GF Piping Systems

+GF+

Product Range International

INSTAFLEX iFIT

Table of contents

General information

Al	Aluminium
BF	Butt fusion
Brass	Alloy made of copper and zinc (wetted parts in dezincification resistant quality, DZR brass)
d	Pipe outside diameter
dCu	Copper pipe outside diameter
DN	Nominal bore
EPDM	Ethylene propylene diene monomer (M-class) rubber
EPS	Expanded Polystyrene
EVOH	Ethylene vinyl alcohol
EF	Electro fusion
Gunmetal	Known as red brass in the United States, type of bronze an alloy of copper, tin and zinc
HWS	Heiz-Wendelschweissen, GF Electro fusion system
HMS	Heiz-Muffenschweissen, GF Socket fusion system
Malleable Cast iron	Cast iron that has been toughened by gradual heating or slow cooling
PA-GF	Polyamide glass-fibre reinforced
PB	Polybutene
PE	Polyethylene
PE-HD	Polyethylene, high density
PE-RT	Polyethylene
PE-Xa	Cross-linked polyethylene, using the peroxide (Engel) method, after the installation, PE-Xb has the same properties as PE-Xa
PE-Xb	Cross-linked polyethylene, using the silane method after the installation, PE-Xb has the same properties as PE-Xa
PE-Xc	Cross-linked polyethylene, using the electron beam process
PP	Polypropylene
PPSU	Polyphenylsulfone
s	Wall thickness of the pipe
Ø	Diameter
UBA	Umwelt Bundesamt, Germany
LK	Hole circle
SW	Dimension across flats (A/F)
SF	Socket fusion
G	Pipe thread, not pressure tight in the thread (with flat seat) to ISO 228
R	Taper male thread, pressure tight in the thread to ISO 7
Rp	Parallel female thread, pressure tight in the thread to ISO 7
M	Metric thread to ISO 261
m	Meter
SP	Items per standard pack
g	Gramme

All dimensions are given in mm and are intended as nominal or outside diameter of the pipe. Subject to alteration resulting from modifications in design.

For compressed air applications with air containing mineral oil, EPDM gaskets must be replaced by NBR units.

NBR gaskets are not contained in this Product Range. Please contact the GF Piping Systems sales consultant or sales support office assigned to your sales area.

Technical changes and mistakes reserve.

GF Piping Systems

Building the lifelines of the world

GF Piping Systems is the global specialist for the safe and reliable transportation of water, chemicals, and gas. Customers in more than 100 countries implement our solutions to work more safely, efficiently, and cost-effectively.

Your partner for modern plastic systems

Customers in more than 100 countries are already working with the plastic piping systems that GF Piping Systems introduced more than 60 years ago. They are maintenance-free, resistant to corrosive and aggressive media, and are extremely durable. Their low weight, compared to metal systems, reduces static and logistic requirements. An innovative design and modern jointing technologies allow faster and easier installations. All this helps our customers to work more safely, efficiently, and cost-effectively. Support throughout the transition from metal to plastic systems is a key focus for our specialists.

+ Maintenance-free plastic

Plastics are corrosion-free and maintenance-free. They have excellent chemical resistance and last as long as the system itself, which is more than 25 years.

+ Complete system solutions

Our portfolio of more than 60,000 products offers complete system solutions, meaning you get perfectly matched components from a single source.

+ Local support

GF Piping Systems specialists are located in 34 countries and are therefore always close at hand, meaning that advice and on-site practical assistance is never far away.

+ Partner in all project phases

The specialists from GF Piping Systems support you throughout all phases of your project – starting from the planning stage, right through to commissioning. This reduces both the time required and risks.

+ Many years of experience

GF Piping Systems is a division of Georg Fischer AG, based in Schaffhausen, Switzerland, which was established in 1802. You benefit from our many years of experience.

Building Technology

Individual service for your needs

Customer needs are in the center of whatever GF does. From on-site training to adapted design and tailor-made processes - GF Piping Systems provides individual service which fits customers best.

Value added services

From planning support to implementation – our specialists are always close by

As a leading provider of piping systems in plastic and metal, we offer our customers not only reliable products, but also a large package of services. Our support ranges from a comprehensive technical manual or the extensive CAD library to an international team of experts, who work closely together with local sales companies. And when it comes to implementing a project, our customers additionally benefit from a wide range of training courses, either on site or in our modern training centres worldwide.

Generating a genuinely individual added value for our customers is our ultimate goal when implementing our tailor-made solutions. With our application knowledge and product expertise, we support our customers during the planning process, the sustainable realization of the projects and the provision of services. Our expertise in developing and producing piping systems, combined with our profound industry and market knowledge, based on longstanding experience, makes us a qualified and professional partner for our customers.

1 Chemical resistance
Our specialist teams have decades of experience in the area of chemical resistance. They can offer individual support and advice in selecting the right material for the corresponding system solution. On request, a team will examine and select the appropriate material for special applications.

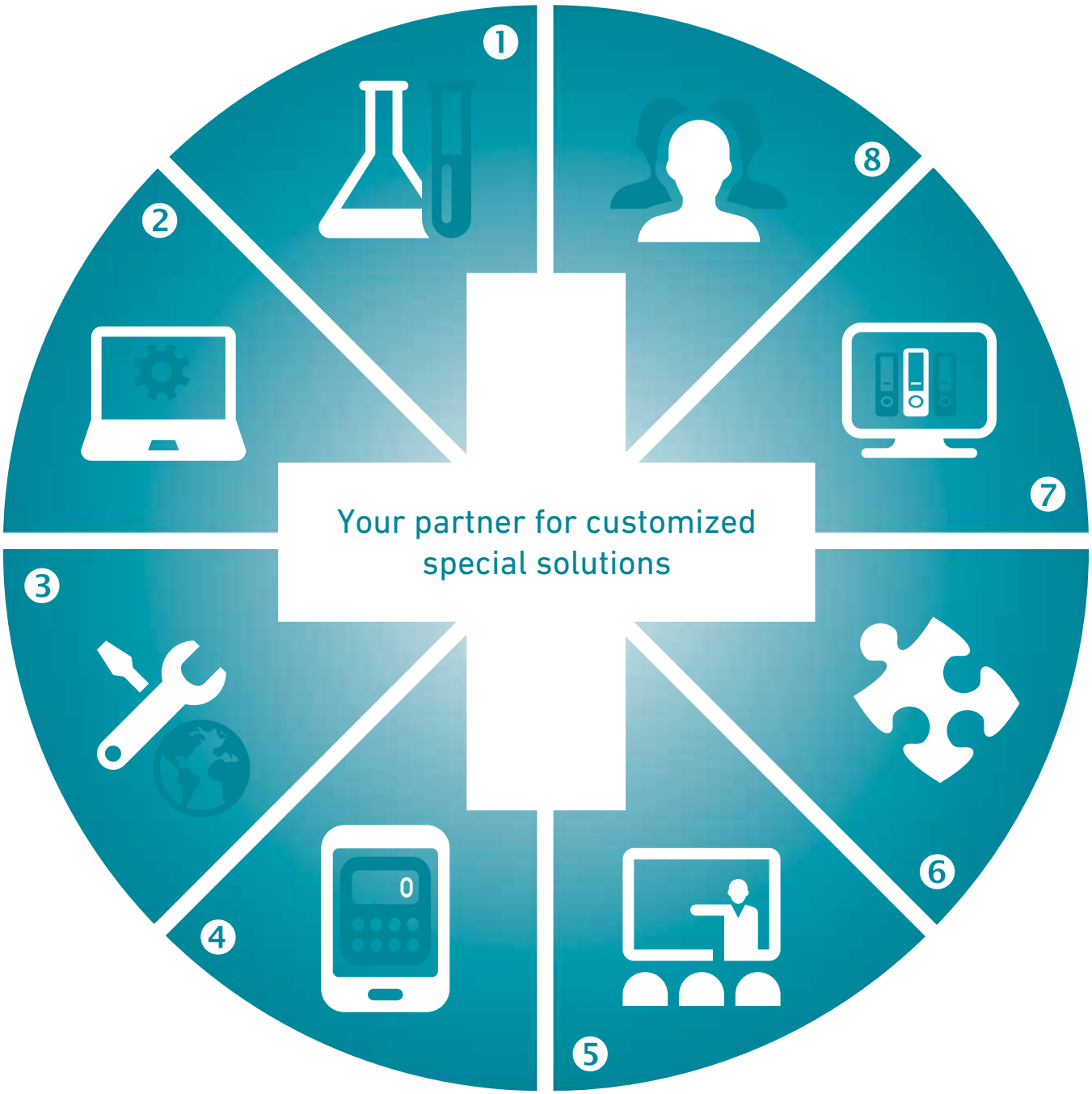
2 CAD library
The extensive CAD library is the most frequently used planning tool at GF Piping Systems. The database comprises over 30 000 drawings and technical data regarding pipes, fittings, measurement and control technology as well as manual and actuated valves. The big advantage of the CAD library is that the data can be integrated directly in CAD models.

