

Water and Gas
Utilities

Maintenance
and Repair

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GF Piping Systems

Your global system provider

We are dedicated to designing, manufacturing and marketing piping systems for the safe and secure conveyance of liquids and gases.

We put customers first

- Customers aid in our product development
- We offer customer support and training worldwide
- We measure customer satisfaction

We act fast

- Local presence worldwide
- Superior logistics
- Speed in all details

We do what we say

- Tested quality
- Always reliable

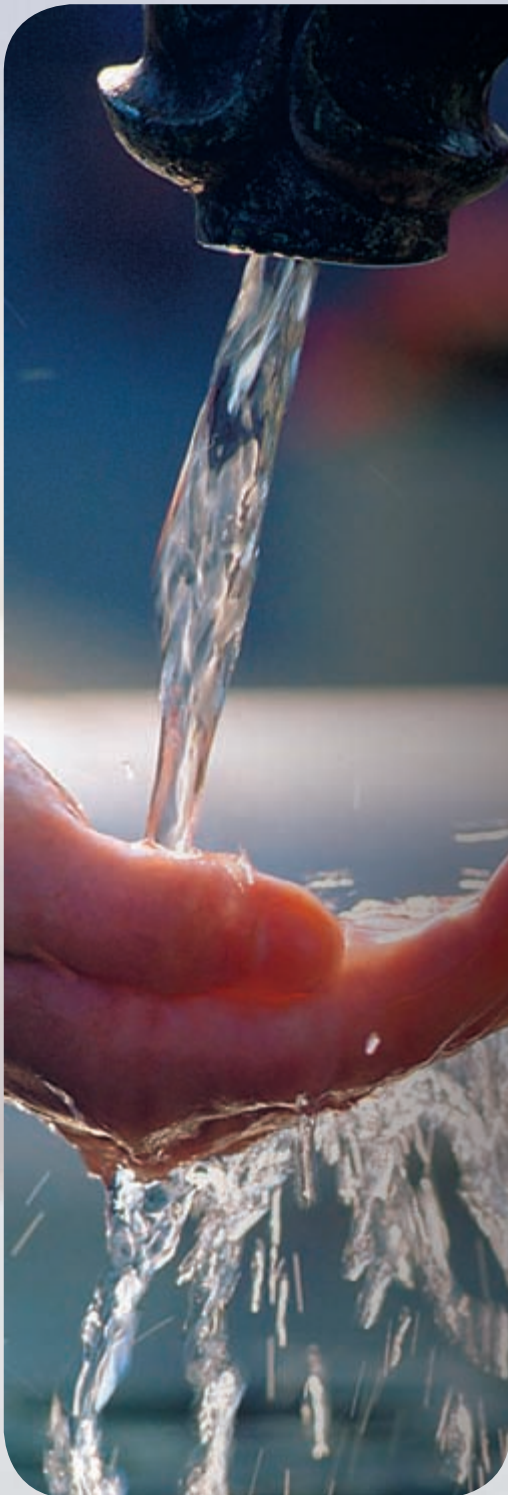
Your competent partner to build, monitor and operate your network

- Always the right solution for water utilities
- Premium quality and performance
- Increased security throughout the system

- Technological expertise
- «One-stop shopping» around the world
- System solutions
- Know-how and experience
- Local support

+GF+

Added Value



Plastics can do more for Water & Gas Utilities

In water and gas distribution, whether for main lines, service lines or hydrants, a safe connection – especially with different materials – is always a primary concern.

GF Piping Systems has the right solution even for your most difficult connections. Our complete system solutions are:

- PE welded distribution systems, butt Fusion and electrofusion
- Mechanical restraint distribution systems for PE, PVC, DCI
- A repair and tapping concept for all types of distribution systems

How to use this brochure



1 Start with Application Environment



2 Select your Application



3 Find your Repair Solution



4 Choose your Repair Solution



5 Add Products



Water and Gas Utilities

Hygienic drinking water, pure in taste, smell and appearance and gas for various purposes such as heating and cooking are fundamental requirements. The demand for a secure and safe supply of these fundamental requirements is increasing worldwide.

For the full spectrum of gas and water supply, GF Piping Systems has a variety of innovative techniques and specialized products designed specifically for the water and gas distribution industry. Our leading know-how and expertise for all water and gas distribution applications helps you finding the right solution.

GF Piping Systems offers a full range of products for maintenance and repair, as well as products for new installations and extension of existing networks.



**Water Treatment
Ship Building
Offshore
Biogas**

1

> For more information please see our application brochures on these topics.

Transport Lines

2

Transport and main lines bring water from the point of source to the point of distribution.

Transmission lines bring gas from production to the gas entry points. Pipelines start at DN300 with pressure > 60 bar.

Distribution Lines

3

Distribution lines in the potable water grid typically range from DN300 (d355) to DN50 (d63).

Distribution lines for gas normally vary between d90 - d225 with pressure from 5-25 bar.

From Source to Point of Use

Water: Source > Treatment > Storage > Transport > Distribution > Point of Use

Gas: High Pressure > Reduction > Transmission > Distribution > Point of Use



Hydrants & Connections

4

Hydrants and connections are the feed lines for fire fighting branches of the transport or distribution lines.

House Connections & Service Lines

5

Service lines bring clean water into the home, passing through the water meter either outside or inside the house.

Service lines d20 - d63 with low pressure <5 bar bring gas to our home.

Building Technology

6

> For more information please see our brochures.



Transport lines from DN300–DN600, for water and gas conveyance, are the main arteries of the water and gas supply system. The medium pressures are generally between 6 and 25 bar, but can increase to higher pressures.

When damaged, these mainlines need to be repaired as soon as possible. A complete city or industrial zone could become crippled without supply of water or gas.

For secure transportation of water and gas, it is essential that pipes, fittings, valves and other components are connected, maintained and repaired safely and reliably, especially in applications where different materials are used.

GF Piping Systems can supply quick and easy solutions, often available from stock or deliverable in a short time from one of our distribution centers. The comprehensive line of products suitable for repair and maintenance includes MULTI/JOINT, Multi/Clamp, Plast/Joint, tailor made ST-Systems, MSA Plus electrofusion machines, butt fusion machines, ELGEF Plus fittings, tools and many more.



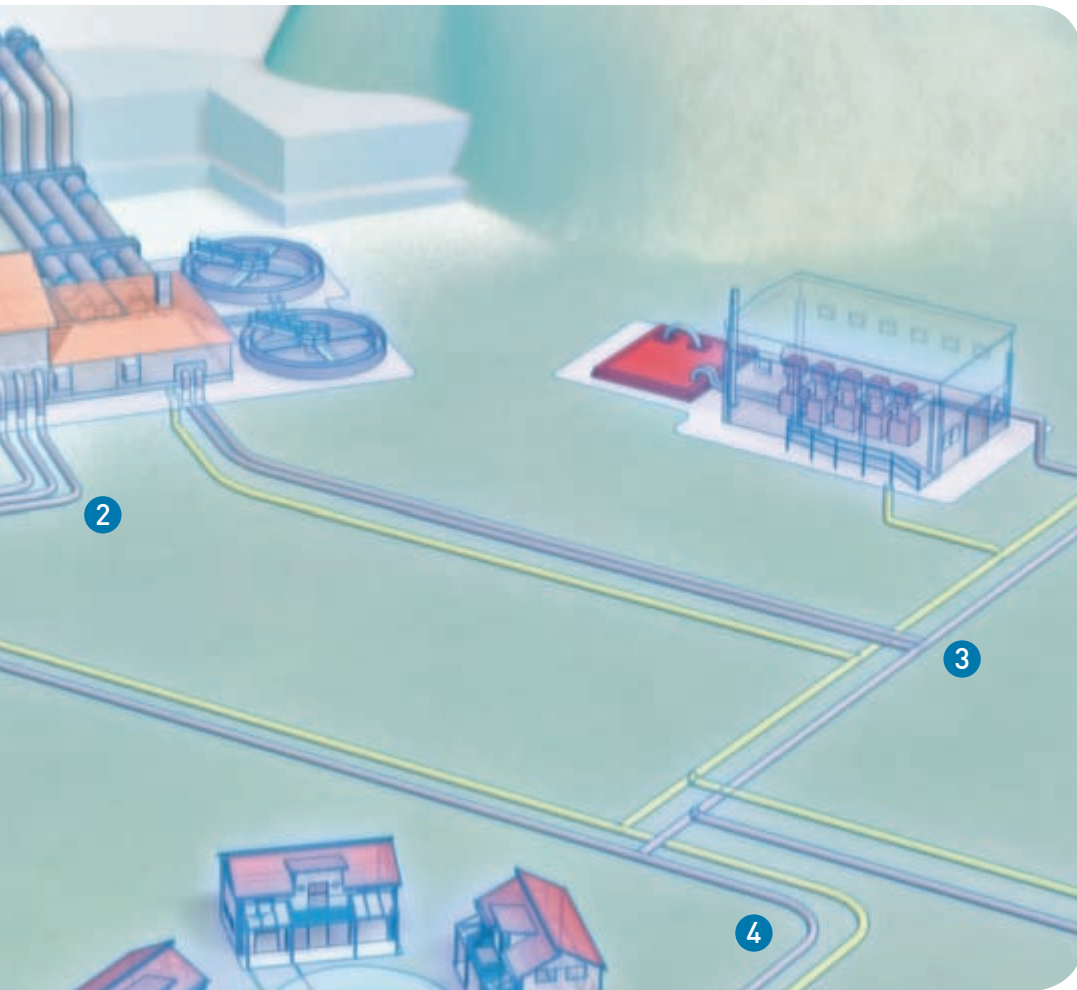
Quick and easy installation of large diameters. Active welding without preheating for diameters up to d630.



