 1018 180 | 159.6 |
| 200                                                                                            | 0581 1011 200 | 163.6 | 0581 1017 200 | 176.2 | 0581 1018 200 | 177.2 |
| 225                                                                                            | 0581 1011 225 | 184.0 | 0581 1017 225 | 198.2 | 0581 1018 225 | 199.4 |
| 250                                                                                            | 0581 1011 250 | 204.6 | 0581 1017 250 | 220.4 | 0581 1018 250 | 221.6 |
| 280                                                                                            | 0581 1011 280 | 229.2 | 0581 1017 280 | 246.8 | 0581 1018 280 | 248.2 |
| 315                                                                                            | 0581 1011 315 | 257.8 | 0581 1017 315 | 277.6 | 0581 1018 315 | 279.2 |
| 355                                                                                            | 0581 1011 355 | 290.6 | 0581 1017 355 | 312.8 | 0581 1018 355 | 314.8 |
| 400                                                                                            | 0581 1011 400 | 327.4 | 0581 1017 400 | 352.6 | 0581 1018 400 | 354.6 |
| 450                                                                                            | 0581 1011 450 | 368.2 | 0581 1017 450 | 396.6 | 0581 1018 450 | 399.0 |

\* Other SDR classes on request



- 1 Double-lip sealing system
- 2 Standard strip insert

## The repair coupling

NORMACONNECT® FGR REP E are non-restraint repair couplings. They are used to seal damaged metal and plastic pipes. They also enable repairs to be carried out easily, quickly and safely without the need to dismantle the pipes.

### Advantages at a glance

- ✓ Ensures a reliable, safe, leakage-free seal of pipe damages
- ✓ Enables easy, quick and safe repair without dismantling the pipes
- ✓ Easy to install without special tools

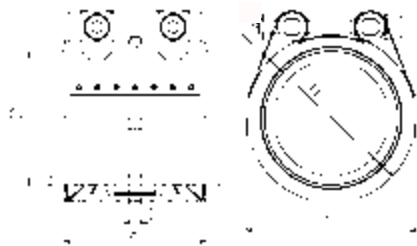
### Information

- Sizes: from 35.0 mm to 1,219.1 mm
- Working pressure: from 60.0 bar to 4.0 bar
- Material: AISI 316 Ti
- EPDM:
  - Sizes from 35.0 mm up to 168.3 mm: -30 °C up to +125 °C
  - Sizes > 180.0 mm: -20 °C up to +80 °C
- NBR : from -20 °C up to +80 °C

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    |    |    |    | x  |

### Technical data & Ordering information



## Technical data &amp; Ordering information

| NORMACONNECT® FGR REP E |                  |                                               |                                                                                            |                  |                         |        |        |                     |                          |                           |                   |               |
|-------------------------|------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|------------------|-------------------------|--------|--------|---------------------|--------------------------|---------------------------|-------------------|---------------|
| Ø<br>(O.D.)             | Designation      | Clamping ranges                               | WP <sup>1</sup>                                                                            | C <sub>max</sub> | Dimensions<br>(approx.) |        |        | Weight<br>(approx.) | Hex socket locking bolts |                           | W5<br>Product No. |               |
|                         |                  | Od <sub>min</sub> - Od <sub>max</sub><br>(mm) | <br>[bar] | (mm)             | a (mm)                  | d (mm) | H (mm) | (kg/pc.)            | Thread                   | Tightening<br>torque (Nm) | EPDM              | NBR           |
| 35.0                    | REP E W5 35.0    | 34.5 - 35.6                                   | 60                                                                                         | 8                | 63                      | 55     | 75     | 0.41                | M 8 SW 6                 | 5                         | 0572 9360 035     | 0572 8660 035 |
| 38.0                    | REP E W5 38.0    | 37.5 - 38.6                                   | 60                                                                                         | 8                | 63                      | 60     | 80     | 0.41                | M 8 SW 6                 | 5                         | 0572 9360 038     | 0572 8660 038 |
| 42.4                    | REP E W5 42.4    | 41.7 - 43.0                                   | 50                                                                                         | 8                | 63                      | 65     | 85     | 0.42                | M 8 SW 6                 | 5                         | 0572 9360 042     | 0572 8660 042 |
| 44.5                    | REP E W5 44.5    | 44.0 - 45.1                                   | 50                                                                                         | 8                | 63                      | 65     | 85     | 0.43                | M 8 SW 6                 | 5                         | 0572 9360 044     | 0572 8660 044 |
| 48.3                    | REP E W5 48.3    | 47.6 - 50.5                                   | 50                                                                                         | 8                | 63                      | 70     | 90     | 0.44                | M 8 SW 6                 | 5                         | 0572 9360 048     | 0572 8660 048 |
| 54.0                    | REP E W5 54.0    | 53.3 - 54.6                                   | 50                                                                                         | 17               | 78                      | 75     | 95     | 0.58                | M 8 SW 6                 | 10                        | 0572 9360 054     | 0572 8660 054 |
| 57.0                    | REP E W5 57.0    | 56.3 - 57.7                                   | 50                                                                                         | 17               | 78                      | 80     | 100    | 0.58                | M 8 SW 6                 | 10                        | 0572 9360 057     | 0572 8660 057 |
| 60.3                    | REP E W5 60.3    | 59.5 - 61.0                                   | 40                                                                                         | 17               | 78                      | 85     | 105    | 0.59                | M 8 SW 6                 | 10                        | 0572 9360 060     | 0572 8660 060 |
| 70.0                    | REP E W5 70.0    | 69.0 - 71.0                                   | 40                                                                                         | 25               | 98                      | 90     | 110    | 0.59                | M 8 SW 6                 | 10                        | 0572 9360 070     | 0572 8660 070 |
| 73.0                    | REP E W5 73.0    | 72.1 - 73.8                                   | 40                                                                                         | 25               | 98                      | 95     | 115    | 1.13                | M 8 SW 6                 | 10                        | 0572 9360 073     | 0572 8660 073 |
| 76.1                    | REP E W5 76.1    | 75.2 - 77.0                                   | 35                                                                                         | 25               | 98                      | 100    | 120    | 1.13                | M 8 SW 6                 | 10                        | 0572 9360 076     | 0572 8660 076 |
| 78.0                    | REP E W5 78.0    | 77.1 - 78.9                                   | 35                                                                                         | 25               | 98                      | 100    | 120    | 1.14                | M 8 SW 6                 | 15                        | 0572 9360 078     | 0572 8660 078 |
| 80.0                    | REP E W5 80.0    | 79.0 - 80.8                                   | 35                                                                                         | 25               | 98                      | 100    | 120    | 1.16                | M 8 SW 6                 | 15                        | 0572 9360 080     | 0572 8660 080 |
| 84.0                    | REP E W5 84.0    | 83.0 - 85.0                                   | 35                                                                                         | 25               | 98                      | 105    | 125    | 1.18                | M 8 SW 6                 | 15                        | 0572 9360 084     | 0572 8660 084 |
| 88.9                    | REP E W5 88.9    | 87.0 - 89.9                                   | 35                                                                                         | 25               | 98                      | 110    | 130    | 1.20                | M 8 SW 6                 | 15                        | 0572 9360 088     | 0572 8660 088 |
| 101.6                   | REP E W5 101.6   | 100.4 - 102.8                                 | 35                                                                                         | 25               | 98                      | 125    | 145    | 1.33                | M 8 SW 6                 | 15                        | 0572 9360 101     | 0572 8660 101 |
| 104.0                   | REP E W5 104.0   | 102.8 - 106.1                                 | 35                                                                                         | 25               | 98                      | 125    | 145    | 1.36                | M 8 SW 6                 | 15                        | 0572 9360 104     | 0572 8660 104 |
| 108.0                   | REP E W5 108.0   | 106.8 - 109.2                                 | 35                                                                                         | 25               | 98                      | 130    | 150    | 1.40                | M 8 SW 6                 | 15                        | 0572 9360 108     | 0572 8660 108 |
| 110.0                   | REP E W5 110.0   | 108.8 - 111.4                                 | 35                                                                                         | 25               | 98                      | 130    | 150    | 1.40                | M 8 SW 6                 | 20                        | 0572 9360 110     | 0572 8660 110 |
| 114.3                   | REP E W5 114.0   | 113.0 - 115.5                                 | 35                                                                                         | 25               | 98                      | 135    | 155    | 1.99                | M 8 SW 6                 | 30                        | 0572 9360 114     | 0572 8660 114 |
| 129.0                   | REP E W5 129.0   | 127.6 - 131.1                                 | 32                                                                                         | 35               | 113                     | 155    | 185    | 2.00                | M 10 SW 8                | 30                        | 0572 9360 129     | 0572 8660 129 |
| 133.0                   | REP E W5 133.0   | 131.5 - 134.4                                 | 32                                                                                         | 35               | 113                     | 160    | 190    | 2.03                | M 10 SW 8                | 30                        | 0572 9360 133     | 0572 8660 133 |
| 139.7                   | REP E W5 139.7   | 138.1 - 141.6                                 | 32                                                                                         | 35               | 113                     | 165    | 195    | 2.08                | M 10 SW 8                | 30                        | 0572 9360 139     | 0572 8660 139 |
| 141.3                   | REP E W5 141.3   | 139.6 - 142.8                                 | 32                                                                                         | 35               | 113                     | 170    | 200    | 2.09                | M 10 SW 8                | 35                        | 0572 9360 141     | 0572 8660 141 |
| 154.0                   | REP E W5 154.0   | 152.3 - 156.1                                 | 32                                                                                         | 35               | 113                     | 180    | 210    | 2.19                | M 10 SW 8                | 50                        | 0572 9360 154     | 0572 8660 154 |
| 159.0                   | REP E W5 159.0   | 157.3 - 160.7                                 | 32                                                                                         | 35               | 113                     | 185    | 215    | 2.26                | M 10 SW 8                | 50                        | 0572 9360 159     | 0572 8660 159 |
| 168.3                   | REP E W5 168.0   | 166.5 - 170.1                                 | 32                                                                                         | 35               | 113                     | 195    | 225    | 2.31                | M 10 SW 8                | 50                        | 0572 9360 168     | 0572 8660 168 |
| 180.0                   | REP E W5 180.0   | 178.0 - 182.0                                 | 30.0                                                                                       | 35               | 139                     | 210    | 240    | 4.0                 | M 12 SW 10               | 25                        | 0576 8360 180     | 0576 8660 180 |
| 193.7                   | REP E W5 193.7   | 192.0 - 196.0                                 | 28.0                                                                                       | 35               | 139                     | 225    | 255    | 4.1                 | M 12 SW 10               | 25                        | 0576 8360 193     | 0576 8660 193 |
| 206.0                   | REP E W5 206.0   | 202.0 - 208.0                                 | 26.5                                                                                       | 35               | 139                     | 240    | 270    | 4.3                 | M 12 SW 10               | 25                        | 0576 8360 206     | 0576 8660 206 |
| 219.0                   | REP E W5 219.0   | 216.0 - 221.0                                 | 23.0                                                                                       | 35               | 139                     | 250    | 280    | 4.4                 | M 12 SW 10               | 25                        | 0576 8360 219     | 0576 8660 219 |
| 225.0                   | REP E W5 225.0   | 222.0 - 227.0                                 | 23.0                                                                                       | 35               | 139                     | 255    | 285    | 4.5                 | M 12 SW 10               | 25                        | 0576 8360 225     | 0576 8660 225 |
| 229.9                   | REP E W5 229.9   | 228.0 - 232.0                                 | 23.0                                                                                       | 35               | 139                     | 260    | 290    | 4.5                 | M 12 SW 10               | 25                        | 0576 8360 229     | 0576 8660 229 |
| 244.5                   | REP E W5 244.5   | 242.0 - 247.0                                 | 22.0                                                                                       | 35               | 139                     | 275    | 305    | 4.7                 | M 12 SW 10               | 25                        | 0576 8360 244     | 0576 8660 244 |
| 254.0                   | REP E W5 254.0   | 250.0 - 256.0                                 | 21.0                                                                                       | 35               | 139                     | 285    | 315    | 4.8                 | M 12 SW 10               | 25                        | 0576 8360 254     | 0576 8660 254 |
| 267.0                   | REP E W5 267.0   | 264.0 - 269.0                                 | 20.0                                                                                       | 35               | 139                     | 300    | 330    | 5.0                 | M 12 SW 10               | 25                        | 0576 8360 267     | 0576 8660 267 |
| 273.0                   | REP E W5 273.0   | 270.0 - 275.0                                 | 20.0                                                                                       | 35               | 139                     | 305    | 335    | 5.1                 | M 12 SW 10               | 25                        | 0576 8360 273     | 0576 8660 273 |
| 306.0                   | REP E W5 306.0   | 302.0 - 308.0                                 | 17.5                                                                                       | 35               | 139                     | 340    | 370    | 5.5                 | M 12 SW 10               | 25                        | 0576 8360 306     | 0576 8660 306 |
| 323.9                   | REP E W5 323.9   | 320.0 - 327.0                                 | 17.5                                                                                       | 35               | 139                     | 355    | 385    | 5.7                 | M 12 SW 10               | 25                        | 0576 8360 323     | 0576 8660 323 |
| 326.0                   | REP E W5 326.0   | 322.0 - 329.0                                 | 16.5                                                                                       | 35               | 139                     | 360    | 390    | 5.7                 | M 12 SW 10               | 25                        | 0576 8360 326     | 0576 8660 326 |
| 355.6                   | REP E W5 355.6   | 352.0 - 359.0                                 | 15.0                                                                                       | 35               | 139                     | 390    | 420    | 6.0                 | M 12 SW 10               | 25                        | 0576 8360 355     | 0576 8660 355 |
| 406.4                   | REP E W5 406.4   | 402.0 - 410.0                                 | 14.0                                                                                       | 35               | 139                     | 440    | 470    | 6.6                 | M 12 SW 10               | 25                        | 0576 8360 406     | 0576 8660 406 |
| 429.0                   | REP E W5 429.0   | 426.0 - 431.0                                 | 13.0                                                                                       | 35               | 139                     | 460    | 490    | 6.9                 | M 12 SW 10               | 40                        | 0576 8360 429     | 0576 8660 429 |
| 442.0                   | REP E W5 442.0   | 439.0 - 444.0                                 | 13.0                                                                                       | 35               | 139                     | 475    | 505    | 7.1                 | M 12 SW 10               | 40                        | 0576 8360 442     | 0576 8660 442 |
| 457.2                   | REP E W5 457.2   | 454.0 - 459.0                                 | 12.0                                                                                       | 35               | 139                     | 490    | 520    | 7.3                 | M 12 SW 10               | 40                        | 0576 8360 457     | 0576 8660 457 |
| 508.0                   | REP E W5 508.0   | 505.0 - 510.0                                 | 11.0                                                                                       | 35               | 139                     | 540    | 570    | 7.9                 | M 12 SW 10               | 40                        | 0576 8360 508     | 0576 8660 508 |
| 531.0                   | REP E W5 531.0   | 528.0 - 534.0                                 | 10.5                                                                                       | 35               | 139                     | 565    | 595    | 8.1                 | M 12 SW 10               | 40                        | 0576 8360 531     | 0576 8660 531 |
| 558.8                   | REP E W5 558.8   | 556.0 - 562.0                                 | 10.0                                                                                       | 35               | 139                     | 590    | 620    | 8.5                 | M 12 SW 10               | 40                        | 0576 8360 558     | 0576 8660 558 |
| 609.6                   | REP E W5 609.6   | 606.0 - 613.0                                 | 9.0                                                                                        | 35               | 139                     | 640    | 670    | 9.1                 | M 12 SW 10               | 40                        | 0576 8360 609     | 0576 8660 609 |
| 634.0                   | REP E W5 634.0   | 631.0 - 637.0                                 | 8.0                                                                                        | 35               | 139                     | 665    | 695    | 9.4                 | M 12 SW 10               | 40                        | 0576 8360 634     | 0576 8660 634 |
| 711.2                   | REP E W5 711.2   | 707.0 - 715.0                                 | 7.0                                                                                        | 35               | 139                     | 745    | 775    | 10.3                | M 12 SW 10               | 40                        | 0576 8360 711     | 0576 8668 711 |
| 762.0                   | REP E W5 762.0   | 758.0 - 766.0                                 | 7.0                                                                                        | 35               | 139                     | 795    | 825    | 10.9                | M 12 SW 10               | 40                        | 0576 8360 762     | 0576 8668 762 |
| 812.8                   | REP E W5 812.8   | 808.0 - 817.0                                 | 6.5                                                                                        | 35               | 139                     | 845    | 875    | 11.5                | M 12 SW 10               | 40                        | 0576 8368 812     | 0576 8668 812 |
| 914.4                   | REP E W5 914.4   | 909.0 - 919.0                                 | 5.5                                                                                        | 35               | 139                     | 945    | 975    | 12.7                | M 12 SW 10               | 45                        | 0576 8368 914     | 0576 8668 914 |
| 1,016.0                 | REP E W5 1,016.0 | 1,013.0 - 1,019.0                             | 5.0                                                                                        | 35               | 139                     | 1,050  | 1,080  | 13.9                | M 12 SW 10               | 45                        | 0576 8368 016     | 0576 8668 016 |
| 1,117.5                 | REP E W5 1,117.5 | 1,114.0 - 1,120.0                             | 4.5                                                                                        | 35               | 139                     | 1,150  | 1,180  | 15.1                | M 12 SW 10               | 50                        | 0576 8368 117     | 0576 8668 117 |
| 1,219.2                 | REP E W5 1,219.2 | 1,216.0 - 1,222.0                             | 4.0                                                                                        | 35               | 139                     | 1,250  | 1,280  | 16.3                | M 12 SW 10               | 50                        | 0576 8368 219     | 0576 8668 219 |