3 Technical support
Technical support and material selection are key factors for a successful installation. A team of specialists headquartered in Switzerland is available to support the GF Piping Systems sales companies around the world. For technical advice or for general information, our customers are supported individually by the specialist team in the corresponding sales company.

4 Online and mobile calculation tools
Our numerous, multilingual online calculation tools are very useful for configuring and calculating. By means of pressure / temperature diagrams, the pressure of liquid media recommended for pipes and fittings at various temperatures can be easily defined. FlowCalc App, the mobile application of GF Piping Systems, is an on-site planning tool for pipe diameter and flow velocity calculation to select the right dimension of piping systems when no expert is near by.

5 On-site training
Our experts are available to support our customers locally and conduct training in diverse fusion and jointing techniques on location. The duration and structure of the training depends on the project and the system being installed.

6 Customizing
The customizing teams at GF Piping Systems work closely together around the globe. The focus of these teams is to manufacture custom parts for special systems. In addition, a variety of special solutions can be produced in small series. Standardized processes warrant the highest level of quality for the individual solutions of our customers.



7 Technical manual

For our customers, we have documented the extensive know-how of GF Piping Systems in planning and installing plastic piping systems in our technical manual. This detailed documentation is available in both printed and digital version. The established reference book is helpful in planning large and small projects.

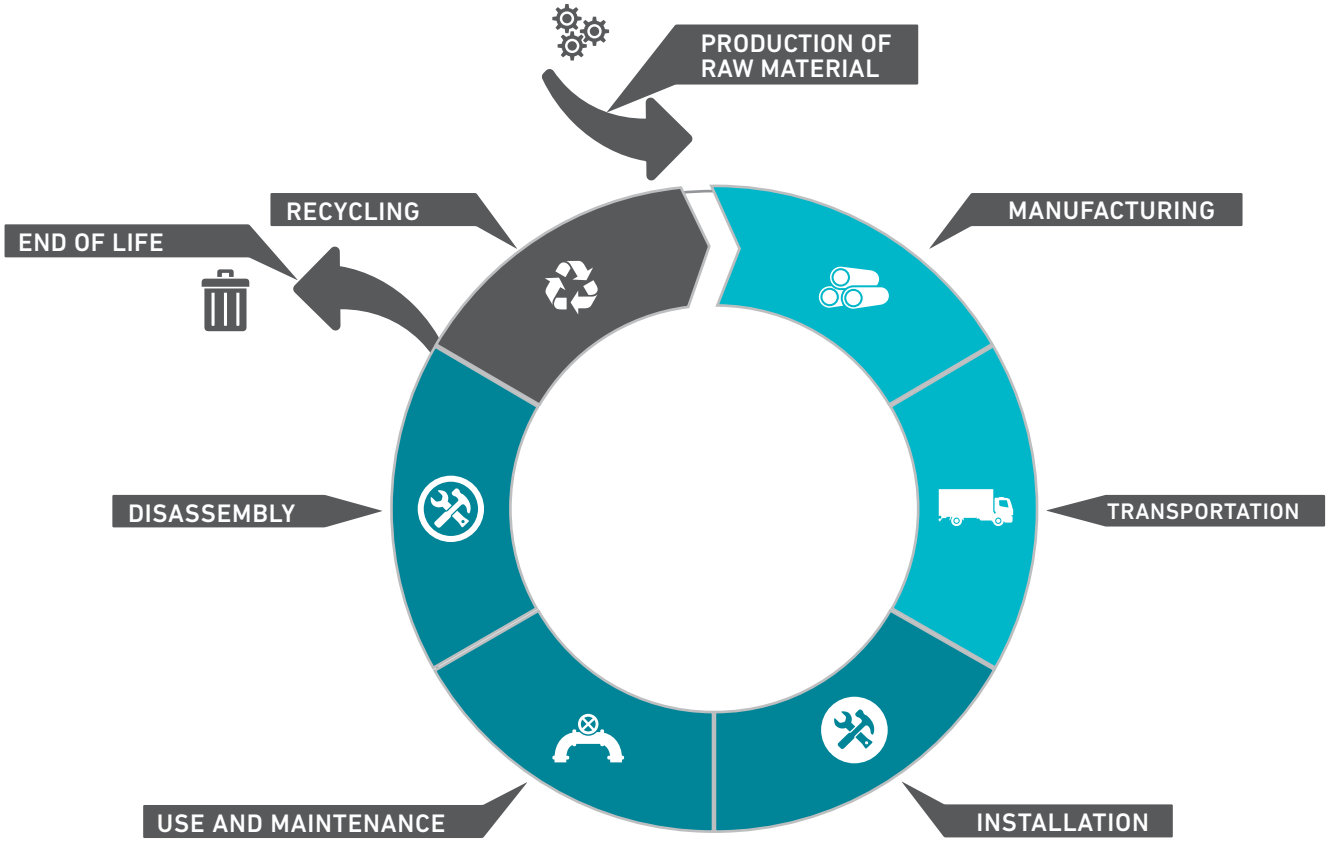
8 Training courses

GF Piping Systems offers a wide range of training courses that allow participants to gain confidence in working with our products and proven jointing technologies. The practical training is clearly defined, structured and adapted to the various levels of participants' experience.

Sustainability

GF Piping Systems incorporates its environmental responsibility into its everyday business activities. Because we understand environmental awareness as one of the corporation‘s core values, all internal structures and processes are geared towards sustainability. We strive to conserve natural resources and work continually towards optimizing the environmental performance of our products and how they are used. Consequently, outstanding material properties and innovative technologies form the basis for our environmentally friendly and energy-saving solutions.

Product Life Cycle



Life Cycle Assessments of GF specific industry systems

GF Piping Systems proactively performs life cycle assessments to determine the environmental impact of its products. In cooperation with an independent institute, life cycle assessments of selected GF Piping Systems specific industry systems were calculated including a PB system for the distribution of hot and cold water on a cruise ship. The life cycle assessments cover the environmental impact over the whole life cycle.

BIM library

GF Piping Systems supports planners, contractors and design engineers using BIM (Building Information Modeling) software from Autodesk.

Due to the industrialization of the building industry, there is a strong demand for digital collaboration across different partners in a project. This can be best achieved when project partners agree on using common standards. As one of the most important goals is to give maximum support to its customers during a design phase, GF Piping Systems offers BIM content for market leading BIM Software.

Where standard Autodesk Revit libraries for the MEP (Mechanical, Electrical & Plumbing) Industry are generic and limited, our GF Piping Systems' BIM content supports an engineer more accurately in the design process. It allows a designer to setup piping systems with reallife dimensions preventing errors and saving time. During an entire process, from initial concept design phase until delivery, an accurate bill of materials is available, showing detailed product information.