MULTI/JOINT XL fittings. Suitable to repair and maintain networks under extreme conditions and a transition for all materials.



Transport Lines



Variety of connection needs. Butt-fused segmented fittings can be customized to meet local requirements.

Tough conditions. Our ST-System is completely reliable and ready to use under challenging conditions.

Transport Lines

+GF+

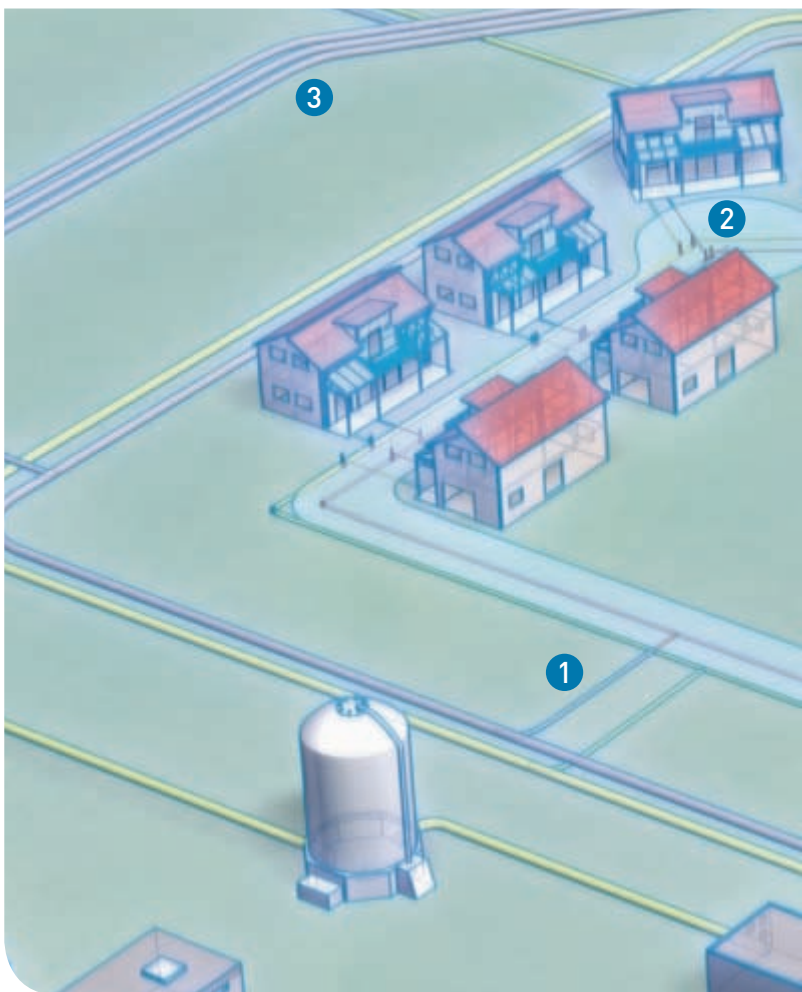


Distribution lines from DN50–DN300, for water and gas conveyance, are the main lines that secure the supply of water and gas to end consumers. The pipes have a design pressure of up to 16 bar, whereas actual working pressures seldom exceed 8 bar.

Once repaired or extended, supply to the end consumers has to be restored as quickly as possible. Fines or claims could be the result of not supplying in time, increasing the costs.

For the secure transport of water and gas, it is essential that pipes, fittings, valves and other components are connected and repaired safely and reliably. Especially in applications where different materials are used.

GF Piping Systems can supply quick and easy solutions, often available from stock from one of our distribution centers. The comprehensive line of products suitable for repair and maintenance includes MULTI/JOINT, Multi/Clamp, Plast/Joint, tailor made ST-Systems, MSA Plus electrofusion machines, butt fusion machines, ELGEF Plus, tools and many more.



Full comprehensive range of necessary tools for pipe preparation and joining.



Repair clamps for emergency repair and extensions. An indispensable instrument in your arsenal.

Distribution Lines



*Distribution
Lines*



Wide-range fittings for reliable transitions. MULTI/JOINT offers end load resistance without the need for thrust blocks.



All solutions in one hand for repairing and extending water and gas distribution lines.

Distribution Lines

+GF+



Fire fighters must rely on a constant supply of water and know that all associated components will work correctly.

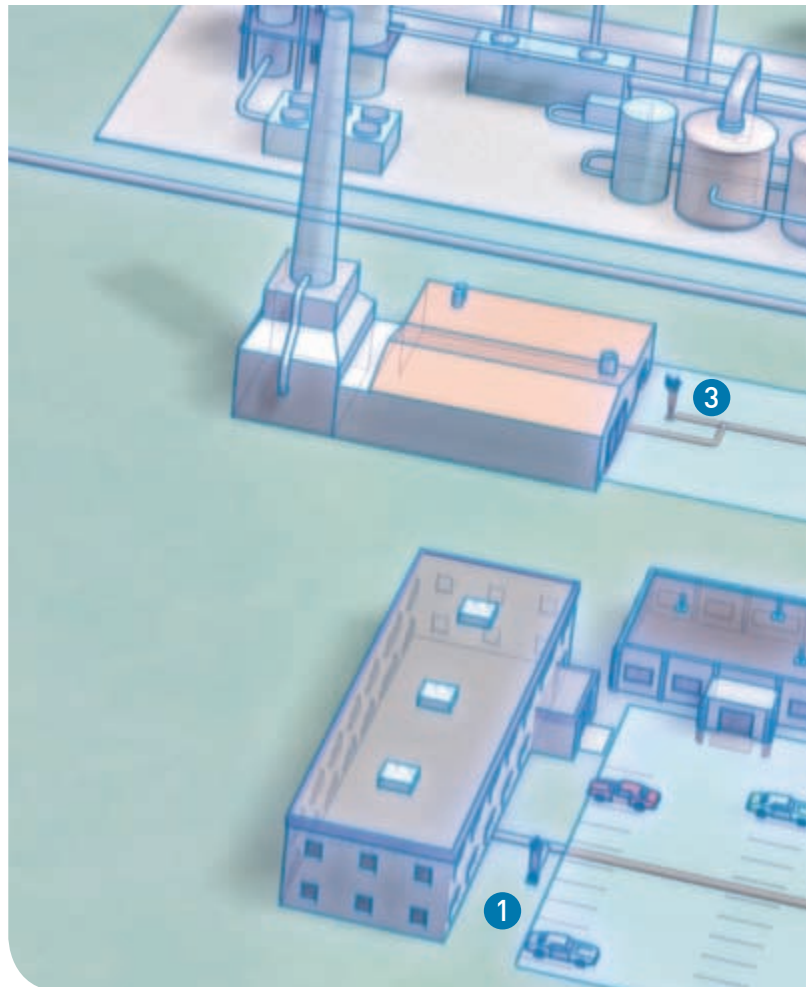
Regardless if the hydrant is built directly in the main line or in a side line, we have the right products.

Universal solutions: for non-plastic pipes, we have the unique MULTI /JOINT couplings on offer.

Solutions for PE pipes: connecting a hydrant to a PE pipe is made particularly easy with our branch fitting.

Even extensions and replacements can easily be done, even under pressure. A hot tap to an existing main line can be made by drilling through a PolyValve connected to a branch saddle, with our W410 drilling device.

Duckfoot bends: whether electrofused or mechanical joints, our sturdy duckfoot bends are the ideal solution for lateral connections. Thanks to the integrated service line outlet, there is no stagnant water in the pipeline.