Coupling sizes &gt; 800 mm are in 2-parts design! Sizes &gt; 1,219.2 on request







# NORMACONNECT® DCS – Infrastructure Connectors

The complete NORMACONNECT® DCS range has been proven a million times when used to achieve both a reliable and economic connection of socketless drainage pipes. Inside buildings, in underground car parks, buried in soil and for drainage systems in bridges, NORMACONNECT® DCS is the ideal connecting solution. A large number of well-known companies have been using our know-how in the development and manufacture of pipe connections for many years. Thus, behind many successful brands with well-established reputations, you can find the certified quality and the reliability of NORMA® connections. Since the materials for our products are carefully chosen to match their applications and operating conditions, we can assure you that they function safely for a long time – as you would expect from a modern piping system.



## Certificates, Liability, Memberships

### Certificates

Materialprüfungsamt Nordrhein-Westfalen (MPA NRW)

### Liability

Product liability: In case of bodily injury and/or material damage.

### Memberships

IZEG – Informationszentrum Entwässerungstechnik Guss

GEG – Gütergemeinschaft Entwässerungstechnik Guss



Informationszentrum  
Entwässerungstechnik Guss e.V.



Entwässerungstechnik  
Guss

## Materials at a glance

| Materials for connectors and claws         |             |                          |                          |                |
|--------------------------------------------|-------------|--------------------------|--------------------------|----------------|
|                                            | Collar      | Clamping unit            | Screws, nuts, bolts      | Sealing sleeve |
| W1                                         |             |                          | Steel, protected surface | –              |
| W2                                         | AISI 430 Ti | AISI 304                 | Steel, protected surface | EPDM           |
| W4                                         | AISI 304    | AISI 304                 | AISI 304                 | EPDM           |
| W5                                         | AISI 316 Ti | AISI 316 Ti              | AISI 316                 | EPDM           |
| Materials for NORMACONNECT® pipe couplings |             |                          |                          |                |
|                                            | Collar      | Clamping unit            | Screws                   | Sealing sleeve |
| W2                                         | AISI 304    | Steel, protected surface | Steel, protected surface | EPDM           |
| W5                                         | AISI 316 Ti | AISI 316 Ti              | AISI 316                 | EPDM           |

## Products and Application at a glance

| TYPE                                                                                                 |    |    |      |       |     |     |     |     |     |     | Seal Type | Material | Application |         |      |
|------------------------------------------------------------------------------------------------------|----|----|------|-------|-----|-----|-----|-----|-----|-----|-----------|----------|-------------|---------|------|
|                                                                                                      | 50 | 70 | 75 S | 75/80 | 100 | 125 | 150 | 200 | 250 | 300 | Standard  |          | Buildings   | Bridges | Soil |
| NON-PULL-OUT resistant connections                                                                   |    |    |      |       |     |     |     |     |     |     |           |          |             |         |      |
| RAPID W2          | •  | •  | •    | •     | •   | •   | •   | •   |     |     | EPDM/NBR  | W 2      | •           | -       | -    |
| RAPID W5          | •  | •  | •    | •     | •   | •   | •   | •   | •   | •   | EPDM/NBR  | W 5      | •           | •       | •    |
| RAPID MSM         | •  | •  |      | •     | •   | •   | •   | •   |     |     | EPDM/NBR  | W 2      | •           | -       | -    |
| Pull-out resistant connections                                                                       |    |    |      |       |     |     |     |     |     |     |           |          |             |         |      |
| Universal Claw *  | 10 | 10 |      | 10    | 10  | 10  | 5   | 5   | 3   | 3   | -         | W 2      | •           | -       | -    |
| Combi Claw *      | 10 | 10 |      | 10    | 10  | 5   | 5   | 5   | 3   | 3   | -         | W 1      | •           | -       | -    |
| Changeover connectors                                                                                |    |    |      |       |     |     |     |     |     |     |           |          |             |         |      |
| Confix            | •  | •  |      | •     | •   | •   |     |     |     |     | EPDM      | -        | •           | -       | -    |

Technical changes reserved

\* The claws are only suitable for open drainage systems. It is not allowed for use in closed pressure systems.



- 1 Hexagonal socket bolt with washer
- 2 Square nut
- 3 Closure unit
- 4 Collar
- 5 Sealing sleeve

## The original RAPID with block tightening

The NORMACONNECT® DCS RAPID with block tightening for non-pull-out resistant connections enables a fast connection. The visible torque control and the single-bolt closure provide for a fast and easy installation. Our DCS RAPID is the perfect solution to connect drainage fittings and pipes made of cast iron acc. to EN 877.

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    |    | x  |

#### W2

- Collar: AISI 430 Ti
- Clamping unit: AISI 304 / AISI 430 Ti
- Bolts/Nuts: Steel, surface protected
- Sealing sleeve: EPDM, NBR

#### W5

- Collar: AISI 316Ti
- Clamping unit: AISI 316Ti
- Bolts/Nuts, Steel, surface protected
- Sealing sleeve: EPDM, NBR

### Information

- DN 50 – DN 200: Resisting axial pull-out forces up to max. 0.5 bar
- DN 250 – DN 300: Resisting axial pull-out forces up to max. 0.3 bar
- Defined locking torque without using a special tool
- Meeting the fire protection requirements

### Technical data & Ordering information

| NORMACONNECT® DCS RAPID |                                  |           |           |           |                |                |              |                   |                   |
|-------------------------|----------------------------------|-----------|-----------|-----------|----------------|----------------|--------------|-------------------|-------------------|
| Designation             | Max. Dimensions after Assembly ~ |           |           |           |                |                |              | W2<br>Product No. | W5<br>Product No. |
|                         | DN                               | D<br>(mm) | H<br>(mm) | L<br>(mm) | P<br>max (bar) | Torque<br>(Nm) | Bolt<br>(mm) |                   |                   |
| RAPID DN 50             | 50                               | 70        | 80        | 46        | 0.5            | Tight-Locking  | M 8          | 0245 8218 050     | 0245 8126 050     |
| RAPID DN 70             | 70                               | 90        | 100       | 43        | 0.5            | Tight-Locking  | M 8          | 0245 8219 070     | 0245 8127 070     |
| RAPID DN 75 S           | 75                               | 87        | 97        | 40.5      | 0.5            | Tight-Locking  | M 8          | 0245 8265 075     |                   |
| RAPID DN 80             | 75/80                            | 95        | 105       | 40        | 0.5            | Tight-Locking  | M 8          | 0245 8220 080     | 0245 8129 075     |
| RAPID DN 100*           | 100                              | 125       | 135       | 39.0      | 0.5            | Tight-Locking  | M 8          | 0245 8221 100     | 0245 8130 100     |
| RAPID DN 125            | 125                              | 147       | 162       | 37.0      | 0.5            | Tight-Locking  | M 8          | 0245 8222 125     | 0245 8131 125     |
| RAPID DN 150            | 150                              | 172       | 187       | 35.5      | 0.5            | Tight-Locking  | M 8          | 0245 8223 150     | 0245 8132 150     |
| RAPID DN 200            | 200                              | 227       | 244       | 33.5      | 0.5            | Tight-Locking  | M 10         | 0245 8224 200     | 0245 8133 200     |
| RAPID DN 250            | 250                              | 293       | 306       | 96        | 0.3            | Tight-Locking  | M 10         |                   | 0245 8208 250     |
| RAPID DN 300            | 300                              | 345       | 360       | 96        | 0.3            | Tight-Locking  | M 10         |                   | 0245 8209 300     |

\* DN 100 also suitable for connecting plastic drainage pipes DN 100



- 1 Hexagonal socket bolt with washer
- 2 Square nut
- 3 Closure unit
- 4 Collar
- 5 Sealing sleeve

## The fast connection with quick release closure

The NORMACONNECT® DCS RAPID MSM connection is easy-fitting and thus especially suitable for repair purposes. It is the fast connection with quick release closure for non-pull-out resistant connections.



### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    |    |    |

#### W2

- Collar: AISI 430 Ti
- Clamping unit: AISI 304 / AISI 430 Ti
- Bolts/Nuts: Steel, surface protected
- Sealing sleeve: EPDM, NBR

### Information

- Resisting axial pull-out forces up to max. 0.5 bar
- Defined locking torque without using a special tool
- Meeting the fire protection requirements

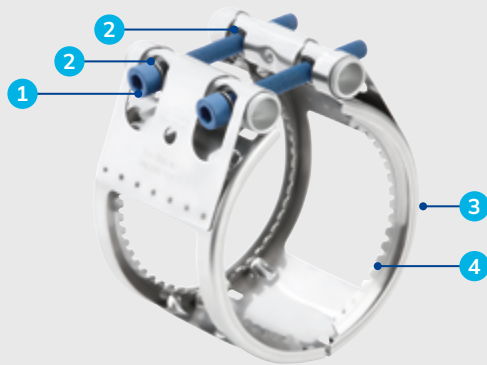
### Technical data & Ordering information



| NORMACONNECT® DCS RAPID MSM |                                  |           |           |           |                |                |              |                   |
|-----------------------------|----------------------------------|-----------|-----------|-----------|----------------|----------------|--------------|-------------------|
| Designation                 | Max. Dimensions after Assembly ~ |           |           |           |                |                |              | W2<br>Product No. |
|                             | DN                               | D<br>(mm) | H<br>(mm) | L<br>(mm) | P<br>max (bar) | Torque<br>(Nm) | Bolt<br>(mm) |                   |
| RAPID DN 50 MSM             | 50                               | 70        | 80        | 40        | 0.5            | Tight-Locking  | M 8          | 0245 8257 050     |
| RAPID DN 70 MSM             | 70                               | 90        | 100       | 40        | 0.5            | Tight-Locking  | M 8          | 0245 8258 070     |
| RAPID DN 80 MSM             | 75/80                            | 95        | 105       | 40        | 0.5            | Tight-Locking  | M 8          | 0245 8260 080     |
| RAPID DN 100 MSM*           | 100                              | 125       | 135       | 46        | 0.5            | Tight-Locking  | M 8          | 0245 8261 100     |
| RAPID DN 125 MSM            | 125                              | 147       | 162       | 55        | 0.5            | Tight-Locking  | M 8          | 0245 8262 125     |
| RAPID DN 150 MSM            | 150                              | 172       | 187       | 55        | 0.5            | Tight-Locking  | M 8          | 0245 8263 150     |
| RAPID DN 200 MSM            | 200                              | 227       | 244       | 70        | 0.5            | Tight-Locking  | M 10         | 0245 8264 200     |

\* DN 100 also suitable for connecting plastic drainage pipes DN 100





- 1 Hexagonal socket bolts
- 2 Hollow locking bars
- 3 Housing
- 4 Grip ring insert

## The powerful add-on claw

Combined with either DCS RAPID or DCS RAPID MSM standards connectors, our NORMACONNECT® DCS Universal Claw is an axial restraint claw which resists high tensile loads. The Grip-type coupling resists high tensile loads for non-pull-out resistant connections.



### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    |    |    |

#### W2

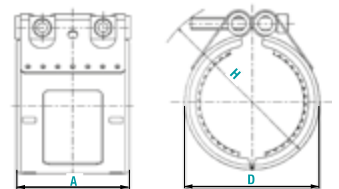
- Housing: AISI 430 Ti
- Closure unit: Steel, surface protected
- Grip ring: AISI 301

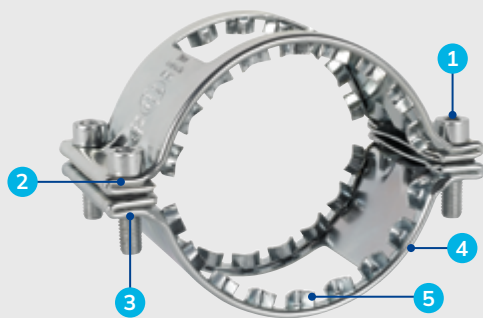
### Information

Recommended for use in combination with types RAPID/  
RAPID MSM: up to max. 10 bar

### Technical data & Ordering information

| NORMACONNECT® DCS Universal Claw |       |           |           |           |              |                   |                |                   |
|----------------------------------|-------|-----------|-----------|-----------|--------------|-------------------|----------------|-------------------|
| Designation                      | DN    | A<br>(mm) | D<br>(mm) | H<br>(mm) | Bolt<br>(mm) | P max (bar)       | Torque<br>(Nm) | W2<br>Product No. |
|                                  |       |           |           |           |              | RAPID / RAPID MSM |                |                   |
| Universal Claw DN 50             | 50    | 77        | 85        | 105       | M 8          | 10                | Tight-Locking  | 0262 8401 050     |
| Universal Claw DN 70             | 70    | 77        | 100       | 120       | M 8          | 10                | Tight-Locking  | 0262 8402 070     |
| Universal Claw DN 75S            | 75    | 77        | 100       | 120       | M 8          | 10                | Tight-Locking  | 0262 8404 075     |
| Universal Claw DN 80             | 75/80 | 77        | 105       | 125       | M 8          | 10                | Tight-Locking  | 0262 8403 080     |
| Universal Claw DN 100            | 100   | 97        | 130       | 150       | M 10         | 10                | Tight-Locking  | 0262 8405 100     |
| Universal Claw DN 125            | 125   | 97        | 165       | 195       | M 10         | 10                | Tight-Locking  | 0262 8406 125     |
| Universal Claw DN 150            | 150   | 97        | 185       | 215       | M 10         | 5                 | Tight-Locking  | 0262 8407 150     |
| Universal Claw DN 200            | 200   | 113       | 240       | 270       | M 12         | 5                 | Tight-Locking  | 0262 8415 200     |
| Universal Claw DN 250            | 250   | 139       | 305       | 335       | M 12         | 3                 | Tight-Locking  | 0262 8416 250     |
| Universal Claw DN 300            | 300   | 139       | 400       | 490       | M 12         | 3                 | Tight-Locking  | 0262 8417 300     |





- 1 Hexagonal socket bolts
- 2 Guiding side
- 3 Threaded side
- 4 Housing
- 5 Anchoring teeth

## The claw which resists high tensile loads

Our **NORMACONNECT®** DCS Combi Claw is an axial restraint safety claw for connecting rainwater and sewage lines that are at risk of undergoing back pressures. It is used in combination with **NORMACONNECT®** RAPID/RAPID MSM and standard connectors. The powerful add-on claw for non-pull-out resistant connections.

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
| x  |    |    |    |    |

### Information

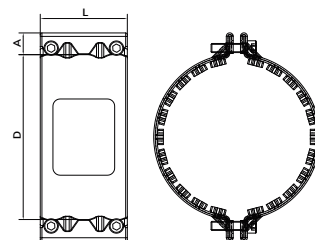
- Axial restraint up to 10 bar
- Diameters DN 50 up to DN 300

#### W1

- Housing: Steel, surface protected
- Closure unit: Steel, surface protected

### Technical data & Ordering information

| NORMACONNECT® DCS Combi Claw |     |        |        |        |             |           |             |                |
|------------------------------|-----|--------|--------|--------|-------------|-----------|-------------|----------------|
| Designation                  | DN  | D (mm) | A (mm) | L (mm) | Torque (Nm) | Bolt (mm) | P max (bar) | W1 Product No. |
| Combi Claw DN 50             | 50  | 76     | 18     | 72     | 20          | M8        | up to 10    | 0262 8590 050  |
| Combi Claw DN 80             | 80  | 99     | 18     | 72     | 20          | M8        | up to 10    | 0262 8590 080  |
| Combi Claw DN 100            | 100 | 130    | 21     | 82     | 25          | M10       | up to 10    | 0262 8591 100  |
| Combi Claw DN 125            | 125 | 156    | 21     | 96     | 25          | M10       | up to 8     | 0262 8592 125  |
| Combi Claw DN 150            | 150 | 180    | 21     | 96     | 25          | M10       | up to 8     | 0262 8592 150  |
| Combi Claw DN 200            | 200 | 235    | 27     | 110    | 65          | M 12      | up to 5     | 0262 8592 200  |
| Combi Claw DN 250            | 250 | 285    | 27     | 130    | 65          | M 12      | up to 3     | 0262 8592 250  |
| Combi Claw DN 300            | 300 | 335    | 27     | 130    | 65          | M 12      | up to 3     | 0262 8592 300  |





- 1 Easy handling
- 2 Strong worm-drive hose clamp

## The changeover connector with 2 lip seals

The NORMACONNECT® Confix is a Flexible connection which adapts to different pipe dimensions and materials.

### Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  |    |    |    |

### Main advantage

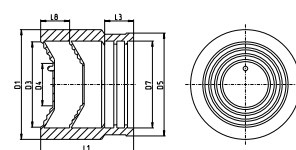
- ✓ The connection of feed or suction lines to a pipe – either made of steel or plastics – is easily and safely achieved with the Confix connector.

Connector: EPDM

Worm-drive hose clamp band: AISI 430

### Technical data & Ordering information

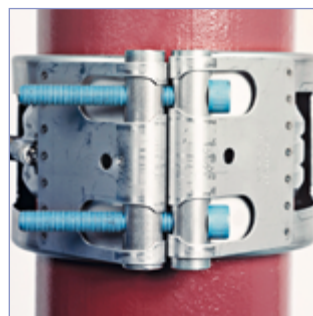
| NORMACONNECT® DCS Confix, EPDM with TORRO® W2, Changeover Connector |     |            |            |            |            |            |            |            |            |                         |                   |
|---------------------------------------------------------------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|-------------------------|-------------------|
| Designation                                                         | DN  | D1<br>(mm) | D3<br>(mm) | D4<br>(mm) | D5<br>(mm) | D7<br>(mm) | L1<br>(mm) | L3<br>(mm) | L8<br>(mm) | Insertion<br>depth (mm) | W2<br>Product No. |
| Confix DN 50                                                        | 50  | 72         | 56         | 30         | 67.5       | 57         | 63         | 19         | 19         | 42                      | 0245 9003 050     |
| Confix DN 70                                                        | 70  | 92         | 75         | 41         | 86.5       | 77         | 77         | 19         | 24         | 55                      | 0245 9003 070     |
| Confix DN 80 56-75                                                  | 80  | 92         | 75         | 41         | 91         | 81         | 77         | 19         | 24         | 55                      | 0245 9003 075     |
| Confix DN 80 75-90                                                  | 80  | 108        | 90         | 58         | 93         | 81         | 88         | 19         | 23         | 60                      | 0245 9003 080     |
| Confix DN 100                                                       | 100 | 128        | 110        | 78         | 118        | 108        | 95         | 21         | 23         | 65                      | 0245 9003 100     |
| Confix DN 125                                                       | 125 | 145        | 126        | 90         | 145        | 132        | 103        | 26         | 27         | 75                      | 0245 9003 125     |