Customers' benefits:

- Package delivery
  - Embedded bill of material
  - Complete assortment overview and easy copying into specific project
- Real-life constructionlength
- Embedded article or product number and description
- 3D clearance zone

The first GF BIM library offers the content for COOL-FIT 2.0, INSTAFLEX and JRG Sanipex. GF Piping Systems products' portfolio for Autodesk Revit will be continuously expanded further and could be accessed via http://bim.gfps.com

Environmental product declaration

System

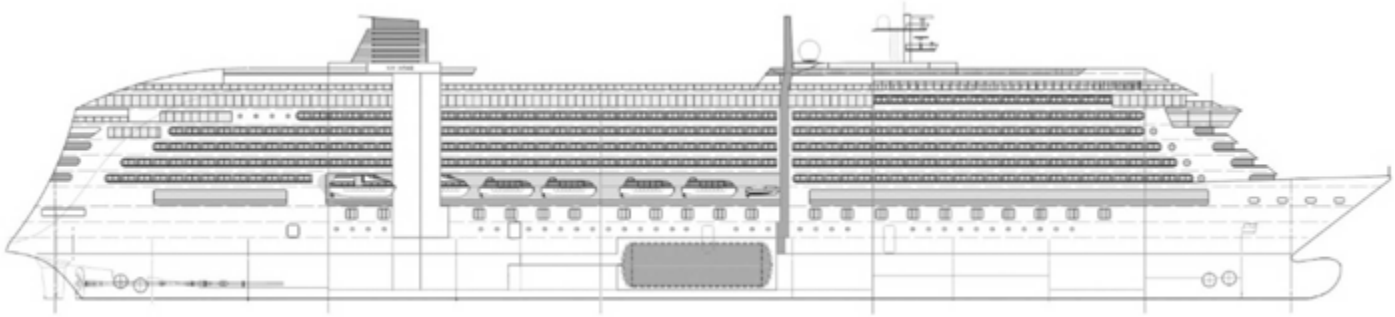
As an abstract of the Life Cycle Assesment (LCA) you will find follwing EPD (Environmental Product Declaration) regarding Polybutene installation. The entire EPD has been made according to ISO 15804 and is available for download on our website: www.gfps.com/sustainability

The analyzed case represents an exemplary system for the transport of fresh water to the cabins of a cruise ship. The installed piping system consists of the dimensions d110 (riser), d50 (decks) and d16 (cabins). The ship which has a length of 340 m comprises 18 decks with a length of 280 m and a total of 1 800 cabins. The system is installed in a dockyard in Turku (Finland). The used jointing technologies are socket welding and electrofusion.

Transferability of results to land based applications

From a piping system perspective, a cruise ship is nothing different than a swimming house. The installed product to provide hot and cold water on a ship are the same as installed in land based applications (like a hotel, hospital or an apartment building) to provide the same service.

The data in the EPD refer exactly to the scope and functional unit defined in the underlying LCA. However, the environmental impacts of an LCA calculated for a land based application would still indacate the product phase and the use phase as the two dominant phases.



Materials

The material of the main pipe system components (pipes and fittings) is PB. The whole system consists of the materials as listed below.

Reference service life time

20 years

Functional unit (FU)

The transport of hot and cold water in a PB piping system on a cruise ship via a riser (d110) and the decks (d50) to the taps of the toilet, shower and sink in the cabins (d16) over the whole lifetime of the system.

Material		Weight (kg)
PB		10 777
Brass		6 397
Plastics (other than PB)		403
Rubber		40
Steel		25
Paper		18
Printed wiring board		7
Other metals		6
Wire		5
Pump	Iron	2 356
	Bronze	398
	Steel	217
	Other metals	33
	Rubber	8
	Neoprene	2
Motor	Steel	1 752
	Other metals	976
	Plastics	19
	Insulation material	18
	Chemicals organic, not specified	9
	Paint	7

The system mainly consists of GF Piping Systems components. However, to complete the system also external components (Ext.) which are not produced by GF Piping Systems are necessary. The calculation of the environmental impact of these products is based on publicly available data and assumptions.

	Product Code	Pieces or meter	Material
System Components			
Cabin			
INSTAFLEX pipe, d16	760856606	32 400 m	PB
INSTAFLEX socket, d20	761066661	3 600	PB
INSTAFLEX electrofusion reducer d20/d16	761069277	3 600	PB (body) and others
INSTAFLEX elbow 90°, d16	760854842	7 200	Brass
INSTAFLEX brass tee 90°, equal, d16	760853125	7 200	Brass
INSTAFLEX single pipe outlet with flange, d16	760853013	10 800	Brass
Deck			
INSTAFLEX Pipe PB, d50	760856611	10 080 m	PB
INSTAFLEX weld-in-saddle, d50-d20	761068003	3 600	PB
INSTAFLEX electrofusion coupler, d50	761069205	1 728	PB (body) and others
Ball valve type 546, d20	760000343	3 600	PP-H (body) and others
Riser			
INSTAFLEX pipe, d110	760856615	180 m	PB
INSTAFLEX tee 90° equal, d110	761066629	72	PB
INSTAFLEX reducing bush, d110/d63	761066747	72	PB
INSTAFLEX reducing bush, d63/d50	761066690	72	PB
Pump connection			
INSTAFLEX Pipe PB, d110	760856615	10 m	PB
INSTAFLEX electrofusion coupler, d110	761069267	8	PB (body) and others
INSTAFLEX electrofusion elbow 90°, d110	761069223	1	PB (body) and others
INSTAFLEX flange adapter, d110	761069315	4	PB
INSTAFLEX backing flanges PN 16, d110	761065278	4	Iron
Butterfly valve type 567, d110	167567005	2	PP-H (body) and others
Motor	Ext.	6	Various metals and others
Pump	Ext.	6	Various metals and others

Parameters describing environmental impacts

	Impact category	Global warming	Ozone depletion	Acidification of soil and water	Eutro-phication	Photo-chemical ozone creation	Abiotic depletion - non fossil	Abiotic depletion - fossil
								
		kg CO_2 eq	kg CFC-11 eq	kg SO_2 eq	kg PO_4^{3-} eq	kg C_2H_4 eq	kg Sb eq	MJ
A1-3	Product stage	8.72E+04	7.30E-02	9.87E+02	4.23E+02	6.19E+01	1.31E+01	2.00E+06
A4	Transport to installation	4.01E+03	6.35E-04	2.66E+01	4.94E+00	7.85E-01	2.06E-02	5.95E+04
A5	Installation	2.83E+03	3.21E-04	8.42E+00	1.64E+00	2.38E+01	1.73E-02	3.65E+04
B1-5	Use, Maintenance, Repair, Replace-ment, Refurbish-ment	0	0	0	0	0	0	0
B6	Operational energy use	7.73E+05	9.20E-02	7.12E+03	4.18E+02	3.16E+02	1.18E-01	1.01E+07
B7	Operational water use	0	0	0	0	0	0	0
C1	De-construction/ Demolition	0	0	0	0	0	0	0
C2	Transport to end-of-life treatment	4.21E+03	6.41E-04	1.55E+01	2.97E+00	5.34E-01	3.41E-02	6.05E+04
C3	Waste processing	2.86E+04	1.67E-05	2.88E+00	6.43E-01	1.02E-01	3.77E-04	1.96E+03
C4	Disposal	0	0	0	0	0	0	0