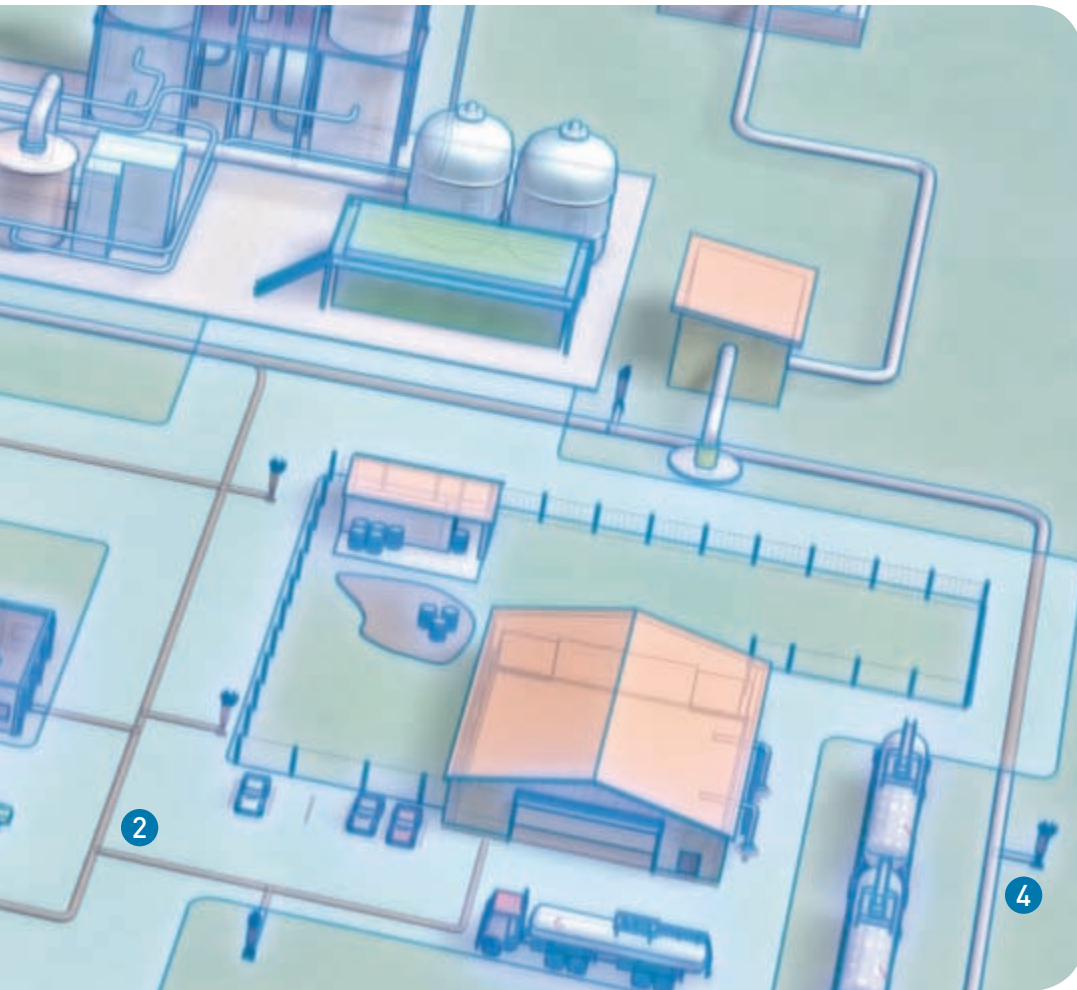


Easy connection to hydrants. Transitions between PE lines and metal hydrants are easy and safe to install.



Light weight PE hydrant for maintenance, repair and extension of existing lines.

Hydrants and Connections



Hydrants and Connections



The new PE hydrant. The innovative PE hydrant can be connected using many different types of connections.



Quick and easy connections with the MULTI/JOINT duckfoot to all pipe materials and hydrants.

Hydrants and Connections

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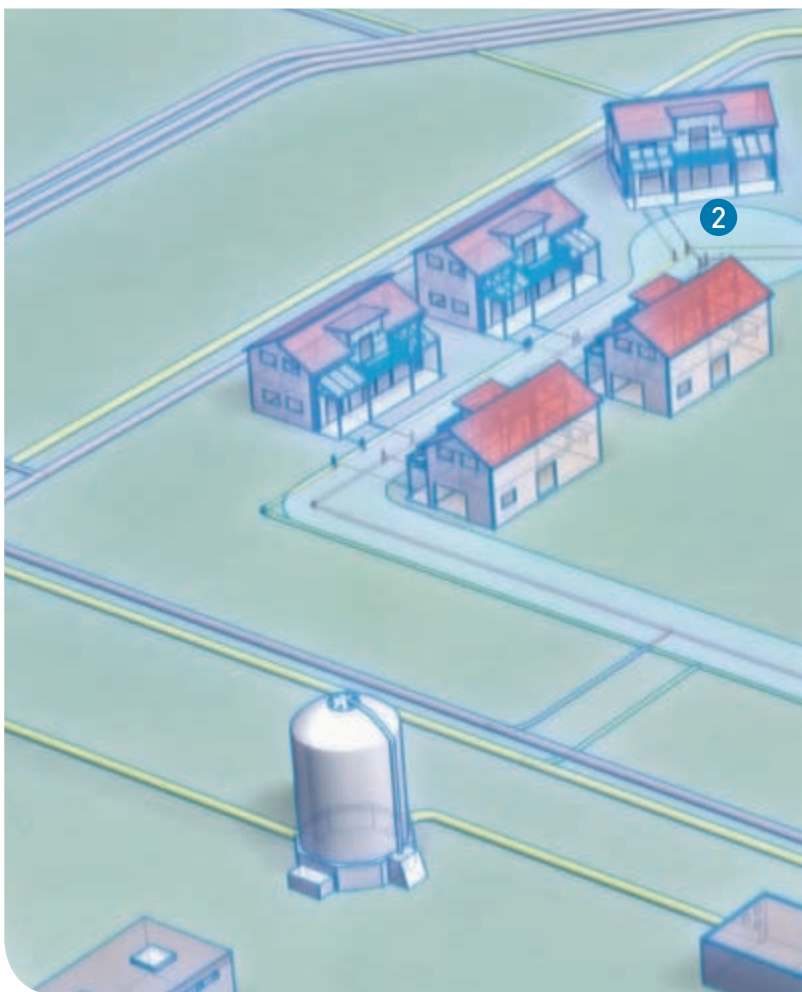
Service lines bring gas and clean water into the home, passing through either the water or the gas meter, outside or inside the house.

Pipe diameters normally range from DN20 (d25) to DN50 (d63). Pressures range from <1 bar up to approximately 6 bar.

Polyethylene (PE) is used for nearly all house connections nowadays. Flexibility, easy jointing, safety and a long lifetime are reasons for choosing this material.

Leakage (mostly in water applications) is however still quite common. The variety of materials and their connections are often part of the reason for this.

GF Piping Systems offers a complete package with ELGEF Plus, POLY16 Plus, PRIMOFIT, Multi/Saddle Plus, MULTI/JOINT, Plast/Joint and many more solutions.



Easy house connections. The universal fitting for connecting metric PE pipes to plastic or metal pipes in every situation.



The right product for every application. For maintenance and renovations.

House Connections & Service Lines



Service Lines



House Connections & Service Lines

House Connections &



Tapping valves. Long life, choice of two tapping designs and the 360° rotatable outlet.

Automatic fusion data input. Easy and fast input of the necessary fusion data with the barcode reader.