## Dimensions of pipes and fittings to EN 877

| Dimensions of pipes and fittings to EN 877 |                       |              |                |               |
|--------------------------------------------|-----------------------|--------------|----------------|---------------|
| DN                                         | Outside Diameter (OD) |              | Wall Thickness |               |
|                                            | Nominal value         | Tolerances   | Nominal value  | Minimum value |
| 40                                         | 48                    | +2<br>-1     | 3.0            | 2.5           |
| 50                                         | 58                    | +2<br>-1     | 3.5            | 3.0           |
| 70                                         | 78                    | +2<br>-1     | 3.5            | 3.0           |
| 75/80                                      | 83                    | +2<br>-1     | 3.5            | 3.0           |
| 100                                        | 110                   | +2<br>-1     | 3.5            | 3.0           |
| 125                                        | 135                   | +2<br>-2     | 4.0            | 3.5           |
| 150                                        | 160                   | +2<br>-2     | 4.0            | 3.5           |
| 200                                        | 210                   | +2.5<br>-2.5 | 5.0            | 4.0           |
| 250                                        | 274                   | +2.5<br>-2.5 | 5.5            | 4.5           |
| 300                                        | 326                   | +2.5<br>-2.5 | 6.0            | 5.0           |
| 400                                        | 429                   | +2<br>-3     | 6.3            | 5.0           |
| 500                                        | 532                   | +2<br>-3.5   | 7.0            | 5.2           |
| 600                                        | 635                   | +2<br>-4     | 7.7            | 5.8           |

Dimensions in mm



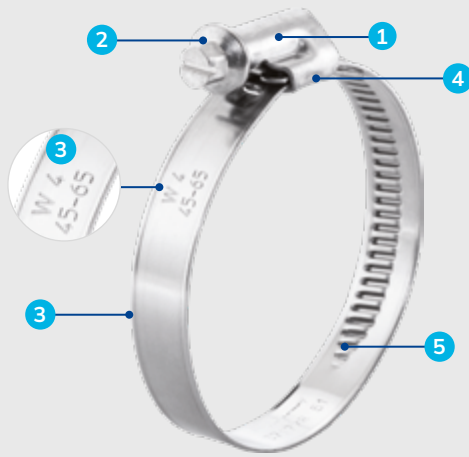


# NORMACLAMP® – Hose Clamps

## A comprehensive range to suit diverse applications

Whether you're looking for static hose clamps without springs or dynamic ones with springs, single-range or multi-range clamps, with NORMACLAMP® you'll find the perfect solution for any application.





- 1 Asymmetric housing**  
- even distribution of clamping forces and safe assembly
- 2 Screw support**  
- safe guidance of the emerging band end
- 3 Material and clamping range stamped on the band**  
- prevention of errors
- 4 Short housing saddle**  
- even distribution of clamping forces in the housing area prevents leakage
- 5 Non perforated clamp band with soft elevated edges**  
- optimal hose protection

## Worm drive hose clamps in accordance with DIN 3017

NORMACLAMP® TORRO® multi-range hose clamps are ideally suited to applications with high mechanical loads. Thanks to the continuous developments these products have undergone, they remain the benchmark within modern clamp construction. Within the NORMACLAMP® range, only the TORRO® has its trademark asymmetrical construction. The asymmetric housing provides high force, superior torque and even distribution of clamping forces. Clamp aligns perfectly on the hose and ensures the optimal sealing of the connection.



### Advantages at a glance

- ✓ Multi-range hose clamp
- ✓ No chromium (VI) used for coating purposes
- ✓ Clamping ranges in acc. with DIN 3017: 8-12 mm to 140-160 mm
- ✓ Larger diameters available on request

### Applications

- Joining cooling water lines
- Depressurized and pressurized fuel lines and ventilation systems
- Oil lines
- Joining lines in sanitary applications
- Joining lines in machine building applications
- Lines in the household appliance industry
- Hose lines in the commercial vehicle industries

### Materials

| W1* | W2 | W3 | W4 | W5 |
|-----|----|----|----|----|
| x   | x  | x  | x  | x  |

\* No chromium (VI) used for the coating on the closure components

| Material | Corrosion resistance in salt spray testing |
|----------|--------------------------------------------|
| W1       | Min. 144 h                                 |
| W2       | Min. 72 h                                  |
| W3       | Min. 240 h*                                |
| W4       | Min. 480 h                                 |
| W5       | Min. 1000 h                                |

\* Max 10% base metal corrosion permissible

### Types of clamp band and screw

|               |       | W1 | W2 | W3 | W4 | W5 |
|---------------|-------|----|----|----|----|----|
| Phillips head | SW 7* | •  | •  |    |    |    |
| Slotted head  | SW 7  |    |    | •  | •  | •  |

\* Band width 7.5 mm = SW 6

#### Band width 7.5 mm

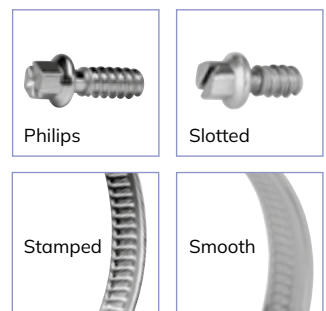
- W2, W3 with smooth inside

#### Band width 9 mm

- W1 with smooth inside
- W2, W3, W4, W5 with stamped inside

#### Band width 12 mm

- W1, W2, W3 with smooth inside
- W4, W5 with stamped inside

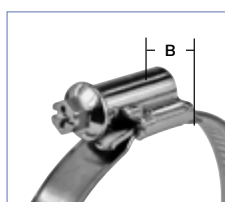


## Technical data & Ordering information

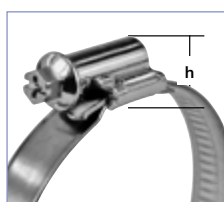
| NORMACLAMP® TORRO® |                        |                 |                |      |      |      |      |                |                   |                   |                   |                   |
|--------------------|------------------------|-----------------|----------------|------|------|------|------|----------------|-------------------|-------------------|-------------------|-------------------|
| Width              | Designation            | Clamping ranges |                | B    | h    | L    | s    | s<br>(W1 only) | W1<br>Product No. | W2<br>Product No. | W4<br>Product No. | W5<br>Product No. |
|                    |                        | (mm)            | (inches)       |      |      |      |      |                |                   |                   |                   |                   |
| 7.5                | TORRO® 8-12/7.5        | 8-12            | 5/16-1/2"      | 11.5 | 9    | 17   | 0.6  |                |                   | 0116 7602 010     |                   |                   |
|                    | TORRO® 10-16/7.5       | 10-16           | 3/8-5/8"       | 11.5 | 9    | 17   | 0.6  |                |                   | 0116 7602 013     |                   |                   |
|                    | TORRO® 12-18/7.5       | 12-18           | 1/2-11/16"     | 11.5 | 9    | 17   | 0.6  |                |                   | 0116 7602 015     |                   |                   |
|                    | TORRO® 12-22/7.5       | 12-22           | 1/2-7/8"       | 11.5 | 9    | 17   | 0.6  |                |                   | 0116 7602 017     |                   |                   |
|                    | TORRO® 16-27/7.5       | 16-27           | 5/8-1 1/16"    | 11.5 | 9    | 17   | 0.6  |                |                   | 0116 7602 021     |                   |                   |
| 9                  | TORRO® 8-12/9          | 8-12            | 5/16-1/2"      | 13.0 | 11.0 | 21.0 | 0.65 | 0.8            | 0126 7565 010     | 0126 7702 010     | 0126 7704 010     |                   |
|                    | TORRO® 8-16/9          | 8-16            | 5/16-5/8"      | 13.0 | 11.0 | 21.0 | 0.65 | 0.8            |                   | 0126 7702 013     | 0126 7704 013     | 0126 7705 013     |
|                    | TORRO® 10-16/9         | 10-16           | 5/16-5/8"      | 13.0 | 11.0 | 21.0 | 0.65 | 0.8            | 0126 7565 013     |                   |                   |                   |
|                    | TORRO® 12-22/9         | 12-22           | 1/2-7/8"       | 13.0 | 11.0 | 24.0 | 0.65 | 0.8            | 0126 7565 017     | 0126 7702 017     | 0126 7704 017     | 0126 7705 017     |
|                    | TORRO® 16-27/9         | 16-27           | 5/8-1 1/16"    | 13.0 | 11.0 | 24.0 | 0.65 | 0.8            | 0126 7565 021     | 0126 7702 021     | 0126 7704 021     | 0126 7705 021     |
|                    | TORRO® 20-32/9         | 20-32           | 13/16-1 1/4"   | 13.0 | 11.0 | 24.0 | 0.65 | 0.8            | 0126 7565 026     | 0126 7702 026     | 0126 7704 026     | 0126 7705 026     |
|                    | TORRO® 25-40/9         | 25-40           | 1-1 9/16"      | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 032     | 0126 7702 032     | 0126 7704 032     | 0126 7705 032     |
|                    | TORRO® 30-45/9         | 30-45           | 1 3/16-1 3/4"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 037     | 0126 7702 037     | 0126 7704 037     | 0126 7705 037     |
|                    | TORRO® 35-50/9 (32-50) | 35-50           | 1 3/8-2"       | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 043     | 0126 7702 041     | 0126 7704 041     | 0126 7705 041     |
|                    | TORRO® 40-60/9         | 40-60           | 1 9/16-2 3/8"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 050     | 0126 7702 050     | 0126 7704 050     | 0126 7705 050     |
|                    | TORRO® 50-70/9         | 50-70           | 2-2 3/4"       | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 060     | 0126 7702 060     | 0126 7704 060     | 0126 7705 060     |
|                    | TORRO® 60-80/9         | 60-80           | 2 3/8-3 1/8"   | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 070     | 0126 7702 070     | 0126 7704 070     | 0126 7705 070     |
|                    | TORRO® 70-90/9         | 70-90           | 2 3/4-3 9/16"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 080     | 0126 7702 080     | 0126 7704 080     | 0126 7705 080     |
|                    | TORRO® 80-100/9        | 80-100          | 3 1/8-3 15/16" | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 090     | 0126 7702 090     | 0126 7704 090     | 0126 7705 090     |
|                    | TORRO® 90-110/9        | 90-110          | 3 9/16-4 5/16" | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 7565 100     | 0126 7702 100     | 0126 7704 100     | 0126 7705 100     |
|                    | TORRO® 100-120/9       | 100-120         | 3 15/16-4 3/4" | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 110     | 0126 6702 110     | 0126 6704 110     | 0126 6705 110     |
|                    | TORRO® 110-130/9       | 110-130         | 4 5/16-5 1/8"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 120     | 0126 6702 120     | 0126 6704 120     | 0126 6705 120     |
|                    | TORRO® 120-140/9       | 120-140         | 4 3/4-5 1/2"   | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 130     | 0126 6702 130     | 0126 6704 130     | 0126 6705 130     |
|                    | TORRO® 130-150/9       | 130-150         | 5 1/8-5 15/16" | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 140     | 0126 6702 140     | 0126 6704 140     | 0126 6705 140     |
|                    | TORRO® 140-160/9       | 140-160         | 5 1/2-6 5/16"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 150     | 0126 6702 150     | 0126 6704 150     | 0126 6705 150     |
|                    | TORRO® 150-170/9       | 150-170         | 5 7/8-6 3/4"   | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 160     | 0126 6702 160     | 0126 6704 160     | 0126 6705 160     |
|                    | TORRO® 160-180/9       | 160-180         | 6 1/4-7 1/16"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 170     | 0126 6702 170     | 012 66704 170     | 0126 6705 170     |
|                    | TORRO® 170-190/9       | 170-190         | 6 3/4-7 1/2"   | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 180     | 0126 6702 180     | 012 66704 180     | 0126 6705 180     |
|                    | TORRO® 180-200/9       | 180-200         | 7 1/16-7 7/8"  | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 190     | 0126 6702 190     | 0126 6704 190     | 0126 6705 190     |
|                    | TORRO® 190-210/9       | 190-210         | 7 1/2-8 1/4"   | 13.0 | 11.0 | 26.0 | 0.65 | 0.8            | 0126 6565 200     | 0126 6702 200     | 0126 6704 200     | 0126 6705 200     |
| 12                 | TORRO® 16-27/12        | 16-27           | 5/8-1 1/16"    | 14.6 | 12.5 | 30.0 | 0.8  | 0.8            | 0136 7352 021     | 0136 7702 021     | 0136 7704 021     | 0136 7705 021     |
|                    | TORRO® 20-32/12        | 20-32           | 13/16-1 1/4"   | 14.6 | 12.5 | 30.0 | 0.8  | 0.8            | 0136 7352 026     | 0136 7702 026     | 0136 7704 026     | 0136 7705 026     |
|                    | TORRO® 25-40/12        | 25-40           | 1-1 9/16"      | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 032     | 0136 7702 032     | 0136 7704 032     | 0136 7705 032     |
|                    | TORRO® 30-45/12        | 30-45           | 1 3/16-1 3/4"  | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 037     | 0136 7702 037     | 0136 7704 037     | 0136 7705 037     |
|                    | TORRO® 35-50/12        | 35-50           | 1 3/8-2"       | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 043     | 0136 7702 043     | 0136 7704 043     | 0136 7705 043     |
|                    | TORRO® 40-60/12        | 40-60           | 1 9/16-2 3/8"  | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 050     | 0136 7702 050     | 0136 7704 050     | 0136 7705 050     |
|                    | TORRO® 50-70/12        | 50-70           | 2-2 3/4"       | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 060     | 0136 7702 060     | 0136 7704 060     | 0136 7705 060     |
|                    | TORRO® 60-80/12        | 60-80           | 2 3/8-3 1/8"   | 14.6 | 12.5 | 30.0 | 0.8  | 1.0            | 0136 7352 070     | 0136 7702 070     | 0136 7704 070     | 0136 7705 070     |
|                    | TORRO® 70-90/12        | 70-90           | 2 3/4-3 9/16"  | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 7352 080     | 0136 7702 080     | 0136 7704 080     | 0136 7705 080     |
|                    | TORRO® 80-100/12       | 80-100          | 3 1/8-3 15/16" | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 7352 090     | 0136 7702 090     | 0136 7704 090     | 0136 7705 090     |
|                    | TORRO® 90-110/12       | 90-110          | 3 9/16-4 5/16" | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 7352 100     | 0136 7702 100     | 0136 7704 100     | 0136 7705 100     |
|                    | TORRO® 100-120/12      | 100-120         | 3 15/16-4 3/4" | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 110     | 0136 6702 110     | 0136 6704 110     | 0136 6705 110     |
|                    | TORRO® 110-130/12      | 110-130         | 4 5/16-5 1/8"  | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 120     | 0136 6702 120     | 0136 6704 120     | 0136 6705 120     |
|                    | TORRO® 120-140/12      | 120-140         | 4 3/4-5 1/2"   | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 130     | 0136 6702 130     | 0136 6704 130     | 0136 6705 130     |
|                    | TORRO® 130-150/12      | 130-150         | 5 1/8-5 15/16" | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 140     | 0136 6702 140     | 0136 6704 140     | 0136 6705 140     |
|                    | TORRO® 140-160/12      | 140-160         | 5 1/2-6 5/16"  | 14.6 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 150     | 0136 6702 150     | 0136 6704 150     | 0136 6705 150     |
|                    | TORRO® 150-170/12      | 150-170         | 5 7/8-6 3/4"   | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 160     | 0136 6702 160     | 0136 6704 160     | 0136 6705 160     |
|                    | TORRO® 160-180/12      | 160-180         | 6 1/4-7 1/16"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 170     | 0136 6702 170     | 0136 6704 170     | 0136 6705 170     |
|                    | TORRO® 170-190/12      | 170-190         | 6 3/4-7 1/2"   | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 180     | 0136 6702 180     | 0136 6704 180     | 0136 6705 180     |
|                    | TORRO® 180-200/12      | 180-200         | 7 1/16-7 7/8"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 190     | 0136 6702 190     | 0136 6704 190     | 0136 6705 190     |
|                    | TORRO® 190-210/12      | 190-210         | 7 1/2-8 1/4"   | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 200     | 0136 6702 200     | 0136 6704 200     | 0136 6705 200     |
|                    | TORRO® 200-220/12      | 200-220         | 7 7/8-8 5/8"   | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 210     | 0136 6702 210     | 0136 6704 210     | 0136 6705 210     |
|                    | TORRO® 210-230/12      | 210-230         | 8 1/4-9 1/16"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 220     | 0136 6702 220     | 0136 6704 220     | 0136 6705 220     |
|                    | TORRO® 220-240/12      | 220-240         | 8 5/8-9 1/2"   | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 230     | 0136 6702 230     | 0136 6704 230     | 0136 6705 230     |
|                    | TORRO® 230-250/12      | 230-250         | 9 1/16-9 7/8"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 240     | 0136 6702 240     | 0136 6704 240     | 0136 6705 240     |
|                    | TORRO® 240-260/12      | 240-260         | 9 1/2-10 1/4"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 250     | 0136 6702 250     | 0136 6704 250     | 0136 6705 250     |
|                    | TORRO® 250-270/12      | 250-270         | 9 7/8-10 5/8"  | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 260     | 0136 6702 260     | 0136 6704 260     | 0136 6705 260     |
|                    | TORRO® 260-280/12      | 260-280         | 10 1/4-11"     | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 270     | 0136 6702 270     | 0136 6704 270     | 0136 6705 270     |
|                    | TORRO® 270-290/12      | 270-290         | 10 5/8-11 3/8" | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 280     | 0136 6702 280     | 0136 6704 280     | 0136 6705 280     |
|                    | TORRO® 280-300/12      | 280-300         | 11-11 7/8"     | 14.5 | 12.5 | 36.0 | 0.8  | 1.0            | 0136 6352 290     | 0136 6702 290     | 0136 6704 290     | 0136 6705 290     |