The GF world of plastic piping

System	Material	Colour	Flammability
ABS	ABS	Mid Grey	Bright flame, drips, continues to burn away from flame
AQUASYSTEM	PP-R	Light brown Green/Grey	Bright flame, drips, continues to burn away from flame
Harvel Blazemaster	PVC-C	Orange	In flame carbonises, extinguishes away from flame
CONTAIN-IT Plus	PE100&PVC-U Containment pipe/ inside variable	Black/Grey/ Transparent	Bright flame, drips, continues to burn away from flame
CONTAIN-IT	PVC-U/inside variable	Transparent	In flame carbonises, extinguishes away from flame
COOL-FIT ABS Plus	ABS/PUR/PE	Black	Bright flame, drips, continues to burn away from flame
COOL-FIT PE Plus	PE/PUR/PE	Black	Bright flame, drips, continues to burn away from flame
Double-See	PVC-U&PVC-C (Containment)	Transparent	In flame carbonises, extinguishes away from flame
ecoFIT	PE100&PE80	Black	Bright flame, drips, continues to burn away from flame
ELGEF Plus	PE	Black	Bright flame, drips, continues to burn away from flame
FUSEAL	PP-NFR	Grey/Blue	In flame carbonises, extinguishes away from flame
FUSEAL 25/50	PVDF	Blue	In flame carbonises, extinguishes away from flame
iFIT	PB, ML, PEX	White	Normal flammable
INSTAFLEX	PB	Grey	Continues to burn away from flame
MULTI/JOINT	GGG45/NBR or EPDM	Red/Black	Metal, non-flammable
PRIMOFIT	Malleable cast iron	Black/Galvanised	Metal, non-flammable
PROGEF Natural	PP-R	Transparent	Bright flame, drips, continues to burn away from flame
PROGEF Standard	PP-H&PP-R	Light Beige	Bright flame, drips, continues to burn away from flame
PROGEF Plus	PP-H&PP-R	Light Beige	Bright flame, drips, continues to burn away from flame
PVC-C	PVC-C	Light Grey	In flame carbonises, extinguishes away from flame
PVC-U	PVC-U	Dark Grey	In flame carbonises, extinguishes away from flame
PVC-U clear	PVC-U	Transparent	In flame carbonises, extinguishes away from flame
SANIPEX MT	PE-x/Al/PE-x	Black	
SeaCor	PVC-C	Dark Grey	In flame carbonises, extinguishes away from flame
SYGEF Plus	PVDF HP (High purity)	White - Opaque	In flame carbonises, extinguishes away from flame
SYGEF Standard	PVDF	White - Opaque	In flame carbonises, extinguishes away from flame
Harvel Shapes **	PVC/CPVC - PP/HDPE	Various/Custom	In flame carbonises, extinguishes away from flame

System	Operating Temperature	Dimension
	-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140	
ABS	-50° C to + 60° C (d250 - d315 oper. temp +40° C)	d16 - d315, 3/8 - 8 inch
AQUASYSTEM	0° C to +95° C	d20 - d125
Harvel Blazemaster	0° C to +80° C	3/4 - 3"
CONTAIN-IT Plus	-40° C to + 140° C	d50/20 - d315/225
CONTAIN-IT	-0° C to + 60° C (outer)	4 + 6" outer
COOL-FIT ABS Plus	-50° C to + 40° C	d25 - d315
COOL-FIT PE Plus	-50° C to + 50° C	d250 - d450
Double-See	0° C to + 60° C	1 1/2 - 10"
ecoFIT	-50° C to + 60° C	d20 - d630 *
ELGEF Plus	-50° C to + 60° C	d20 - d2 000
FUSEAL	0° C to +100° C	1 1/2 -18"
FUSEAL 25/50	0° C to +140° C	1 1/2 - 6"
iFIT	0° C to +95° C	d16 - d32
INSTAFLEX	-10° C to +95° C	d16 - d225
MULTI/JOINT	-5° C to +50° C	d50 - d2 000
PRIMOFIT	-20° C to +105° C	3/8 - 4 inch/d20-d63
PROGEF Natural	0° C to +80° C	d20 - d110
PROGEF Standard	0° C to +80° C	d16 - d500
PROGEF Plus	0° C to +80° C	d20 - d315
PVC-C	0° C to + 80° C	d16 - d225, 1/4 - 24 inch
PVC-U	0° C to + 60° C	d6 - d400, 1/8 - 24 inch
PVC-U clear	0° C to + 60° C	1/4 - 12"
SANIPEX MT	0° C to + 95° C	d16 - d63
SeaCor	0° C to + 80° C	1/2 -6"
SYGEF Plus&Standard	-20° C to + 140° C	d16 - d450
Harvel Shapes **	0° C to + 80° C	1/4 - 12" (up to 22" PP/HDPE)

Jointing	Density (g/cm³)
Solvent cement	1.03
Butt, socket&electro fusion	0.90
Solvent cement&mechanical	1.55
Depending on material	–
Solvent cementing	–
Solvent cementing	–
Electro fusion	–
Solvent cement	1.4-1.52
Butt, socket, IR&electrofusion	0.93-0.95
Electro fusion	–
Electro fusion	0.9
Electro fusion	1.78
Push fit	0.94
Butt, socket&electro fusion, compression	0.94
Mechanical joints	–
Mechanical joints	–
Butt, BCF&IR	0.90
Butt, socket fusion&IR	0.90
Butt, socket fusion&IR	0.90
Solvent cement	1.5
Solvent cement	1.38
Butt fusion, Socket fusion	1.38
Mechanical joints	0.905
Solvent cement	1.38
Butt fusion, BCF&IR	1.78
Butt, socket fusion, BCF&IR	1.78
Generally N/A-semi finished shape for machining	–

Benefit
Excellent for cold water and chilled applications
Excellent temperature - pressure behaviour
Fire Sprinkler system
Safely conveying hazardous media with process reliability
Safely conveying hazardous media with process reliability
Three-in-One system, excellent properties
Three-in-One system, excellent properties
Safety system to transport hazardous media
UV&weather resistance, flexible and strong at low temperature
Leak free welded system
Resistant to alkalis, alcohols, acids, solvents and salt solutions
Resistant to alkalis, alcohols, acids, solvents and salt solutions
Easy jointing, for all building services applications
Hot and cold water sanitary system, compressed air
Connection to all types of pipes
Corrosion retarding, drinking water friendly
Pigment free polypropylene with smooth surface
High stress fracture-, pressure-, abrasion-, corrosion resistance
Silicon-free or oil-free system with a high pureness factor
Chemical and higher temperature resistant
Easy and fast to joint, very good chemical resistance
Visual monitoring of Process
Hot and cold water system, hygienically perfect
USA coast guard approved piping
High purity, outstanding chemical resistance, UV-resistant
Semi-finished rod/tube/profiles, optimal for machining, excellent chemical & corrosion resistance

System	Nominal Pressure (PN)
ABS - BS inch	**PN15** (Class E $^{3}/_{8}$ - 4")
	PN12 (Class D 6")
	PN9 (Class C 1 - 8")
	PN12 (Class 7T $^{1}/_{2}$ - 2")
ABS - Metric	**PN10** (d20 - d225)
	PN6 (d250 - d315)
AQUASYSTEM	**PN20**
Harvel Blazemaster	**PN depending on size** ($^{1}/_{2}$ - 3") Schedule System
CONTAIN-IT Plus	**PN depending on material**
CONTAIN-IT	**PN3** Schedule System
COOL-FIT ABS Plus	**PN10** (d25 - d225)
COOL-FIT ABS Plus	**PN6** (d250 - d315)
COOL-FIT PE Plus	**PN10** (d250 - d450)
Double-See	**PN4**
ecoFIT	**PN16** (d20 - d630)
	PN10 (d50 - d630)
ELGEF	**PN16** (d20 - d1 000)
	PN10 (d160 - d2 000)
FUSEAL	**PN depending on size** ($1^{1}/_{2}$ - 18")
FUSEAL 25/50	**PN depending on size** ($1^{1}/_{2}$ - 6")
iFIT	**PN10**
INSTAFLEX	**PN16** (up to d110; PN10 d125 - d225)
MULTI/JOINT	**PN16** (restraint)
	PN25 (non restraint)
PRIMOFIT	**PN16**
PROGEF Natural	**PN10** (d20 - d63)
	PN6 (d75 - d110)
PROGEF Standard	**PN10** (d16 - d500)
	PN6 (d50 - d500)
PROGEF Plus	**PN10** (d20 - d315)
PVC-C Metric	**PN16** (d16 - d160)
	PN10 (d75 - d225)
PVC-C SCH80/40	**PN depending on size** ($^{1}/_{4}$ - 24")
PVC-U BS INCH	**PN16** (Class E $^{3}/_{8}$ - 6")
	PN12 (Class D $^{1}/_{4}$ - 4")
	PN9 (Class C 2 - 8")
	PN12 (Class 7T $^{3}/_{8}$ - 2")
PVC-U SCH80/40	**PN depending on size** ($^{1}/_{8}$ - 24")
PVC-U Metric	**PN16** (d6 - d160)
	PN10 (d25 - d315)
	PN6 (d50 - d400)
PVC-U clear SCH80/40	**PN depending on size** ($^{1}/_{4}$ - 12")
SANIPEX MT	**PN10** (d16 - d63)
SeaCor	**PN depending on size** ($^{1}/_{2}$ - 6")
SYGEF Plus&Standard	**PN16** (d16 - d225)
	PN10 (d90 - d450)
Harvel Shapes **	N/A–solid rods/tubes/profiles–semi-finished, optimal machining

inch - metric ranges (mm)