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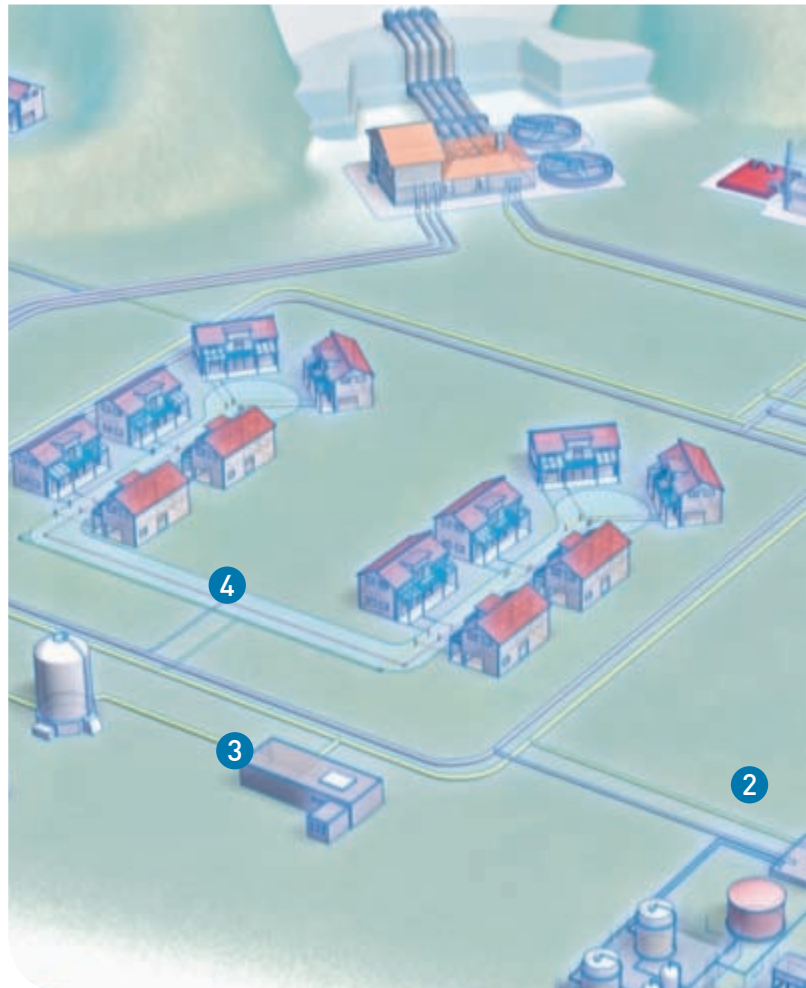


The amount of water that is lost or unaccounted for is typically around 20-30 percent of production. For gas this is virtually zero. Leakage in gas is usually detected in an early stage and repaired as quickly as possible.

Water and gas loss can be attributed to several causes, including leakage, metering errors, public usage such as fire fighting and pipe flushing, as well as theft.

Leakage is usually the major cause and occurs in all sections of the water- and gas grid. The causes include corrosion, material defects like ageing of gaskets, faulty installation, excessive pressure, tree growth, water hammer, ground movement due to underground construction work, drought or frost, and excessive loads and vibrations from road traffic.

The method of repair depends to a large extent on the site conditions, availability, preferred jointing technology, interface requirements, as well as the dimensions and type of materials.

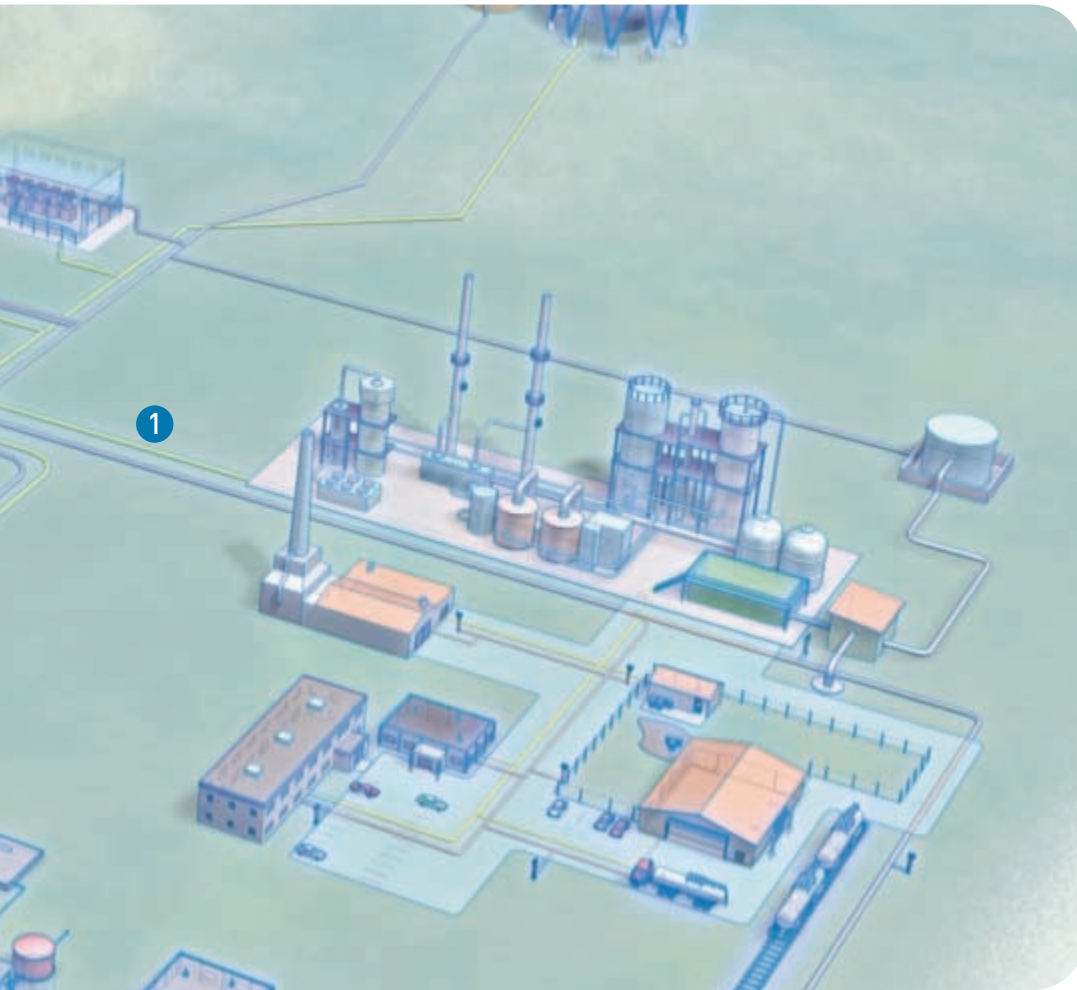


Repair of leaking joints under pressure. WAL/V leak clamps provide a dependable repair solution.



All kinds of pipe materials. For repairs up to 20 bar pressure.

Maintenance and Repair



Maintenance and Repair

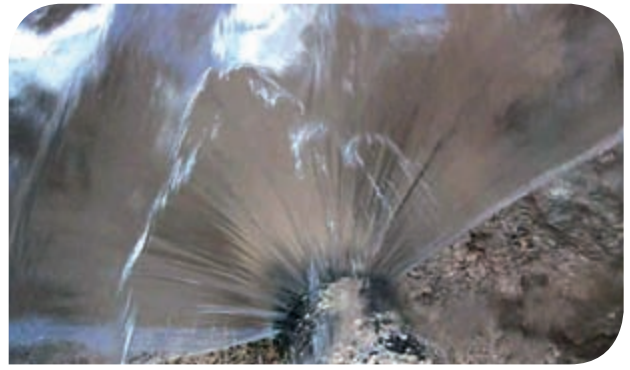


Maintenance and Repair



Simple installation technology. PE branch off on ductile cast iron pipe with the MULTI/JOINT wide range coupling.

Tight spaces. POLY16 Plus for easy and fast repair in the trench.



Piping materials used in gas and water networks can generally be divided into two groups. One being the more traditional materials such as ductile cast iron, (grey) cast iron, steel and (asbestos) cement, the other being plastic pipe materials such as PE, PVC and GRP.

If we look at the first group, damages such as broken pipes, leaking pipes and leaking connections can happen due to their age, corrosion, sudden increased pressure or vacuum situations. Earth movement, traffic tremors and third party damage are other possible causes for these pipes and connections to break or leak.

In case of plastic pipe material like for instance PE and PVC, corrosion is not an issue. If we look specifically to PE, we are looking at a material, which is much more flexible than traditional piping materials.

Therefore increased pressures, vacuum situations, earth movement and tremors usually do not result in leakage.