Additional diameters on request (up to 700 mm).  
Our recommendation for bigger diameters:  
Available in W3 on request.

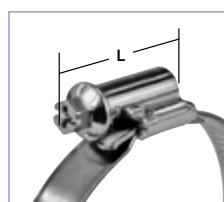
Refer to page 72



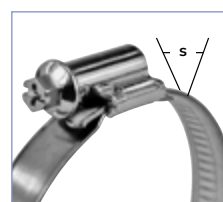
**B** = overall width  
housing



**h** = overall height  
bolt and housing



**L** = overall length  
bolt and housing



**s** = band thickness  
clamp band

|        |       |       |
|--------|-------|-------|
| TORRO® | 16-27 | 12    |
| Type   | ø     | Width |

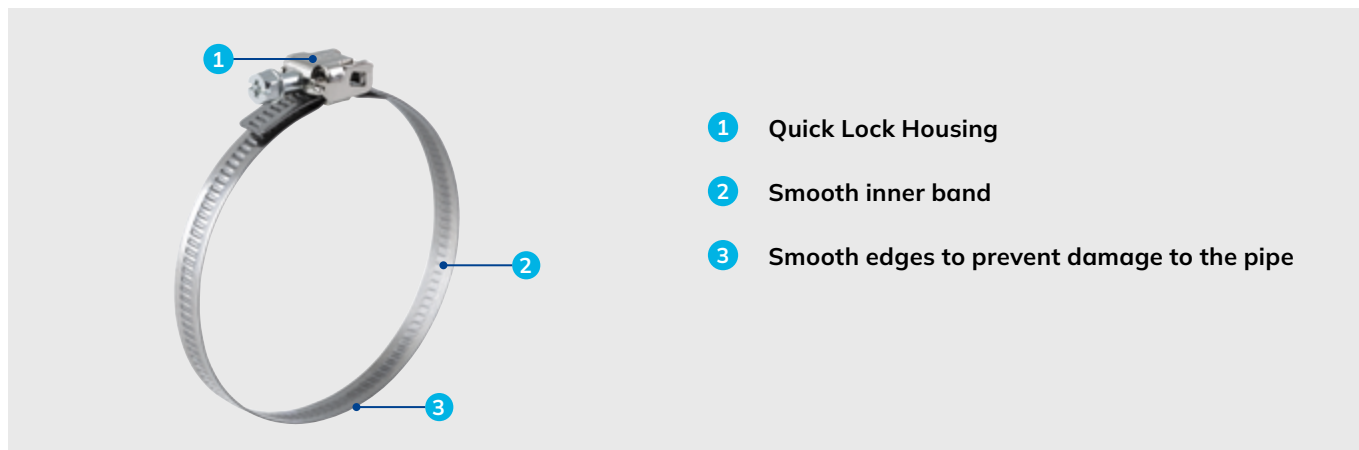
Name structure  
clamp band

## Table of torques

| NORMACLAMP® TORRO® |            |                     |         |     |
|--------------------|------------|---------------------|---------|-----|
| Band width (mm)    | Material   | Diameters           | TT      | FRT |
| 7.5                | W2, W3     | all diameters       | 1.5     | -   |
| 9                  | W1         | 8-12 mm             | 2.5+0.5 | 1.2 |
|                    |            | all other diameters | 3+0.5   | 1.2 |
|                    | W2         | 10-16 mm            | 2+0.5   | 0.7 |
|                    |            | all other diameters | 3+0.5   | 0.7 |
|                    | W3, W4, W5 | 10-16 mm            | 2+0.5   | 0.7 |
|                    |            | all other diameters | 3+0.5   | 0.7 |
| 12                 | W1         | all diameters       | 5+0.5   | 1.2 |
|                    | W2, W3     | all diameters       | 5+0.5   | 1   |
|                    | W4, W5     | all diameters       | 5+0.5   | 1   |

TT = Tightening Torque  
FRT = Free Running Torque





## Quick locking clamp

NORMACLAMP® Quick Lock 9 mm is manufactured from a continuously threaded band with smooth edges to prevent damage to the pipe. The Quick Lock housing allows easy

and quick application, as the band can be adjusted to the right diameter of the pipe, before securing the lock with the screw. Band thickness 0.6 mm for band width 9 mm.

### Advantages at a glance

- ✓ Easy and quick application
- ✓ Safe joint with the hose
- ✓ Flexibility
- ✓ Clamping range from 25-40 up to 60-1,300 mm

### Applications

- Water industry
- Air conditioning
- Construction
- Sanitary

### Materials

| W1 | W2 (B)* | W3 | W4 | W5 |
|----|---------|----|----|----|
|    | x       |    | x  |    |

\* W2 (B): Band in stainless steel (W3)  
Screw and housing in galvanized steel (W1)  
W2 (B) is a combination of W1 and W3 materials

### Torques

| Band width | Tightening torque | Tightening speed |
|------------|-------------------|------------------|
| 9          | 2.5+0.5 Nm        | Max. 50 RPM      |