(Pipe Sizes nearest equivalent)

inch	$^{3}/_{8}$	$^{1}/_{2}$	$^{3}/_{4}$	1	$1^{1}/_{4}$	$1^{1}/_{2}$	2	$2^{1}/_{2}$	3	4	4	5	6	6	8	8	10	10	12	14	16	18	20	20	24
d	16	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630
DN	10	15	20	25	32	40	50	65	80	100	100	125	150	150	200	200	250	250	300	350	400	450	500	500	600

d = mm

* For more information about larger dimensions please contact our local sales companies.
Visit our website for more detail system information: www.gfps.com

** Detail Harvel Shapes Information: www.harvelshapes.com

Prefabrication

Introduction

As an example for prefabrication we show you an easy method using the well known malleable cast iron fittings. This method can be used as well for plastic piping systems.

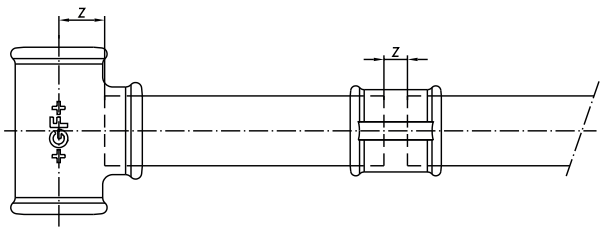
The z dimension installation method, developed by GF in conjunction with experienced installers of domestic and industrial piping systems, has been proving its worth for years in practical applications. The method offers a basis for efficient planning, preparation for work and preliminary assembly and can result in savings in time and effort:

- staff use can be reliably planned
- administrative work more easily completed
- calculation and costing simplified
- optimised machine use
- reduced storage requirement of own fittings and pipes
- optimisation of transportation the pipeline layout can easily be recognized by the pipeline diagram.

z dimension

The z dimension – also called «laying length» is the middle distance between

- installed pipe end and the axis of the fitting or
- the ends of two installed pipes



The z dimensions are calculated from the overall lengths less the average length of engagement. z dimensions were introduced by GF with a view to rational planning and preparation for work.

Requirements

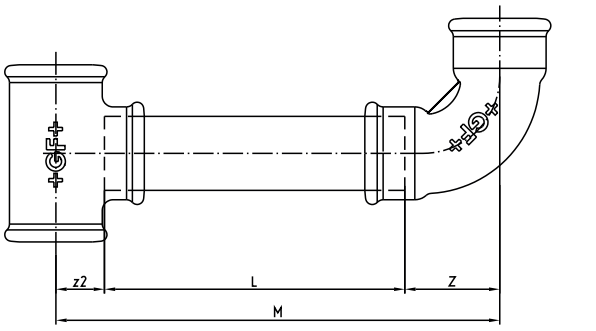
The z dimension method relies on:

- knowledge of the pipeline layout
- knowledge of the space requirements of valves, appliaces and their locations.
- coordination with architect, planner, works management and the other businesses who work may have an influence on the pipeline layout.
- use of fittings with consistant dimensional accuracy, such as GF's.
- Pipe threads conforming to standards, implying combined exact adjustment of the threading machine.

z dimension and measurement procedure

z dimension and uniform measuring procedure are the core of the GF installation method.
The z dimension is the pipe installers «design dimension». With its help he can easily calculate the exact pipe length between fittings and/or valves. The principle of forms the basis for determining and using the z dimension.

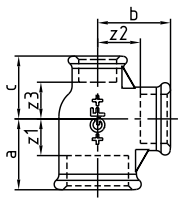
standardised measuring centre - centre = M



Pipe length L = M - (z2 + z)

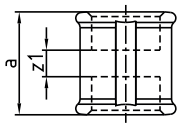
Prefabrication

The z dimension is calculated as the difference between «dimension face – middle» (a, b or c) and length of engagement of the pipe thread.

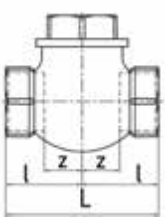


For fittings, e.g. tee no. 130, reduced branch and run:
z1 = a-length of engagement
z2 = b-length of engagement
z3 = c-length of engagement

The fitting's bead deliberately put on the GF fittings can be used as a measuring aid.



Exception – socket no. 270, 271:
z1 = a-2 length of engagement



For valves:
z = l – length of engagement
If the total overall length is indicated by L,the following applies:

z = L/2 – length of engagement

Pipe threads

Another precondition for using the GF z dimension method is that the pipes are cut with the correct standardised threads. This assures that all pipes with the connecting pieces can be screwed together equally far and the dimensions M taken asa base are also correct after installation.

The pipe thread must be cut clean and to EN 10226-1 standard (or ISO 7-1 with a taper of 1:16). The taper pipe thread also produces a strengthening of the pipe residual wall in the second half of the thread. Unequal thread lengths influence the centre-centre dimension M and have a negative effect particularly for straight section with several branches.

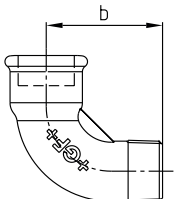
Note:
The centre-centre dimension (M) can show a permitted tolerance of ± 1/2 thread.

Length of engagement

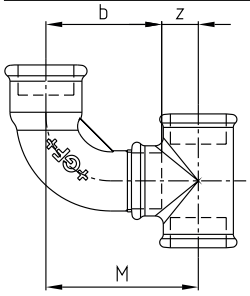
The nominal engagement length of the pipe external thread are (rounded values):

Joint size	Average length of engagement in mm
1/8	**7**
1/4	**10**
3/8	**10**
1/2	**13**
3/4	**15**
1	**17**
11/4	**19**
11/2	**19**
2	**24**
21/2	**27**
3	**30**
4	**36**

Prefabrication

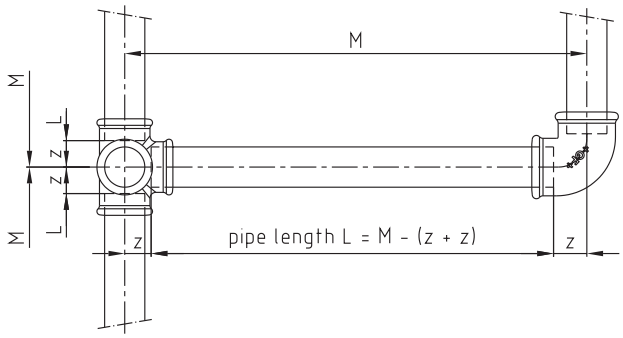


b is the distance of internal thread centre to face of the external thread.