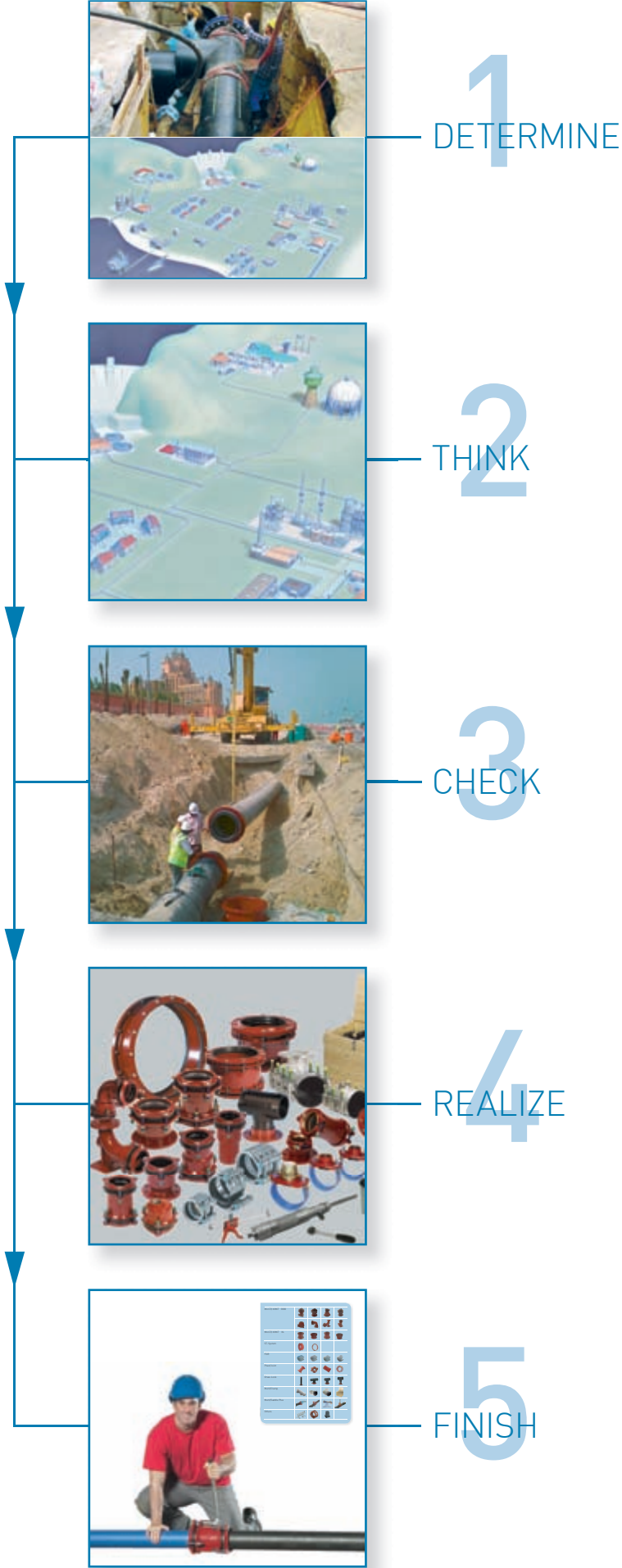
The main cause for this leakage can be found in third party damages (approx. 95% of the cases).

Broken pipes are responsible for a major part of the water loss, but do not underestimate smaller leakages. Small leakages of for example 12 drops of water per minute would mean a leakage of over 2 m³ per year. Imagine the total water loss of leaking pipes and connections world wide.

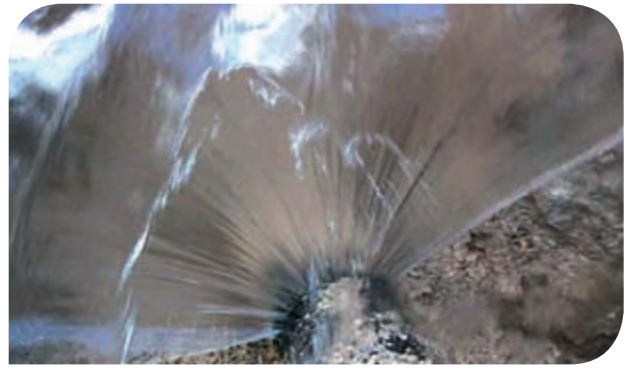
Reducing water loss does also mean reduction of the use of energy. Transporting water is about 90% of the total energy consumption, used in the supply of water.



Broken or leaking piping section



Broken or leaking piping section



1 DETERMINE

In case of a broken pipe, it is often not very hard to locate the problem, because end users will immediately complain about lack of water or gas supply. In case of leaking pipes or connections, it is very difficult to locate the problem as the leakage often is not directly visible. An increase of demand could be visible in control stations. In case of water supply the leakage could be detected on site. Leakage could also be detected by other means, for example sonic leak detection devices.

A vital step is to make sure that important information such as the pipe material, outside diameter, inside diameter, pressure and medium is available. If this information is not available, gather this information on location. Make sure that this information is documented for future benefit.



2 THINK

Always think before acting. Which options do you have? Is an under pressure repair possible / desirable or is the only possibility to make a pressureless repair? In the event of a broken pipe it is not very likely that an under pressure repair is possible.



In the event of a leaking pipe or connection often both options are possible, in which case you should decide which would be the best solution, having considered all factors.

Just do not end up with a solution as shown.



Broken or leaking pipe section

3 CHECK AVAILABILITY OF MATERIALS AND EQUIPMENT

Are the required materials, tools and equipment timely available?

Repair or maintenance that is done in urban areas often causes traffic delays and other inconvenience. Delays could lead to penalties and could do damage to the image of the repair or maintenance company or the water or gas work. A good planning and trustworthy partners are indispensable.

4 REALIZE THE REPAIR WITH THE CHOSEN GF SOLUTION

Execute the repair or maintenance job with the chosen Georg Fischer solution.

Make sure that the installation manual(s) are available on site and that the guidelines of the installation manual are read and followed thoroughly.

5 FINISH

Check the integrity of the repaired or maintained section of the pipeline by means of a pressure test. The pressure used in the pressure test should minimally be the working pressure of the network and should not exceed 1.5 times the working pressure (if national norms state otherwise, follow the national norms).

Make note of all information of the repair or maintenance done on the network for future benefit and analyses.



Competent customer service
Maintenance and repair

+GF+ Our plus for your applications

one to the other
and all
together



MULTIJOINT® 2000
with clamp assembly
with clamp assembly
with clamp assembly
with clamp assembly

MULTIJOINT® XL
with clamp assembly
with clamp assembly
with clamp assembly
with clamp assembly

GF-System
with clamp assembly and clamp assembly
with clamp assembly
with clamp assembly

FOR
with clamp assembly
with clamp assembly
with clamp assembly
with clamp assembly

FRANKENSTEIN®
with clamp assembly for pipe repair
with clamp assembly
with clamp assembly

DRY-LOCK®
with clamp assembly
with clamp assembly
with clamp assembly

MultiClamp
with clamp assembly
with clamp assembly
with clamp assembly

MultiGrip® Plus
with clamp assembly
with clamp assembly
with clamp assembly

Others
with clamp assembly
with clamp assembly
with clamp assembly

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WIRTSCHAFTS
www.gfg.g Georg Fischer.com





Broken pipes occur in all pipe dimensions and with all kind of pipe materials. The reasons for a pipe to break can be various. It could be due to age, corrosion, sudden increased pressure or vacuum.

Also external influences like earth movement, traffic tremors or digging machines could cause a pipe to break. In all cases: the broken pipe needs to be repaired.

The solutions that Georg Fischer can offer you, will be introduced and explained to you on the following pages, as well as a short description of the repair and installation steps that have to be taken with each solution.

These steps are not an installation manual and therefore should not be considered as such. Installation manuals are available separately.



Electrofusion couplings



Butt fusion machines

Pressureless solutions



Wide range fittings
(restraint or non-restraint)

Dedicated fittings

Compression fittings

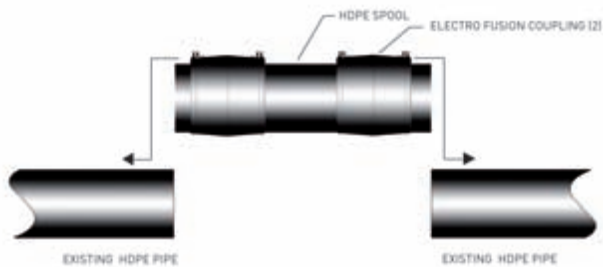
Which pressureless solutions can GF Piping Systems offer you?



General

Always follow the appropriate jointing instructions. When repairing PE pipe keep the jointing area dry and free of all contamination. Maintain a distance of 5 x the outside pipe diameter between squeeze tools and damaged section. Mark position of the squeeze-off to prevent a repeat application at the same point.

Isolate the damaged pipe by closing valves or using squeeze-off tools. Remove the damaged section. Prepare a replacement pipe ensuring both ends are cut-off as squarely as possible. Use re-rounding tools for oval pipes.



Repair using electrofusion technology

Use rotary peeling tools for removing oxidized layers on pipes. Degrease peeled areas with PE cleaner. Mark the minimal insertion depth of the coupler. Slide the electrofusion couplers completely onto the replacement pipe. Align pipe and slide the couplings back over the pipe end up to the depth mark. Use clamping tools to hold the electrofusion coupling and pipe in position.

The jointing area and components must remain stress-free at all times. After cooling conduct a pressure test.

Refer to the respective installation instructions and technical information for more details.