## QUICK LOCK 9 MM

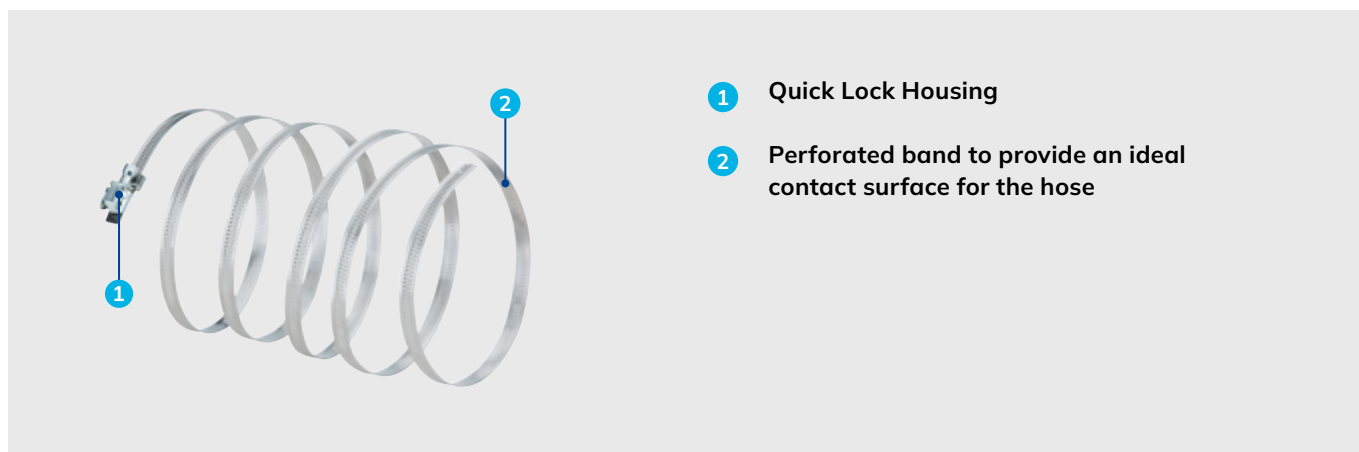
### Technical data & Ordering information

| NORMACLAMP® Quick Lock 9 mm |                     |                 |                  |                       |                   |
|-----------------------------|---------------------|-----------------|------------------|-----------------------|-------------------|
| Width                       | Designation         | Clamping ranges |                  | W2 (B)<br>Product No. | W4<br>Product No. |
|                             |                     | (mm)            | (inches)         |                       |                   |
| 9                           | Quick Lock 25-45/9  | 25-45           | 1-1 3/4"         | 0815 6120 045         |                   |
|                             | Quick Lock 40-60/9  | 40-60           | 1 9/16-2 3/8"    | 0815 6120 060         |                   |
|                             | Quick Lock 60-90/9  | 60-90           | 2 3/8-3 9/16"    | 0815 6120 090         |                   |
|                             | Quick Lock 60-110/9 | 60-110          | 2 3/8-4 5/16"    | 0815 6120 110         | 0815 6130 110     |
|                             | Quick Lock 60-135/9 | 60-135          | 2 3/8-5 5/16"    | 0815 6120 135         | 0815 6130 135     |
|                             | Quick Lock 60-145/9 | 60-145          | 2 3/8-5 11/16"   | 0815 6120 145         | 0815 6130 145     |
|                             | Quick Lock 60-170/9 | 60-170          | 2 3/8-6 11/16"   |                       | 0815 6130 170     |
|                             | Quick Lock 60-175/9 | 60-175          | 2 3/8-6 7/8"     | 0815 6120 175         |                   |
|                             | Quick Lock 60-215/9 | 60-215          | 2 3/8-8 7/16"    | 0815 6120 215         | 0815 6130 215     |
|                             | Quick Lock 60-270/9 | 60-270          | 2 3/8-10 5/8"    | 0815 6120 270         | 0815 6130 270     |
|                             | Quick Lock 60-325/9 | 60-325          | 2 3/8-12 13/16"  | 0815 6120 325         | 0815 6130 325     |
|                             | Quick Lock 60-380/9 | 60-380          | 2 3/8- 14 15/16" | 0815 6120 380         | 0815 6130 380     |
|                             | Quick Lock 60-425/9 | 60-425          | 2 3/8-16 3/4"    | 0815 6120 425         | 0815 6130 425     |
|                             | Quick Lock 60-525/9 | 60-525          | 2 3/8-20 11/16"  | 0815 6120 525         | 0815 6130 525     |
|                             | Quick Lock 60-660/9 | 60-660          | 2 3/8-26"        | 0815 6120 660         | 0815 6130 660     |

Additional diameters available on request



Refer to page 71



- 1 Quick Lock Housing
- 2 Perforated band to provide an ideal contact surface for the hose

## The clamp for large hoses

NORMACLAMP® Quick Lock 12 mm is designed for quick-lock tightening and releasing of large diameter hoses and supplied in a perforated band, to provide an ideal contact surface for the hose. This clamp is the ideal solution for larger hose diameters over 100 mm. Band thickness 0.7 mm for band width 12 mm assures a very Flexible clamp.

### Advantages at a glance

- ✓ The quick-lock housing eases the assembly of the clamp
- ✓ Safe joint with the hose
- ✓ Flexibility
- ✓ Wide clamping range

### Applications

- Water industry
- Air conditioning
- Construction
- Sanitary

### Materials

| W1 | W2 (B)* | W3 | W4 | W5 |
|----|---------|----|----|----|
|    | x       |    |    |    |

\* W2 (B): Band in stainless steel (W3)  
Screw and housing in galvanized steel (W1)  
W2 (B) is a combination of W1 and W3 materials

### Technical data & Ordering information

| NORMACLAMP® Quick Lock 12 mm |                      |                 |             |                       |
|------------------------------|----------------------|-----------------|-------------|-----------------------|
| Width                        | Designation          | Clamping ranges |             | W2 (B)<br>Product No. |
|                              |                      | (mm)            | (inches)    |                       |
| 12                           | Quick Lock 50-110/12 | 50-110          | 2-4 5/16"   | 0815 6020 080         |
|                              | Quick Lock 50-130/12 | 50-130          | 2-5 1/8"    | 0815 6020 090         |
|                              | Quick Lock 50-145/12 | 50-145          | 2-5 11/16"  | 0815 6020 098         |
|                              | Quick Lock 50-165/12 | 50-165          | 2-6 1/2"    | 0815 6020 108         |
|                              | Quick Lock 50-175/12 | 50-175          | 2-6 7/8"    | 0815 6020 113         |
|                              | Quick Lock 50-215/12 | 50-215          | 2-8 7/16"   | 0815 6020 133         |
|                              | Quick Lock 50-280/12 | 50-280          | 2-11"       | 0815 6020 165         |
|                              | Quick Lock 50-325/12 | 50-325          | 2-12 13/16" | 0815 6020 188         |
|                              | Quick Lock 50-370/12 | 50-370          | 2-14 9/16"  | 0815 6020 210         |
|                              | Quick Lock 50-425/12 | 50-425          | 2-16 3/4"   | 0815 6020 238         |
|                              | Quick Lock 60-525/12 | 60-525          | 2-20 11/16" | 0815 6020 293         |
|                              | Quick Lock 70-625/12 | 70-625          | 2-24 5/8"   | 0815 6020 348         |



Refer to page 71



- 1 Bolt**
  - new specially designed bolt with integrated spacer and improved performance
  - the W5 version has a socket head cap bolt
- 2 Reinforced band loops**
  - ability to withstand much higher torques
- 3 Mechanically locked closure**
  - no welding spots and no contact corrosion
- 4 Bridge**
  - hose protection
- 5 Robust band with rounded edges**
  - prevents injuries and damage to hoses
- 6 Hollow trunnions**
  - reduces the tensile forces on the bolt and the mechanical lock

## Heavy-duty clamps for multiple applications

NORMACLAMP® GBS M is designed primarily for use in applications where hose clamps must meet stringent requirements. In particular if suction and pressure hoses – complete with plastic or steel inserts and high shore hardness values – are to be connected and attached. They are particularly suitable for use on commercial and special vehicles. NORMACLAMP® GBS M clamps' ability to withstand exceptionally high levels of band tensile force is an outstanding feature. They are also extremely easy to install, whether you're using manual, pneumatic or electrical standard tools.



### Advantages at a glance

- ✓ Failure torques improved by a factor of two
- ✓ Band tensile force levels improved by a factor of three

### Applications

- Machine building
- Chemical industry
- Irrigation systems
- Ship manufacturing
- Railway industry
- Agricultural machines
- Building machines
- Engine manufacturing
- Pump and filter
- Mining Industry

### Materials

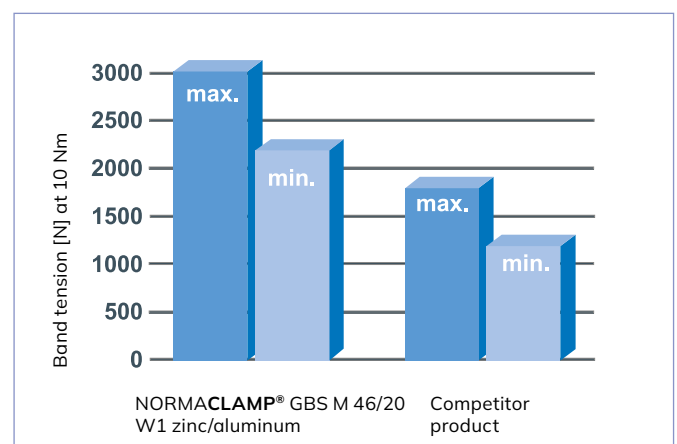
| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
| x  | x  |    | x  | x  |

| Material | Corrosion resistance in salt spray testing |
|----------|--------------------------------------------|
| W1       | Min. 72 h                                  |
| W2       | Min. 72 h                                  |
| W4       | Min. 240 h                                 |
| W5       | Min. 400 h                                 |

| NORMACLAMP® GBS M |                         |     |     |     |    |    |
|-------------------|-------------------------|-----|-----|-----|----|----|
| Band width        | Material thickness (mm) |     |     |     |    |    |
|                   | W1                      | W2  | W4  | W5  | M  | SW |
| 18                | 0.8                     | 0.6 | 0.6 | 0.6 | 6  | 8  |
| 20                | 1.0                     | 0.8 | 0.8 | 0.8 | 7  | 10 |
| 25                | 1.0                     | 1.0 | 1.0 | 1.0 | 8  | 13 |
| 30                | 1.3                     | 1.0 | 1.0 | 1.0 | 10 | 17 |

### Band tensile force

Numerous test results underline the technical superiority of NORMACLAMP® GBS M products over their competitors':



## Table of torques

| NORMACLAMP® GBS M |                             |    |    |    |                                  |
|-------------------|-----------------------------|----|----|----|----------------------------------|
| Band width        | Failure torque (minimum) Nm |    |    |    | Recommended tightening torque Nm |
|                   | W1                          | W2 | W4 | W5 |                                  |
| 18                | 15                          | 15 | 15 | 15 | 8                                |
| 20                | 25                          | 20 | 20 | 20 | 10                               |
| 25                | 35                          | 30 | 30 | 30 | 20                               |
| 30                | 50                          | 45 | 45 | 45 | 25                               |

| NORMACLAMP® GBS M Rubber Insert |                             |    |                                  |
|---------------------------------|-----------------------------|----|----------------------------------|
| Band width                      | Failure torque (minimum) Nm |    | Recommended tightening torque Nm |
|                                 | W1                          | W2 |                                  |
| 18                              | 10                          | 10 | 6                                |
| 20                              | 15                          | 15 | 8                                |
| 25                              | 25                          | 25 | 18                               |
| 30                              | 40                          | 40 | 22                               |