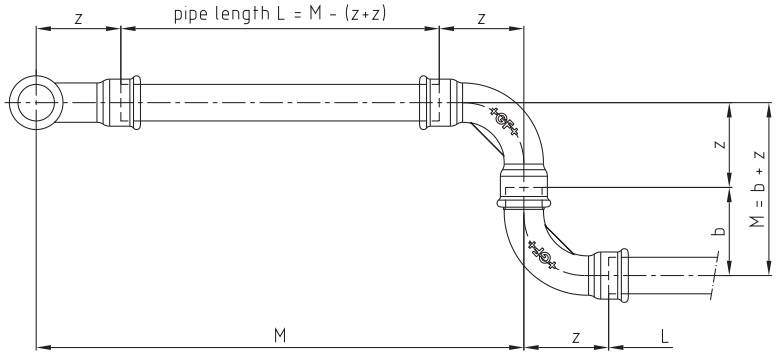


For fittings combinations with internal and external threads the sum of z + b produces the axial distance M:

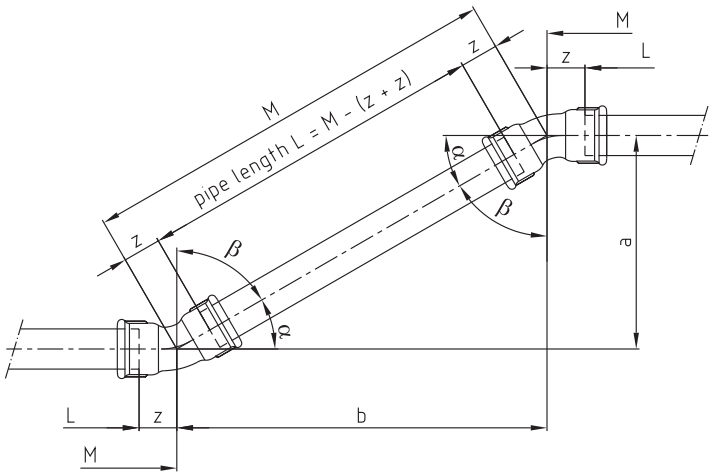
M = z + b



Principle of the z dimension installation method:
uniform measuring
centre - centre = M



Exact pipe thread lengths produce exact M dimensions.



The M dimension for sloping pipeline parts is easily calculated with the factor or numerical table.

Prefabrication

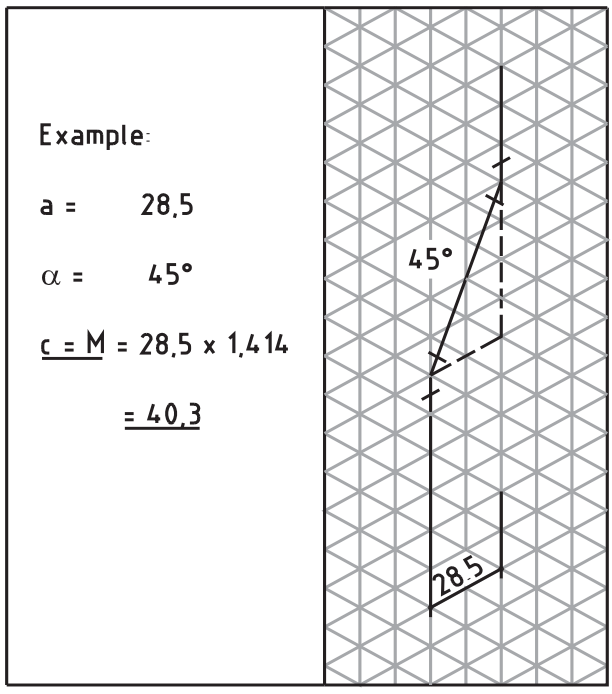
Parts of a pipeline diverging from the horizontal and verticals can only be accurately marked out in a few cases. Accurate results are obtained by rectangular measuring and determining the remaining (triangle) side lengths.

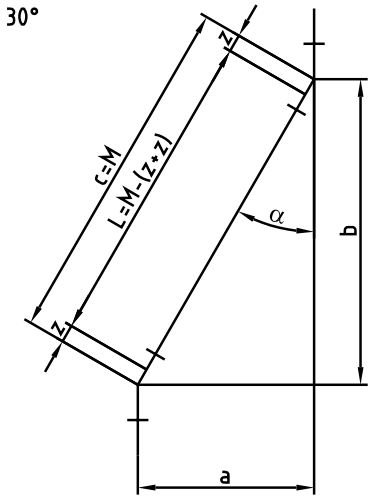
There are two possibilities for calculating the pipe lengths by means of the z dimensions:

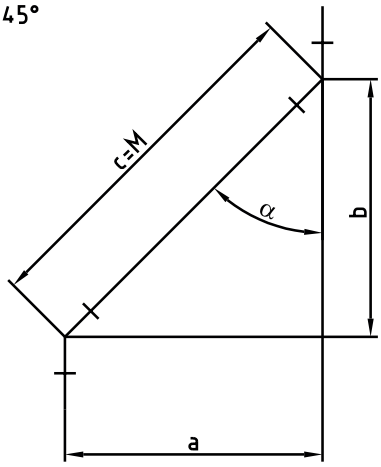
1. Factor table

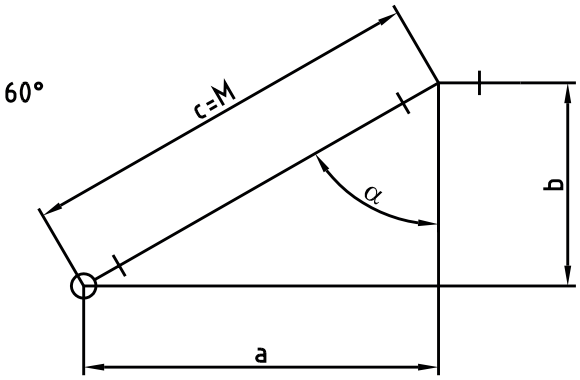
given:		a		b	
		Factor for		Factor for	
α	β	b	c = M	a	c = M
75°	15°	0,268	1,035	3,732	3,864
60°	30°	0,577	1,155	1,732	2,000
45°	45°	1,000	1,414	1,000	1,414
30°	60°	1,732	2,000	0,577	1,155
15°	75°	3,732	3,864	0,268	1,035

α = given angle
β = accompanying angle
angle-dependent factors multiplied with the given dimension a or b = sought dimensions b and c or a and c.





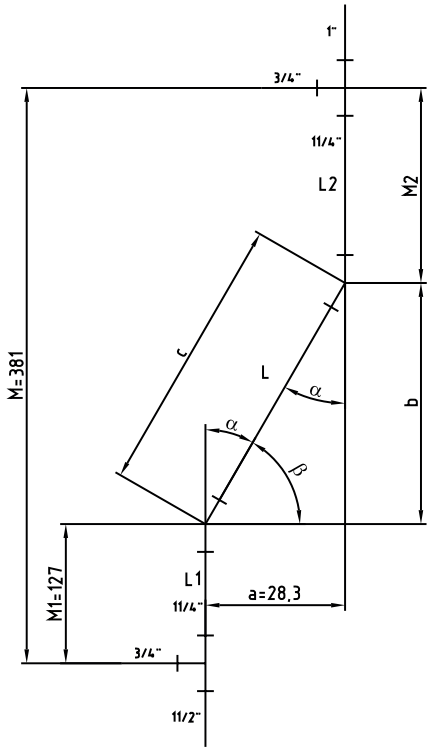




Prefabrication

2. Numerical table

Example:
Tier in a rising train of pipes. The dimensions M, M1 and a are taken on the site, the remainder are to be determined from the table.



Planned fittings (from bottom to top):
1 tee no. 130 - 11/2 x 3/4 x 11/4
2 bends no. 51 - 11/4
1 tee no. 130 - 11/4 x 3/4 x 1

The projection a is 28.3 cm = 283 mm. 283 consists of 3 + 80 + 200. In columns b and c we find the partial values belonging to 3, 80 and 200 for the perpendiculars b and the slopes c.