For repairs on PE pipe with electrofusion, GF Piping Systems offers you ELGEF Plus fittings (page 40-41) squeeze-off tools, rotary peelers, pipe clamping tools, re-rounding clamps (page 42-43), MSA electro fusion control units (page 42-43) and Tangit PE cleaner with cleaning cloth.



Repairing non-pressurised PE pipes

Butt fusion technology

Although repairs with butt fusion techniques are easily completed for above-ground situations, dedicated equipment is recommended particularly when working in narrow trenches.

Repairs using butt fusion

Isolate the damaged pipe either by closing valves, using squeeze-off tools or stop-off bags. Cut damaged section out. Prepare a replacement pipe ensuring the pipe ends are cut-off squarely.

Attach the non-moving clamps of the machine to the fixed pipe. Attach the moveable clamps to the replacement section. Check pipe alignment. Measure the additional pressure resulting from the frictional losses and the drag resistance then add these to the recommended fusion pressure.

Ensure the fusion surfaces and the heating plate are clean. Insert planer and plane both pipe ends by moving the moveable bracket towards the planer. Remove planer. Insert the heating plate and

check temperature is correct. Close the machine to press the pipe ends against the heating plate. The fusion pressure should be applied until the specified bead height is reached.

Reduce pressure so that contact is just maintained between the pipe ends and heating plate. When the heat soak time has elapsed, open the machine, remove the heating plate and close the unit again as quickly as possible. The machine must remain closed and under fusion pressure during the jointing and the cooling phases. When the cooling time has fully elapsed, release the applied pressure. Then slacken and remove machine unit. After cooling conduct a pressure test.

Refer to the installation instructions and technical information for full details.

Georg Fischer offers a range of butt-fusion machines for repairs on PE pipe (page 42-43).





General

In addition to heat-fusion, options exist with mechanical couplings to repair leaking pipes on PE pipes and other materials. GF Piping Systems can supply wide range couplings for sizes up to DN 600.

Repair with wide-range fittings (pullout and non-pullout resistant)

The following applies when making repairs with mechanical couplers on different pipe materials. When using pullout resistant couplings, remove all additional coatings on the medium carrying pipe. An insert stiffener is necessary for connections with PE or PVC pipes. Anchorages must be used for non-pullout resistant fittings.

Basically, the repair procedure differs little from using electrofusion but mechanical couplings rely on a gasket seal. An advantage with mechanical couplings is a flexible insertion depth. Therefore, pipe cut-offs need to be less accurate.

Thoroughly clean the pipe surface for at least the length of the fitting on the replacement pipe and for at least half of the length of the fitting on the fixed pipe.

Mark the minimum and maximum insertion depths on the pipe ends. Slide both fittings over the replacement pipe and align accordingly. Slide the fittings back to the previously marked positions and tighten the bolts.

Perform a pressure test at the intended working pressure.

Refer to the installation instructions and technical information for full details.

Georg Fischer offers MULTI/JOINT pullout and non-pullout wide-range fittings and MULTI/JOINT XL non-pullout resistant wide-range fittings (page 48-49).



Repairing non-pressurised pipes

Repairs with dedicated fittings

Sometimes a dedicated sized fitting can be used instead of a wide-range fitting. This might be due to the application of the fitting or simply the available dimensions. GF Piping Systems supply dedicated fittings for sizes up to DN 2800.

A repair procedure with dedicated fittings is almost identical to that with wide-range fittings. The difference between dedicated fittings and wide-range fittings is the ease of their installation. However, the outside diameter of the pipe must be within the size range of the fitting.

For repairs with dedicated fittings, GF Piping Systems offers you ST-SYSTEM (page 48-49), Plast/Joint (page 48-49), FGR stainless steel couplings (page 48-49), rotary scrapers RS, pipe clamps and re-rounding tools (page 42-43).

Repairs with compression fittings

Repairs on smaller pipe sizes can be made with compression fittings. Such fittings are pullout resistant, and therefore eliminate the need for thrust blocks or anchorages. Compression fittings from GF Piping Systems range from d20 to 110mm.

The installation of a compression fitting is similar to that for a dedicated fitting, the main difference being size and handling. Due to the relatively small sizes installation with compression fittings can be done very quickly and easily without special tools.

Refer to the installation instructions and technical information for full details.

Georg Fischer offers plastic compression fittings (page 44-45), metal compression fittings, mechanical gas fittings and the necessary tools (page 46-47).





Water loss is a well known fact in water networks. Part of the total water loss is accounted for by leaking pipes, which water network owners try to limit to a minimum. Water loss in itself is not life threatening, in gas networks however, any leakage could be fatal.

Historically gas networks are younger than water networks, which can be older than 200 years. Gas networks have an advantage compared to water networks. Younger, well documented and treated with the utmost care as lives could be endangered by the smallest gas leakage.

Symptoms of leaking pipes are for example small ruptures or tears, pit corrosion, corrosion, external damage caused by digging machinery and the usual wear and tear that is normally stressing the water or gas network.

The solutions Georg Fischer offers you will be introduced and explained to you on the following pages, as well as a short description of the repair and installation steps that have to be taken with each solution.



Multi/Clamp stainless steel repair clamps for emergency and under pressure repair.



Split barrel stainless steel clamps for under pressure repair of bell & ring joint connections.

Under pressure solutions



Multi/Clamp stainless steel repair clamps for emergency and under pressure repair.



W410 drilling device for under pressure drilling through Poly-valve & ELGEF Plus branch fittings.



WAL/V bell & ring joint clamps for under pressure repair of bell & ring joint connections.

Which under pressure solutions can GF Piping Systems offer you?



Under pressure solutions

Why should one choose an under pressure solution?

Welding (electro- or butt fusion) on PE pipes can be done under dry conditions. In most leakage cases the perfect repair, electro- or butt fusion, is not possible because of the wet conditions. In these cases other solutions have to be used in order to make the (emergency) repair.

However, bypassing the flow of the medium in order to ensure dry conditions, can enable electro- or butt fusion. Using squeeze off tools, squeezing the PE pipe, or installing (electro fusion) saddles, through which 'stop-off bags' are inserted, will stop and re-direct the flow of the medium.

A bypass can be done on all pipe materials. The medium is re-directed by means of two installed saddles, connected to each other for example by PE-pipe. The leaking pipe or connection can then be repaired, as the section that has to be repaired has been made pressureless. The repair or extension of the system is done

while continuing the supply to the end customer. To enable a bypass, GF Piping Systems offers you W400 and W410 drilling devices (page 48-49), Multi/Saddle Plus (page 48-49), TPA compression fittings (page 44-45), ELGEF electro fusion fittings (page 40-41) and electro fusion boxes, butt welding machines and various tools (page 42-43).

Repair with repair clamps

These wrap around type of repair clamps have proven to be a perfect and swift method of temporary repair, especially in emergency situations, with the advantage of not having to shut off the mains.

For the successful use of repair clamps the following design considerations have to be followed. The pipe has to be able to maintain its structural integrity and in case of use on PE pipe, consult your supplier. Make sure that you are using the correctly sized clamp by measuring the diameter of the pipe. Clean and scrape the damaged pipe section in order to remove dirt and corrosion to ensure a clean and smooth surface. Mark the pipe to reference the leak.



Repairing pressurised pipes

Install the clamp and tighten the bolts according to the installation instruction. After finishing the installation, conduct a pressure test.

To ensure an optimal repair, always consult our installation instructions and technical information to make sure that the chosen products are suitable for the repair.

To enable a (emergency) repair, GF Piping Systems offers you Multi/Clamp stainless steel repair clamps (page 48-49), FGR stainless steel repair clamps (page 48-49) and various tools (page 42-43) needed for the (emergency) repair.

Repairing bell or ring joints

This easy to install and cost effective under pressure repair method is used in case of leaking bell joint connections (ductile cast iron pipes) and for leaking ring joint connections (asbestos cement pipe).

The major benefits of this solution are a non disturbance of the flow of the medium so that (end) customers are not disturbed by a shutdown of the supply.

Another benefit especially for asbestos cement pipes is that the pipe does not have to be cut in half. As qualities in asbestos cement pipes vary, cutting these pipes could mean replacement of a pipe section or even worse, replacing the entire line.

For the successful use of these solutions, make sure that the pipe ends are cleaned and grinded. Always consult our installation instructions and technical information to make sure that the chosen products are suitable for the repair. After installation, conduct a pressure test in order to check if the installation is leak tight.

To enable a (emergency) repair on leaking bell or ring joints, GF Piping Systems offers you Multi/Clamp split barrel (page 48-49), WAL/V bell and ring joint repair clamps (page 48-49) and various tools (page 42-43) needed for the (emergency) repair.