Please note: the recommended tightening speed should not exceed 250 rpm

## Technical data & Ordering information

| NORMACLAMP® GBS M Hollow Trunnion |                     |                 |                   |                   |                   |                   |                     |
|-----------------------------------|---------------------|-----------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| Width                             | Designation         | Clamping ranges |                   | W1<br>Product No. | W2<br>Product No. | W4<br>Product No. | W5**<br>Product No. |
|                                   |                     | (mm)            | (inches)          |                   |                   |                   |                     |
| 18                                | GBS M 17-19/18 Sk*  | 17-19           | 11/16-3/4"        | 0591 7181 018     | 0591 7182 018     | 0591 7184 018     | 0591 7185 018       |
|                                   | GBS M 19-21/18 Sk*  | 19-21           | 3/4-13/16"        | 0591 7181 020     | 0591 7182 020     | 0591 7184 020     | 0591 7185 020       |
|                                   | GBS M 21-23/18 Sk*  | 21-23           | 13/16-15/16"      | 0591 7181 022     | 0591 7182 022     | 0591 7184 022     | 0591 7185 022       |
|                                   | GBS M 23-25/18 Sk*  | 23-25           | 15/16-1"          | 0591 7181 024     | 0591 7182 024     | 0591 7184 024     | 0591 7185 024       |
|                                   | GBS M 25-27/18 Sk   | 25-27           | 1-1 1/16"         | 0591 7181 026     | 0591 7182 026     | 0591 7184 026     | 0591 7185 026       |
|                                   | GBS M 27-29/18 Sk   | 27-29           | 1 1/16-1 1/8"     | 0591 7181 028     | 0591 7182 028     | 0591 7184 028     | 0591 7185 028       |
|                                   | GBS M 29-31/18 Sk   | 29-31           | 1 1/8-1 1/4"      | 0591 7181 030     | 0591 7182 030     | 0591 7184 030     | 0591 7185 030       |
|                                   | GBS M 31-34/18 Sk   | 31-34           | 1 1/4-1 5/16"     | 0591 7181 033     | 0591 7182 033     | 0591 7184 033     | 0591 7185 033       |
|                                   | GBS M 34-37/18 Sk   | 34-37           | 1 5/16-1 7/16"    | 0591 7181 036     | 0591 7182 036     | 0591 7184 036     | 0591 7185 036       |
|                                   | GBS M 37-40/18 Sk   | 37-40           | 1 7/16-1 9/16"    | 0591 7181 039     | 0591 7182 039     | 0591 7184 039     | 0591 7185 039       |
| 20                                | GBS M 40-43/18 Sk   | 40-43           | 1 9/16-1 11/16"   | 0591 7181 042     | 0591 7182 042     | 0591 7184 042     | 0591 7185 042       |
|                                   | GBS M 43-47/20 Sk   | 43-47           | 1 11/16-1 7/8"    | 0591 7201 045     | 0591 7202 045     | 0591 7204 045     | 0591 7205 045       |
|                                   | GBS M 47-51/20 Sk   | 47-51           | 1 7/8-2"          | 0591 7201 049     | 0591 7202 049     | 0591 7204 049     | 0591 7205 049       |
|                                   | GBS M 51-55/20 Sk   | 51-55           | 2-2 3/16"         | 0591 7201 053     | 0591 7202 053     | 0591 7204 053     | 0591 7205 053       |
|                                   | GBS M 55-59/20 Sk   | 55-59           | 2 3/16-2 5/16"    | 0591 7201 057     | 0591 7202 057     | 0591 7204 057     | 0591 7205 057       |
|                                   | GBS M 59-63/20 Sk   | 59-63           | 2 5/16-2 1/2"     | 0591 7201 061     | 0591 7202 061     | 0591 7204 061     | 0591 7205 061       |
| 25                                | GBS M 63-68/20 Sk   | 63-68           | 2 1/2-2 11/16"    | 0591 7201 066     | 0591 7202 066     | 0591 7204 066     | 0591 7205 066       |
|                                   | GBS M 68-73/25 Sk   | 68-73           | 2 11/16-2 7/8"    | 0591 7251 071     | 0591 7252 071     | 0591 7254 071     | 0591 7255 071       |
|                                   | GBS M 73-79/25 Sk   | 73-79           | 2 7/8-3 1/8"      | 0591 7251 076     | 0591 7252 076     | 0591 7254 076     | 0591 7255 076       |
|                                   | GBS M 79-85/25 Sk   | 79-85           | 3 1/8-3 3/8"      | 0591 7251 082     | 0591 7252 082     | 0591 7254 082     | 0591 7255 082       |
|                                   | GBS M 85-91/25 Sk   | 85-91           | 3 3/8-3 9/16"     | 0591 7251 088     | 0591 7252 088     | 0591 7254 088     | 0591 7255 088       |
|                                   | GBS M 91-97/25 Sk   | 91-97           | 3 9/16-3 13/16"   | 0591 7251 094     | 0591 7252 094     | 0591 7254 094     | 0591 7255 094       |
|                                   | GBS M 97-104/25 Sk  | 97-104          | 3 13/16-4 1/6"    | 0591 7251 101     | 0591 7252 101     | 0591 7254 101     | 0591 7255 101       |
|                                   | GBS M 104-112/25 Sk | 104-112         | 4 1/16-4 7/16"    | 0591 7251 108     | 0591 7252 108     | 0591 7254 108     | 0591 7255 108       |
| 30                                | GBS M 112-121/25 Sk | 112-121         | 4 7/16-4 3/4"     | 0591 7251 117     | 0591 7252 117     | 0591 7254 117     | 0591 7255 117       |
|                                   | GBS M 121-130/25 Sk | 121-130         | 4 3/4-5 1/8"      | 0591 7251 126     | 0591 7252 126     | 0591 7254 126     | 0591 7255 126       |
|                                   | GBS M 130-140/30 Sk | 130-140         | 5 1/8-5 1/2"      | 0591 7301 135     | 0591 7302 135     | 0591 7304 135     | 0591 7305 135       |
|                                   | GBS M 140-150/30 Sk | 140-150         | 5 1/2-5 15/16"    | 0591 7301 145     | 0591 7302 145     | 0591 7304 145     | 0591 7305 145       |
|                                   | GBS M 150-162/30 Sk | 150-162         | 5 15/16-6 3/8"    | 0591 7301 156     | 0591 7302 156     | 0591 7304 156     | 0591 7305 156       |
|                                   | GBS M 162-174/30 Sk | 162-174         | 6 3/8-6 7/8"      | 0591 7301 168     | 0591 7302 168     | 0591 7304 168     | 0591 7305 168       |
|                                   | GBS M 174-187/30 Sk | 174-187         | 6 7/8-7 3/8"      | 0591 7301 181     | 0591 7302 181     | 0591 7304 181     | 0591 7305 181       |
|                                   | GBS M 187-200/30 Sk | 187-200         | 7 3/8-7 7/8"      | 0591 7301 194     | 0591 7302 194     | 0591 7304 194     | 0591 7305 194       |
|                                   | GBS M 200-213/30 Sk | 200-213         | 7 7/8-8 3/8"      | 0591 7301 207     | 0591 7302 207     | 0591 7304 207     | 0591 7305 207       |
|                                   | GBS M 213-226/30 Sk | 213-226         | 8 3/8-8 7/8"      | 0591 7301 220     | 0591 7302 220     | 0591 7304 220     | 0591 7305 220       |
|                                   | GBS M 226-239/30 Sk | 226-239         | 8 7/8-9 7/16"     | 0591 7301 233     | 0591 7302 233     | 0591 7304 233     | 0591 7305 233       |
|                                   | GBS M 239-252/30 Sk | 239-252         | 9 7/16-9 15/16"   | 0591 7301 246     | 0591 7302 246     | 0591 7304 246     | 0591 7305 246       |
|                                   | GBS M 252-265/30 Sk | 252-265         | 9 15/16-10 7/16"  | 0591 7301 259     | 0591 7302 259     | 0591 7304 259     | 0591 7305 259       |
|                                   | GBS M 265-278/30 Sk | 265-278         | 10 7/16-10 15/16" | 0591 7301 272     | 0591 7302 272     | 0591 7304 272     | 0591 7305 272       |
|                                   | GBS M 279-291/30 Sk | 279-291         | 11-11 7/16"       | 0591 7301 285     | 0591 7302 285     | 0591 7304 285     | 0591 7305 285       |
|                                   | GBS M 292-304/30 Sk | 292-304         | 11 1/2-12"        | 0591 7301 298     | 0591 7302 298     | 0591 7304 298     | 0591 7305 298       |

\* These diameters are full trunnions and do not feature a mechanically locked closure, they are spot-welded.

\*\* ISK bolt for W5 material

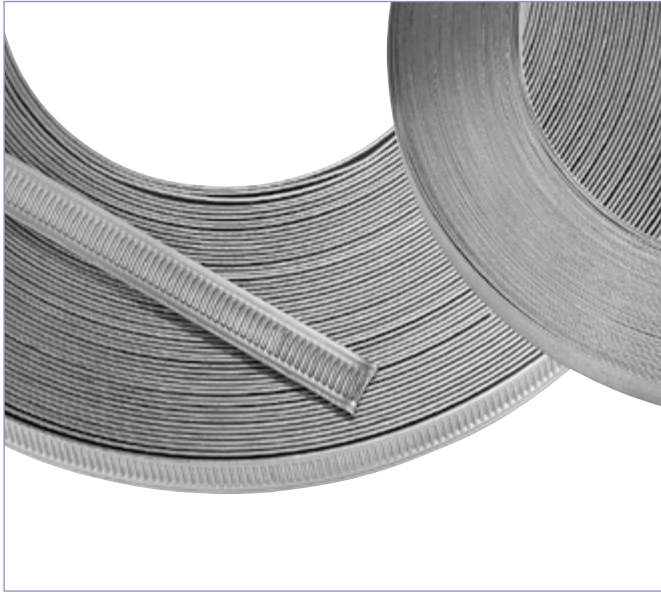
# NORMAFIX® – Retaining Products

## Versatile products for a whole host of applications

The NORMAFIX® range of clamps, clips and systems for retaining pipes, cables, cable harnesses and hoses are ready for action wherever they're needed – walls, ceilings or car bodies.







Continuous band available in smooth version or with thread stamping throughout

4 different closure types to suit a huge variety of applications



## Continuous band clamping system

Consisting of a continuous band, the NORMAFIX® NORMETTA® system is able to adapt itself to the shape and size of various objects. 4 different types of closure are available to choose from. The system is particularly suitable for carrying out retaining and repair work under difficult and extreme conditions.

## Advantages at a glance

- ✓ Flexible and versatile
- ✓ Can be installed under difficult conditions

## Materials

| W1 | W2 | W3 | W4 | W5 |
|----|----|----|----|----|
|    | x  | x  | x  |    |

## Applications

- Irrigation systems
- Railway industry
- Building machines
- Pump and filter
- Retaining applications; sealing pipes during repair work
- Attaching signs and containers
- Binding hoses



## Product and closure types

The continuous band is available in three different versions: smooth band, stamped band or perforated band. Depending on the version, you will have a different choice of band widths, material grades and closure types.

## Smooth Band



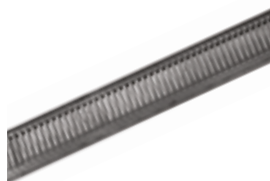
To be used with the buckles, NB-D W4 and NB-H W4.

| NORMAFIX® NORMETTA® Smooth Band |                |                                 |            |                |  |
|---------------------------------|----------------|---------------------------------|------------|----------------|--|
| Width (mm)                      | Thickness (mm) | Designation                     | Length (m) | W4 Product No. |  |
| 9                               | 0.5            | NORMETTA® Smooth Band 30m/9 W4  | 30         | 0560 8554 009  |  |
| 13                              | 0.7            | NORMETTA® Smooth Band 30m/13 W4 | 30         | 0560 8553 013  |  |
| 16                              | 0.7            | NORMETTA® Smooth Band 30m/16 W4 | 30         | 0560 8553 016  |  |
| 19                              | 0.7            | NORMETTA® Smooth Band 30m/19 W4 | 30         | 0560 8553 019  |  |



Refer to page 71

## Stamped Band



To be used with the buckles NB-G W3.

| NORMAFIX® NORMETTA® Stamped Band |                |                                  |            |                            |                |
|----------------------------------|----------------|----------------------------------|------------|----------------------------|----------------|
| Width (mm)                       | Thickness (mm) | Designation                      | Length (m) | Resistance to traction (N) | W3 Product No. |
| 12                               | 0.8            | NORMETTA® Stamped Band 30M/12 W3 | 30         | 2,600                      | 0560 8566 003  |

## Perforated Band



To be used with buckles NB-K W2.

| NORMAFIX® NORMETTA® Perforated Band |                |                                     |            |                            |                |                |
|-------------------------------------|----------------|-------------------------------------|------------|----------------------------|----------------|----------------|
| Width (mm)                          | Thickness (mm) | Designation                         | Length (m) | Resistance to traction (N) | W2 Product No. | W4 Product No. |
| 8                                   | 0.6            | NORMETTA® Perforated Band 25m/8 W2  | 25         | 790                        | 0817 7020 001  |                |
|                                     | 0.6            | NORMETTA® Perforated Band 25m/8 W4  | 25         | 790                        |                | 0817 7022 001  |
| 13                                  | 0.6            | NORMETTA® Perforated Band 25m/13 W4 | 25         | 850                        |                | 0817 7022 002  |
| 14                                  | 0.6            | NORMETTA® Perforated Band 25m/14 W2 | 25         | 850                        | 0817 7020 002  |                |

**NB-D****Closure type NB-D**

Suitable for attaching signs and containers to pipes and hoses as well as binding hoses.

For bands: 9, 13, 16, 19 mm

Required tools: Clamping and cutting tool; hammer

| NORMAFIX® NB-D      |             |                   |
|---------------------|-------------|-------------------|
| For band width (mm) | Designation | W4<br>Product No. |
| 9                   | NB-D/9      | 0560 8550 009     |
| 13                  | NB-D/13     | 0560 8550 013     |
| 16                  | NB-D/16     | 0560 8550 016     |
| 19                  | NB-D/19     | 0560 8550 019     |

**NB-G****Closure type NB-G**

Suitable for applications with cramped installation conditions.