In this case lengths b and c result from adding up the partial values α = 30°, β = 60°.

a (known)	b	c
3 mm	5,2 mm	6 mm
80 mm	138,6 mm	160 mm
200 mm	346,4 mm	400 mm
283 mm	**490,2 mm**	**566 mm**
or a=28,3 cm	b=49,0 cm	c= 56,6 cm

Pipe length L = c - (2 x z dimension of bend no. 51 - 11/4)
z dimension bend = 33 mm
L = 56.6 - (2 x 3.3) = 56.6 - 6.6 = 50 cm

Pipe length L1 = M1 - (sum of the z dimension of tee piece no. 130 - 11/2 x 3/4 x 11/4 and bend no 51 - 11/4)
z dimension tee no. 130 (on 11/4 exit) = 17 mm
z dimension bend = 33 mm
L1 = 127 - (1.7 + 3.3) = 127 - 5 = 122 cm

M2 = M - (M1 + b), M1 = 127, b = 49
M2 = 381 - (127 + 49) = 381 - 176 = 205 cm

Pipe length L2 = M2 - (sum of the z dimensions of bend no. 51 - 11/4 and tee piece no. 130 - 11/4 x 3/4 x 1)
z dimension bend = 33 mm
z dimension tee no. 130 (on the 11/4 exit) = 17 mm
L2 = 205 - (3.3 + 1.7) = 205 - 5 = 200 c

Clear outlining of the pipework

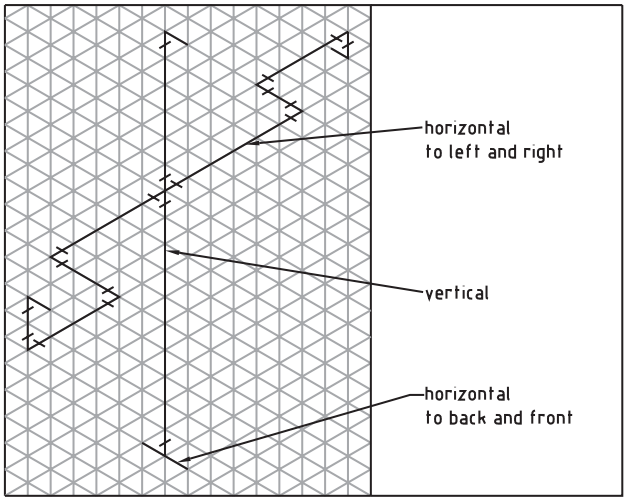
The isometric diagrams of pipes and horizontal projections are ideal for quick preparation when using the GF installation method.

The drawing of the pipework should be given in a simple but effective way. The diagrams can be sketched by the installer himself on the spot.

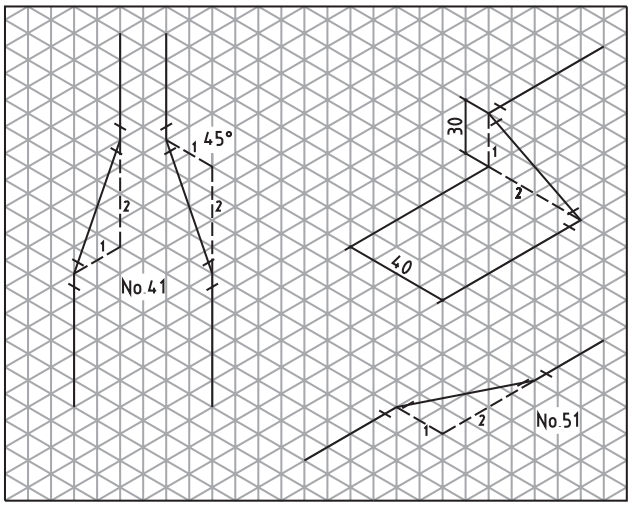
This type of representation enables quick outlining with no aids such as ruler, set square etc. either directly on the site of installation or according to a plan. The pipework system to be installed is alwaysclearly recognisable with all necessary fittings, valves etc.

The 30° pipeline diagram (3D plan) is intentionally not drawn to scale, i.e. long pipe sections are made shorter, short pipe sections are to a large extent made somewhat longer. In this way even extensive pipe systems can be represented on an A4 sheet of paper.

Pipelines running at right angles to each other are drawn as shown below:

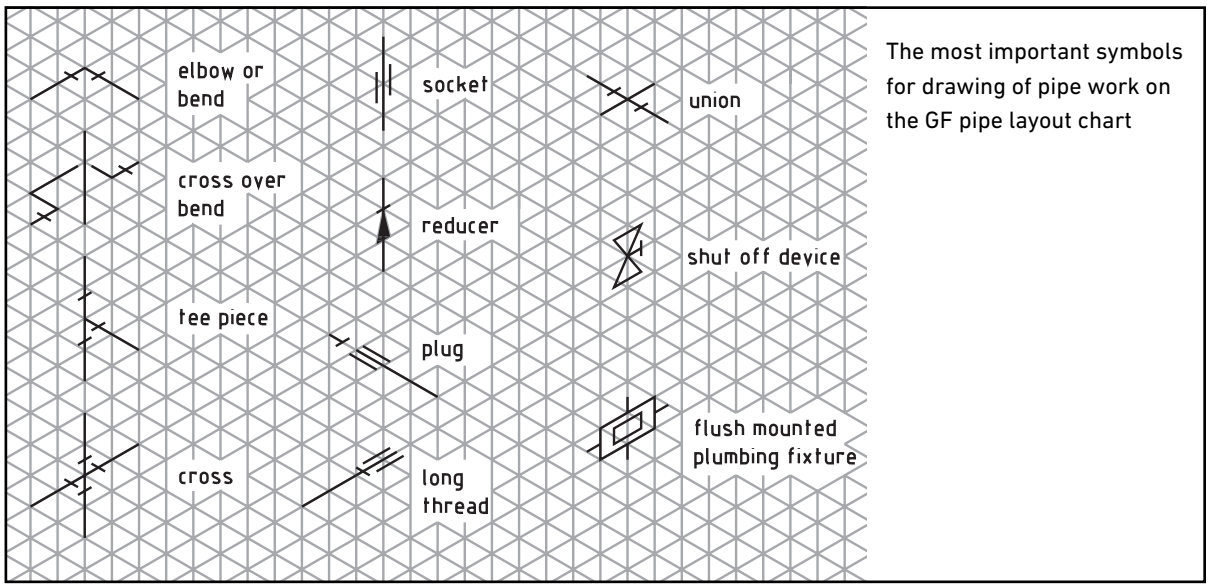


Pipelines sloping in relation to each other are drawn as shown in the example below:



Changes of direction are shown in the ratio of 2:1 or 1:2 irrespective of angles and dimensions. By drawing in the triangle as an aid the change of direction is set accurately. The divergence is established by giving the type of fitting (catalogue no. or angle) or by dimensioning.

Fittings and/or jointing points can be marked with a small dash, valves with the standardized symbols.



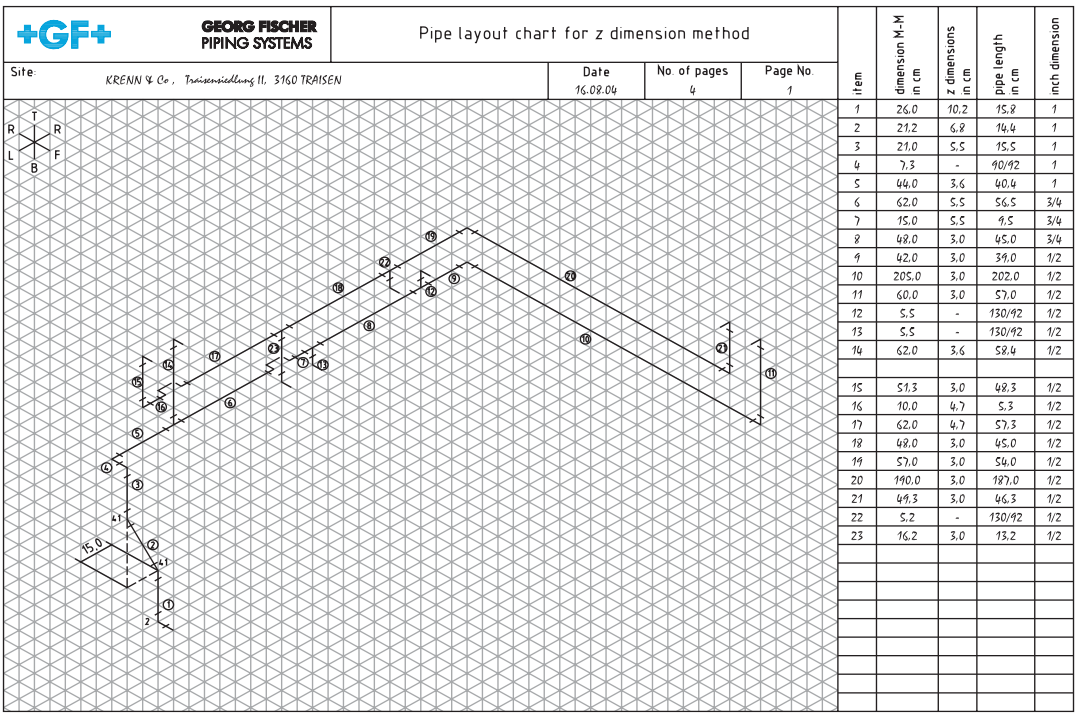
The most important symbols for drawing of pipe work on the GF pipe layout chart