Under pressure drilling

Under pressure drilling can be used for installing a bypass or for branching off an existing main line, among other applications. It is a procedure where shutting off the distribution line is not necessary and the supply of water and gas to the end user is not interrupted. This is one of the major benefits, which also reduces installation costs.

There are several ways to perform an under pressure drilling. A drilling through a saddle, which can be shut off temporary is the most simple solution to make a bypass, a house connection, or a branch off on a main line. Another under pressure branch off solution is to drill through a valve, which can be shut off after the drilling procedure.

In case of PE pipes an electrofusion saddle has to be electrofused on the main line.

A PE spigot valve is then electrofused into the electrofusion saddle, after which the drilling can be performed. After the successful drilling procedure, the drilling shaft is retrieved. The valve can be closed and the under pressure drilling has been done successfully.



Hot tapping



One has to make sure that the cup drill that is used is capable of drilling through the PE pipe (length of the cutter / wall thickness of the PE pipe) and that the cutting chips and coupon are retained within the cup drill. If the cup drill is not capable of retaining the cutting chips and coupon, the under pressure drilling will fail as the valve cannot be closed as it is blocked.

In case of other pipe materials an under pressure drilling can be performed by using a valve. A flanged saddle or a flanged clamp has to be mounted on the main line, after which the valve is attached to the saddle or clamp. The drilling is performed through the valve and after a successful under pressure drilling, the drilling shaft is retrieved. The valve can be closed and the under pressure drilling has been done successfully.

To enable under pressure drilling, GF Piping Systems offers you W410 & W400 drilling devices (page 48-49), ELGEF Plus branch saddles (page 40-41), Multi/Clamp Flange (page 48-49), Poly-valve full bore ball valve (page 40-41) and various tools (page 42-43).





WAL/V leak clamps. WAL/V Single enables under pressure repair of leaking bell joint connections. WAL/V Double is the solution for leaking double socket connections. Both offering a range from DN80 - DN1200, for repair on all kinds of pipe materials.

Squeeze-off Tool, Type S1. This mechanical device is used to squeeze off PE pipes during repair and extension work. In order to prevent the pipe becoming over stressed, the pipe tool is equipped with adjustable end stops for SDR 11 (ISO S5).

Economic alternative to conventional pipe jointing techniques. Quick and easy installation of the steel repair couplings. Ready for immediate use and only limited space is needed. Non-corrosive, low maintenance, multi-purpose applications.

Stainless steel repair clamps, tapping tees and saddles. Used for quick, easy and permanent repair of corroded or damaged water and gas pipes.

PRIMOFIT – mechanical gas fittings. For relining/repair of steel pipe service lines, connecting meter boxes and connect steel or cast iron mains with PE service lines.



Maintenance and Repair Solutions



POLY16 Plus for mechanical connections. A complete range of fittings allows assembly on all types of PE pipes: fast, easy, at very little expense, under all site conditions.



PRIMO FIT – compression fittings for quick assembly without special tools. For joining steel – steel, steel – PE, PE – PE or others. Minimum pipe preparation needed.



Plast/Joint – the dedicated mechanical coupling. Range from d63 – d315. For easy installation of plastic pipes. Designed with one-bolt system.



Wide range of couplings, restraint and non-restraint. With MULTI/JOINT 3000 we offer a full repair system. For bigger diameters we offer MULTI/JOINT XL couplings from DN300 – DN600.



ST System – dedicated steel coupling. Range from DN50 – DN2800. Couplings are non-restraint, tailor-made and with long insertion depths.

Maintenance and Repair Solutions



Maintenance and Repair



For the most suitable piping system, the best jointing technology is needed to install reliable and high quality piping systems. GF Piping Systems has developed it for you.

- Surroundings**
- Underground consistency
 - Trench size
 - Temperature
 - Site conditions
- Interface requirements**
- Connection to pumps and housing
 - Integration in existing pipelines
 - Staff training

Best cost of ownership
Machines & Tools

+GF+ Our plus for your applications

One to the other and all together

Jointing Machines	
Working Machines	
Tools	

+GF+ open Access **GF PIPING SYSTEMS**

Machines & Tools (MSA machines, GF machines, TM machines)

Reliable non-corrosive connections
Water & gas distribution

+GF+ Our plus for your applications

One to the other and all together

Systems	
Distribution Systems	
Equipment	
Accessories	
Special Systems	
Design	
Design of Pipelines	

+GF+ open Access **GF PIPING SYSTEMS**

ELGEF Plus

Competent customer service
jointing without drawing

+GF+

One to the other and all together

Equipment	
Design	
Design of Pipelines	
Design of Pipelines	
Design of Pipelines	
Design of Pipelines	
Design of Pipelines	
Design of Pipelines	

+GF+ open Access **GF PIPING SYSTEMS**

PRIMO FIT



Products & Systems

Your competent partner to build, monitor and operate your network

- Always the right solution for water utilities
- Premium quality and performance
- Increased security throughout the system
- Technological expertise
- «One-stop shopping» around the world
- System solutions
- Know-how and experience
- Local support



PE Welded Solutions

ELGEF Plus & Spigot fittings



Welded Solutions

Electrofusion & Butt Fusion

Units & Tools



Your Global System Provider



Mechanical Solutions with Plastic

POLY16 Plus fittings

Mechanical Solutions with Metal

PRIMOFIT compression fittings and PRIMOFIT mechanical gas fittings.



Mechanical Solutions

Our Solutions

Maintenance & Repair



Mechanical Solutions with Metal

MULTI/JOINT
Plast/Joint
Multi/Saddle Plus
Multi/Clamp

Products



Products



ELGEF Plus

Reliable non-corrosive connections.

Whether for water, gas or other pressurised piping systems, above or below ground, ELGEF Plus is the ideal solution.

Modularity is the strength of ELGEF Plus. Each individual fitting and saddle is made to match and when put together form reliable leakproof connections.

The outstanding customising possibilities of ELGEF Plus, together with its flexibility, produce convincing and decisive customer benefits. Numerous and original solutions can be created by using just a few products.

Another hallmark of the ELGEF Plus modular concept is its limited stock requirement. As only a small number of fittings and saddles will complete a system, warehousing costs are greatly reduced.



Couplers
d20 – 400 SDR11
d160 – 630 SDR17



Electrofusion Fittings
d20 – 250 SDR11



Electrofusion Transition Fittings
d20 – 63, 1/2" – 2"



Saddles
d32 – 630



Spigot Fittings
d20 – 630 SDR11
d90 – 630 SDR17



Flanges
PP-V d20 – d400
PP-St d20 – d630
St d32 – d630
Gasket d20 – d630



Fittings and Valves
for Water Applications



PE Welded Solutions



Products



Products



Welding Technology

High added value.

For more than 40 years GF Piping Systems has been developing and manufacturing butt fusion machines and tooling for the installation of plastic piping systems. This long experience is reflected in the modern design of the products, which are also suitable for use under harsh site conditions and ensure high quality jointing.

Application oriented solutions for gas and water distribution projects are on offer. The wide product range includes hydraulically operated machines providing the possibility to connect joint recording equipment as well as fully automatic CNC-controlled butt fusion machines. This equipment is highly valued not just on the construction site, but also in the workshop where it is used to prefabricate entire pipeline sections and customised segmented fittings.



Site Machines



Workshop Machines



Tools



Machines and Tools



Products



Products

+GF+

POLY16 Plus

Easy and fast installation.

GF Piping Systems is the mechanical jointing specialist and has been providing complete ranges of compression products for over 50 years.

Maximum reliability thanks to the unique patented active sealing system with double lip gasket.

We provide a safe and easy connection for PE, PVC and other pipe materials, under all site conditions.

Ideal for high-pressure water applications, service connections, water distribution as well as industrial applications.



Compression Fittings



Tapping Saddles for PE and PVC pipes



Kits

Reduction for copper pipe and for PVC pipe



Metal-PE Transition Fittings with brass offtake



Metal-PE Transition Fittings with bronze offtake



Universal Fittings and Plastic Stop Cock



Clamp Saddles



Tightening Wrench

Mechanical Solutions



Products



Products



PRIMOFIT

Compression Fittings and
Mechanical Gas Fittings

Joining PE and steel pipe without threading
PRIMOFIT from GF Piping Systems comprises a complete range of metal fittings for connecting pipes made of PE, steel, lead and other materials. PRIMOFIT offers four different joining technologies: compression, draw-lock, push-fit and thread joints. This versatile product is available in pipe sizes from 3/8" to 3" or 20mm to 63mm, offering full pull-out resistance and angular deflection. PRIMOFIT is available in black or hot-dip galvanised surface.