Can be re-used.

For stamped bands.

Required tools: Screwdriver or SW7 socket wrench and plate shears

| NORMAFIX® NB-G      |             |                   |
|---------------------|-------------|-------------------|
| For band width (mm) | Designation | W3<br>Product No. |
| 12                  | NB-G/12     | 0560 8565 003     |

## NB-H

**Closure type NB-H**

An adjustable quick-release closure that enables fast and easy installation and removal.  
Can be re-used.

For bands: 16, 19 mm

Required tools: Screwdriver and plate shears

| NORMAFIX® NB-H      |                       |             |                |
|---------------------|-----------------------|-------------|----------------|
| For band width (mm) | Maximum diameter (mm) | Designation | W1 Product No. |
| 16 / 19             | 124                   | NB-H/124    | 0560 8558 124  |
|                     | 400                   | NB-H/400    | 0560 8558 400  |
|                     | 800                   | NB-H/800    | 0560 8558 800  |

## NB-K

**Closure type NB-K**

Suitable for fixing suspended ventilation tubes.

For bands: 8, 13, 14 mm

Required tools: Screwdriver

| NORMAFIX® NB-K      |             |                |                |
|---------------------|-------------|----------------|----------------|
| For band width (mm) | Designation | W2 Product No. | W4 Product No. |
| 8                   | NB-K/8      | 0817 7019 003  | 0817 7021 003  |
| 13                  | NB-K/13     |                | 0817 7021 004  |
| 14                  | NB-K/14     | 0817 7019 004  |                |

**Smooth round edges**

- easier to handle and safer to install

**Available colors**

- black and white

**“Carbon Black” added in black cable tie flange**

- increased resistance to UV rays
- suitable for outdoor use

## Quick and safe securing of cables in material PA 6.6

NORMAFIX® Cable Tie for securing cables in electrical installations, industrial wiring, automotive, etc. Made of polyamide 6.6. Resistant to extreme temperatures and numerous external agents. Quick and safe assembly. The black cable tie offers excellent resistance to UV rays thanks to added “carbon black.”

**Advantages at a glance**

- ✓ Made of polyamide 6.6 for optimum resistance to extreme temperatures, bases, oils, greases, etc.
- ✓ Bent rounded tip allows easier insertion through the head of the Cable Ties
- ✓ Low-friction material coefficient allows a faster installation

**Applications**

- Electrical installations
- Industrial cabling
- Automotive cabling
- Marine cabling
- Panel building
- Special applications

**Materials****Polyamide 6.6: Characteristics of raw material**

|                              |                                 |
|------------------------------|---------------------------------|
| Working temperature:         | -45 °C to 85 °C                 |
| Tightening temperature:      | -10 °C to 60 °C                 |
| Max admissible point:        | 120 °C*                         |
| Melting temperature:         | 256 °C                          |
| Limiting Oxygen Index (LOI): | 27 %                            |
| Recovery of moisture:        | 2.7 % to 50 % relative humidity |

Halogen free: Evaluated according to EN 50146.

Flame retardancy according to UL 94-V2

**Resistance to external agents**

- Excellent resistance to aromatic solvents, bases, oils, fat, petroleum products
- Maintain limited contact with acid
- Not resistant to phenol and chlorinated solvents
- Resistance to UV (black colored Cable Ties)\*\*

**Information****EC directives**

The material used to produce our Cable Ties complies with the following EC directives:

- 2000/53/EC (VHU)
- 2002/65/UE (RoHS)
- 2002/96/EC (DEEE)
- 2006/95/EC

\* (for a short time)

\*\* The black Cable Ties are loaded with carbon black. Therefore they possess UV resistance according to standard ISO QUV-B 4892 (150 hours), equivalent to 3 years of exposure to sunlight. They are also particularly recommended for external applications.



## CABLE TIES

### Technical data & Ordering information

| NORMAFIX® Cable Ties |                        |             |                       |                              |                   |                   |
|----------------------|------------------------|-------------|-----------------------|------------------------------|-------------------|-------------------|
| Width                | Designation            | Length (mm) | Maximum diameter (mm) | Resistance to traction (kgs) | White Product No. | Black Product No. |
| 2.5                  | Cable Tie 2.5 x 98     | 98          | 21                    | 8                            | 0860 0110 201     | 0860 0210 201     |
| 2.6                  | Cable Tie 2.6 x 160    | 160         | 40                    | 8                            | 0860 0110 302     | 0860 0210 302     |
| 3.5                  | Cable Tie 3.5 x 140    | 140         | 35                    | 13                           | 0860 0110 401     | 0860 0210 401     |
|                      | Cable Tie 3.5 x 200    | 200         | 50                    | 13                           | 0860 0110 402     | 0860 0210 402     |
|                      | Cable Tie 3.5 x 290    | 290         | 80                    | 13                           | 0860 0110 403     | 0860 0210 403     |
|                      | Cable Tie 3.5 x 370    | 370         | 103                   | 13                           | 0860 0110 404     | 0860 0210 404     |
| 4.5                  | Cable Tie 4.5 x 120    | 120         | 24                    | 20                           | 0860 0110 501     | 0860 0210 501     |
|                      | Cable Tie 4.5 x 160    | 160         | 40                    | 20                           | 0860 0110 502     | 0860 0210 502     |
|                      | Cable Tie 4.5 x 200    | 200         | 50                    | 22                           | 0860 0110 602     | 0860 0210 602     |
| 4.8                  | Cable Tie 4.8 x 178    | 178         | 45                    | 22                           | 0860 0110 601     | 0860 0210 601     |
|                      | Cable Tie 4.8 x 250    | 250         | 68                    | 22                           | 0860 0110 603     | 0860 0210 603     |
| 4.5                  | Cable Tie 4.5 x 290    | 290         | 79                    | 22                           | 0860 0110 604     | 0860 0210 604     |
|                      | Cable Tie 4.5 x 360    | 360         | 103                   | 22                           | 0860 0110 605     | 0860 0210 605     |
| 4.8                  | Cable Tie 4.8 x 390    | 390         | 106                   | 22                           | 0860 0110 606     | 0860 0210 606     |
| 4.5                  | Cable Tie 4.5 x 430    | 430         | 115                   | 22                           | 0860 0110 607     | 0860 0210 607     |
| 7.8                  | Cable Tie 7.8 x 180    | 180         | 45                    | 55                           | 0860 0110 702     | 0860 0210 702     |
|                      | Cable Tie 7.8 x 240    | 240         | 63                    | 55                           | 0860 0110 703     | 0860 0210 703     |
|                      | Cable Tie 7.8 x 300    | 300         | 80                    | 55                           | 0860 0110 704     | 0860 0210 704     |
| 7.5                  | Cable Tie 7.5 x 365    | 365         | 100                   | 55                           | 0860 0110 705     | 0860 0210 705     |
|                      | Cable Tie 7.5 x 450    | 450         | 130                   | 55                           | 0860 0110 706     | 0860 0210 706     |
|                      | Cable Tie 7.5 x 540    | 540         | 158                   | 55                           | 0860 0110 707     | 0860 0210 707     |
|                      | Cable Tie 7.5 x 750    | 750         | 200                   | 55                           | 0860 0110 708     | 0860 0210 708     |
| 9                    | Cable Tie 9 x 780      | 780         | 233                   | 77                           | 0860 0110 801     | 0860 0210 801     |
| 12.5                 | Cable Tie 12.5 x 500   | 500         | 143                   | 110                          | 0860 0110 902     | 0860 0210 902     |
|                      | Cable Tie 12.5 x 1,000 | 1,000       | 302                   | 110                          | 0860 0110 905     | 0860 0210 905     |





# NORMAEXTRA® – Kits and Displays

## A wide range of kits and displays

NORMA® assortments section offers the possibility of having several clamp diameters in one package. All the accessories and the tools mentioned in this chapter are proposed to enable simple and easy installation of the NORMA® products.



## NORMACLAMP® Quick Lock Band-on-roll



| NORMACLAMP® Quick Lock Band-on-roll |                 |             |                    |                |                |
|-------------------------------------|-----------------|-------------|--------------------|----------------|----------------|
| Width (mm)                          | Designation     | Length (mm) | Number of closures | W2 Product No. | W4 Product No. |
| 9                                   | Band-on-roll 3m | 3           | 8                  | 0815 7121 001  | 0815 7131 001  |
|                                     | Band-on-roll 3m | 5           | 8                  | 0815 7121 003  | 0815 7131 003  |
| 12                                  | Band-on-roll 3m | 3           | 6                  | 0815 6007 002  |                |
|                                     | Band-on-roll 5m | 5           | 6                  | 0815 6007 004  |                |

## NORMACLAMP® Quick Lock Band-on-roll dispenser



| NORMACLAMP® Quick Lock Band-on-roll dispenser |                 |             |                |                |
|-----------------------------------------------|-----------------|-------------|----------------|----------------|
| Width (mm)                                    | Designation     | Length (mm) | W2 Product No. | W4 Product No. |
| 9                                             | Band-on-roll 3m | 3           | 0815 5007 015  | 0815 5007 014  |
|                                               | Band-on-roll 5m | 5           | 0815 5007 017  | 0815 5007 016  |

## NORMACLAMP® TORRO® Display



| NORMACLAMP® TORRO® Display |                   |                     |          |                |
|----------------------------|-------------------|---------------------|----------|----------------|
| Width (mm)                 | Designation       | Clamping range (mm) | Quantity | W2 Product No. |
| 7.5                        | TORRO® 8 - 12/7.5 | 8 - 12              | 10       | 0126 9702 010  |
| 9                          | TORRO® 8 - 16/9   | 8 - 16              | 10       |                |
|                            | TORRO® 12 - 22/9  | 12 - 22             | 10       |                |
|                            | TORRO® 16 - 27/9  | 16 - 27             | 10       |                |
|                            | TORRO® 20 - 32/9  | 20 - 32             | 10       |                |
|                            | TORRO® 25 - 40/9  | 25 - 40             | 10       |                |
|                            | TORRO® 32 - 50/9  | 32 - 50             | 10       |                |
|                            | TORRO® 40 - 60/9  | 40 - 60             | 10       |                |
|                            | TORRO® 50 - 70/9  | 50 - 70             | 10       |                |
|                            | TORRO® 60 - 80/9  | 60 - 80             | 10       |                |

## NORMACLAMP® TORRO® Assortment 120



| NORMACLAMP® TORRO® Assortment 120 |                  |                     |          |                |                |
|-----------------------------------|------------------|---------------------|----------|----------------|----------------|
| Width (mm)                        | Designation      | Clamping range (mm) | Quantity | W1 Product No. | W4 Product No. |
| 9                                 | TORRO® 8 - 16 /9 | 8 - 16              | 40       | 0126 5005 012  | 0126 5005 014  |
|                                   | TORRO® 12 - 22/9 | 12 - 22             | 25       |                |                |
|                                   | TORRO® 16 - 27/9 | 16 - 27             | 20       |                |                |
|                                   | TORRO® 20 - 32/9 | 20 - 32             | 15       |                |                |
|                                   | TORRO® 25 - 40/9 | 25 - 40             | 10       |                |                |
|                                   | TORRO® 35 - 50/9 | 35 - 50             | 10       |                |                |
| NA                                | FlexiDriver      | NA                  | 1        |                |                |



Handwriting practice lines consisting of 20 horizontal dotted lines.

NOTES

Handwriting practice lines consisting of 20 horizontal dotted lines.

# NORMA<sup>®</sup> – User Information

## Installation instructions

You can download the assembly instructions for our NORMACONNECT<sup>®</sup> FGR range on our NORMA website: <https://www.norma-connects.com/en/downloads>  
Alternatively, or if you are missing any other information, please don't hesitate to get in touch with us: [norma-connects@normagroup.com](mailto:norma-connects@normagroup.com)



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Benefit from our long-term expertise in the field of joining and fluid handling technology. Here you will learn how to win time, save money and enjoy peace of mind with our products!



**Want to get in touch?**  
**We'd love to connect with you!**

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