By using different sealing materials (NBR, FPM, EPDM), PRIMOFIT provides solutions for a variety of applications ranging from water, gas, oil, heating, fuel and compressed air piping systems. PRIMOFIT is an easy and time-saving solution for repair situations, new installations as well as for network extensions.

In addition the PRIMOFIT product range offers malleable cast iron gas service fittings: Service insertion adaptors and the Serviflex-system for relining/repair of steel pipe service lines, meter box adaptors with the save draw-lock joint or the push-fit joint and service top tees to connect steel or cast iron mains with PE service lines.



Couplings
black or galvanised



Female/Male Adaptor
and Elbows
black or galvanised



Tees and Caps
black or galvanised



Spare Kits
for reuse of PRIMOFIT and
easy change of application
field



Meter Box
for connecting PE service
lines to meter boxes



Service Insertion Adaptors
and Serviflex System
for relining/repair steel pipe
service lines



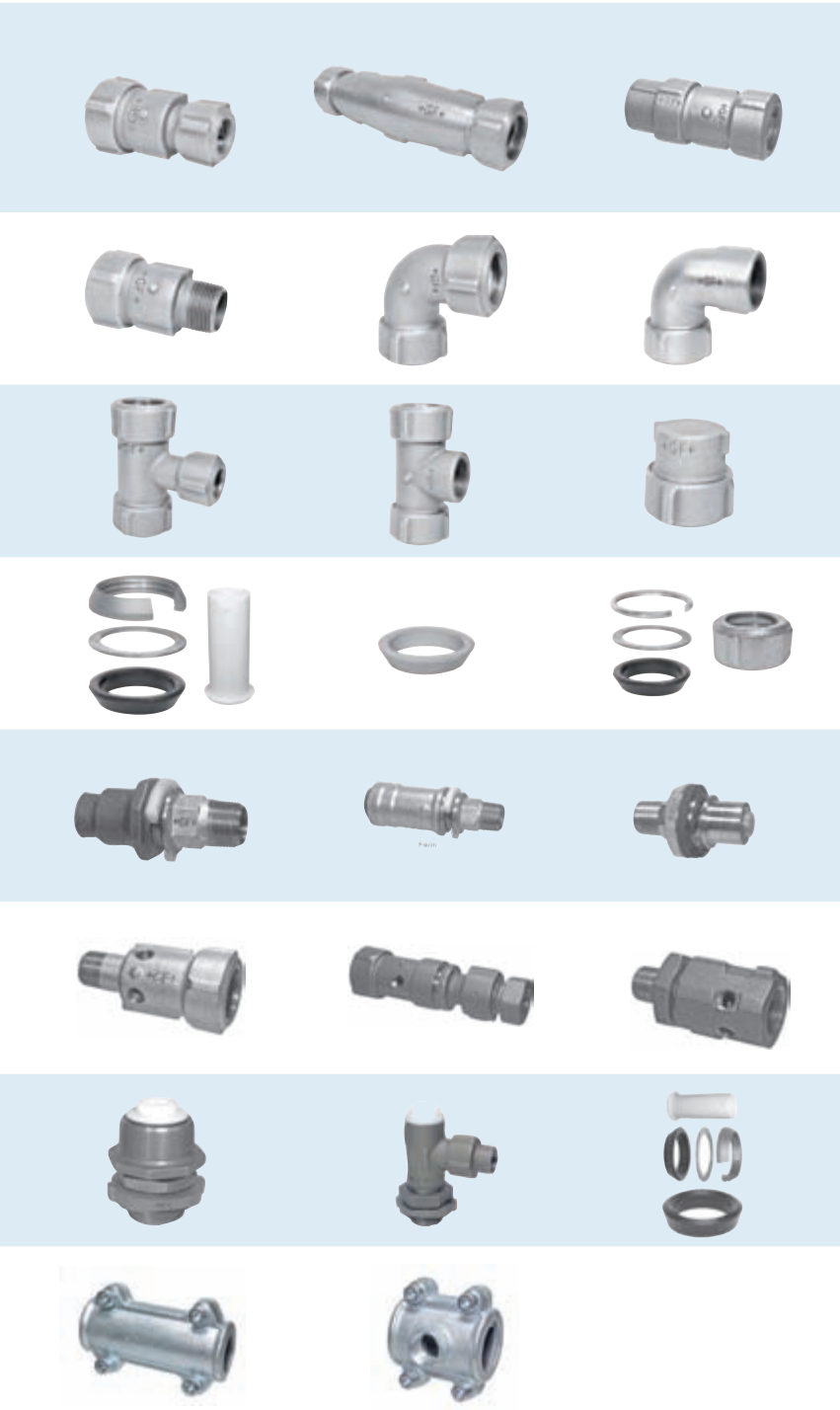
Service Top Tees
for connection from mains
(steel or cast iron pipes) to
PE service lines



Repair and Tapping Clamps
galvanised



Mechanical Solutions



Products



Products



MULTI/JOINT Plast/Joint Multi/Saddle Plus

Competent customer service.

GF Piping Systems is the connection technology specialist, supplying a complete range of products which have been used in the water and gas market for many decades. No matter how complicated your connection problem seems, we can provide solutions when it comes to connecting, repairing and tapping of all kinds of pipe materials.

We have what you need wherever you are. We offer tailor-made solutions, a wide range of couplings, competent and worldwide customer support, fast delivery with local availability, complete packages as well as know-how and know-why for all applications. We provide safe and reliable connections between different pipe materials and pipe dimensions even when operating under the most demanding conditions.



MULTI/JOINT 3000
wide-range couplings
restraint – non-restraint
DN50 – DN300



MULTI/JOINT XL
wide-range couplings
non-restraint
DN300 – DN600



ST-System
dedicated couplings and flange
adapters with or without reduction
DN50 – DN2800



FGR
stainless steel couplings
restraint – non-restraint
DN25 – DN2000



Plast/Joint
mechanical connection for
plastic pipes
restraint – non-restraint



Draw-Lock
solution to connect metal to PE
DN50 – DN300



Multi/Clamp
stainless steel repair clamps
tapping tees and saddles



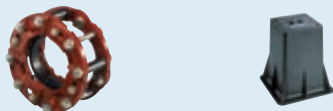
Multi/Saddle Plus
wide range of tapping saddles
with or without shut-off mechanism
DN60 – DN300



Others
W400 drilling device
WAL/V leak clamp
GRP street covers



Maintenance and Repair



Products



Products



ISO Certified Management Systems

According to the quality management system ISO 9001 and environmental certification ISO 14001, the high quality of our products is guaranteed. Our QM-System is developed on a continuous basis to achieve more customer satisfaction. Improved performance while taking environmental issues into consideration has become a fixed part of our philosophy.



Accredited Test Centre

Our testing laboratory is certificated according to SN EN ISO 9001 and SN EN ISO 14001. The accreditation confirms our competence in testing components for piping systems as well as pipes, pipe connections, fittings, manual and automatic valves and flow meters. Accredited certification is also important when exchanging test reports as only such reports are accepted by approval boards worldwide and increasingly by customers.



Documentation/Online Catalogue

Find fundamentals about plastic piping systems as well as working information in printed form or on the internet. Our website also provides information about CAD library, calculation tool, planning fundamentals and approvals as well as inspection certificates. All that is required to get a specific certificate is the product code and batch number.



Technical Support

For technical support or information about applications please contact our specialists of our sales companies and representatives mentioned on the last page or visit our website: www.piping.georgfischer.com

Pipe Connection Technology since 1802

50 Years of Know-how in Plastics

Training

GF Piping Systems guarantees the safe and faultless installation of its products by means of these carefully targeted customer-training courses, offered in numerous countries around the world. As a result, customers and dealers are able to rely on well-trained GF Piping Systems employees, who

have both knowledge of the products and application know-how. Our training centre in Schaffhausen offers the perfect opportunity for both staff and customers to receive in-depth knowledge on applications and markets for our systems.



PE – Always the best choice

Nowadays, PE plays an important role in Water Utilities. Georg Fischer continues to innovate and bring new network components into the PE system which traditionally were constructed in corrosion-sensitive material. Water-proof, stable, weather-resistant, light-weight and easy-to-handle materials are required. PE offers the following advantages:

- Light-weight
- Outstanding flexibility
- Good abrasion resistance
- Corrosion resistance
- High impact resistance at low temperatures
- Good mechanical resistance
- Safe and easy jointing by welding
- Excellent cost-performance ratio
- A long, proven track record in water application



Information



Information

GF Piping Systems → worldwide at home

Our sales companies and representatives ensure local customer support in over 100 countries.

www.piping.georgfischer.com



The technical data is not binding. They neither constitute expressly warranted characteristics nor guaranteed properties nor a guaranteed durability. They are subject to modification. Our General Terms of Sale apply.

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