The GF pipe layout chart

The 30° pipeline diagram can be drawn on the GF pipe layout chart, for example. The oblong format selected is particularly suitable for use on the site. The area available for sketching, either allows sections of pipelines to be portrayed, or even more extensive part installations (e.g. cellar quantization, floor distributers) to be reproduced.

The advantages of the GF pipe layout chart are obvious:

- division of the installation work
- quick drawing of the pipework diagram
- clear record of the centre - centre dimensions
- very simple pipe length calculation
- basis for a summary of pipe components
- costing document
- thus offering real rationalisation:
- measure, mark, cut into lengths and cut the thread for all pipes of the same diameter one after the other.
- If the project documents are saved, the pipe layout chart makes it possible to determine the pipeline layout exactly even years later. Extensions or repairs can be carried out considerably more easily.



item	dimension M-M in cm	z dimensions in cm	pipe length in cm	inch dimension	
1	26.0	10.2	15.8	1	CW
2	21.2	6.8	14.4	1	CW
3	21.0	5.5	15.5	1	CW
4	7.3	-	90/92	1	CW
5	44.0	3.6	40.4	1	CW
6	62.0	5.5	56.5	3/4	CW
7	15.0	5.5	9.5	3/4	CW
8	48.0	3.0	45.0	3/4	CW
9	42.0	3.0	39.0	1/2	CW
10	205.0	3.0	202.0	1/2	CW
11	60.0	3.0	57.0	1/2	CW
12	5.5	-	130/92	1/2	CW
13	5.5	-	130/92	1/2	CW
14	62.0	3.6	58.4	1/2	CW
15	51.3	3.0	48.3	1/2	HW
16	10.0	4.7	5.3	1/2	HW
17	62.0	4.7	57.3	1/2	HW
18	48.0	3.0	45.0	1/2	HW
19	57.0	3.0	54.0	1/2	HW
20	190.0	3.0	187.0	1/2	HW
21	49.3	3.0	46.3	1/2	HW
22	5.2	-	130/92	1/2	HW
23	16.2	3.0	13.2	1/2	HW

Conclusions

The GF z dimension installation method is the tried and tested basis for the skilled worker and industrial prefabrication of pipework installations.

Its objective is to bring together the same repetitive production sequences to achieve a trouble-free flow of materials and work, to avoid idle time, minimise setting up time and doing the same work twice and provide the optimal solutions.

This calls for:

- division of the pipework systems in installation sections.
- division of production in pre-assembly (in the workshop or on site) and installation. It is avantageous to prepare as large a number of the installations as possible in the workshop.
- summarised record of all important site dimensions, to be able to carry out in series prefabrication.

A main rule for this:
Gather as many pipework sections as possible from the planning documents.

However, where sections must be decided on the spot (offsetting of variations in the dimensions of the solidium) the following applies:

Always measure where pipelines are to be laid.

The GF z dimension method enables:

- in series prefabrication
- rational use of material, skilled labour and machines
- reduction of installation times
- adaptability to building progress
- very large independence from building deadlines
- better preliminary conditions for carrying out non-local items
- better preliminary conditions for carrying out refurbishment work
- more accurate work with lower expenditure
- consistent quality

As a result of these advantages, installation planning, starting with the preliminary draft, should be included in the building plan. A prerequisiste of the rational running of building work is completed, co-ordinated planning of the implementation of work at its outset in its basic details.

+GF+

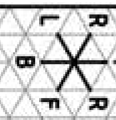
Pipe layout chart for z dimension method

Site:

Date

No. of pages

Page No.



item	
dimension M-M in cm	
z dimensions in cm	
pipe length in cm	
inch dimension	

Notes:

System overview INSTAFLEX

INSTAFLEX – the plastic piping system made of polybutene for applications in building services. Ideally suited for hot and cold water, cooling systems and compressed air. This system includes everything for conveying water from the basement to the tapping points.

Available in dimensions d16 – d315.

INSTAFLEX fits your application best

System solution

You benefit from the advantages of a system solution made of plastic for your installation from the building entry to the last tap. A single material from the basement to the roof.

Efficiency

You benefit from optimal cost. Prefabricated components reduces on-site time and costs.

Safety

You reap the benefits of having a permanently leak-proof and durable drinking water system.

Maintenance

The longevity of your drinking water system secures low maintenance.

Hygiene

INSTAFLEX made of polybutene provides safe and hygienic water.

Lifetime

Using INSTAFLEX, you benefit from the long lifespan of the material. Operating at 10 bar and 70°C, this system is designed for 50 years lifespan - the equivalent of two generations.

Solvent-free

INSTAFLEX is a solvent free ideal for drinking water system. During normal operation, the smooth pipe surface prevents deposits.

Corrosion-free

Installing INSTAFLEX, you have the advantages of a corrosion free drinking water system. Even during prolonged stagnation times no rusty water.

Life cycle assessment

Installing INSTAFLEX, you use the advantages of a material that can be fully recycled and has a low carbon footprint.

Approvals INSTAFLEX

LAND-BASED

AENOR
Spanish Association for Standardisation and Certification

001/ 006238

Global-Mark
Global-Mark Pty Ltd., Australia

GM-WM-040046-I02-R00
GM-WM-040130-I02-R00

BSi
British Standards Institution

KM 39698

kiwa
Kiwa N.V., Netherlands

K48336/2
K48341/02

aTg (BCCA)
Belgian Construction Certification Association

05/ 1870

ÖVGW
Östereichische Vereinigung für das Gas- und Wasserfach , Austria

W 1.119

CSTB
Centre Scientifique et Technique du Bâtiment, France

109-1777
167-1777

SVGW
Schweizerische Verein des Gas- und Wasserfaches, Switzerland

8703-1961
9403-3190

ACS
Attestation de Confirmité Sanitaire, France

LY 229
NY 081

VKF
Vereinigung Kantonaler Feuerversicherungen, Switzerland

Z 168819

DVGW
Deutscher Verein des Gas- und Wasserfaches e.V., Germany

DW-8501AQ3144
DW-8501BR0424
DW-850-1AT2528

WRAS
Water Regulation Advisory Scheme, England

1310511
1310512

Approvals INSTAFLEX

MARINE

ABS
American Bureau of Shipping

14-GD1218536-PDA

RINA
Royal Institution of Naval Architects, England

MAC375614CS

DNV-GL
Det Norske Veritas- Germanischer Lloyd, Norway

74455-96HH

BV
Bureau Veritas, France

35855/AO BV

LR
Lloyd's Register, England

12/00071(E3)

CCS
China Classification Society

SH13G00019
SH13G00020

Class NK
Nippon Kaiki Kypokai, Japan

13008H

RMROS
Russian Maritime Register of Shipping

15.40030.250

Technical Data

Pressure loss chart

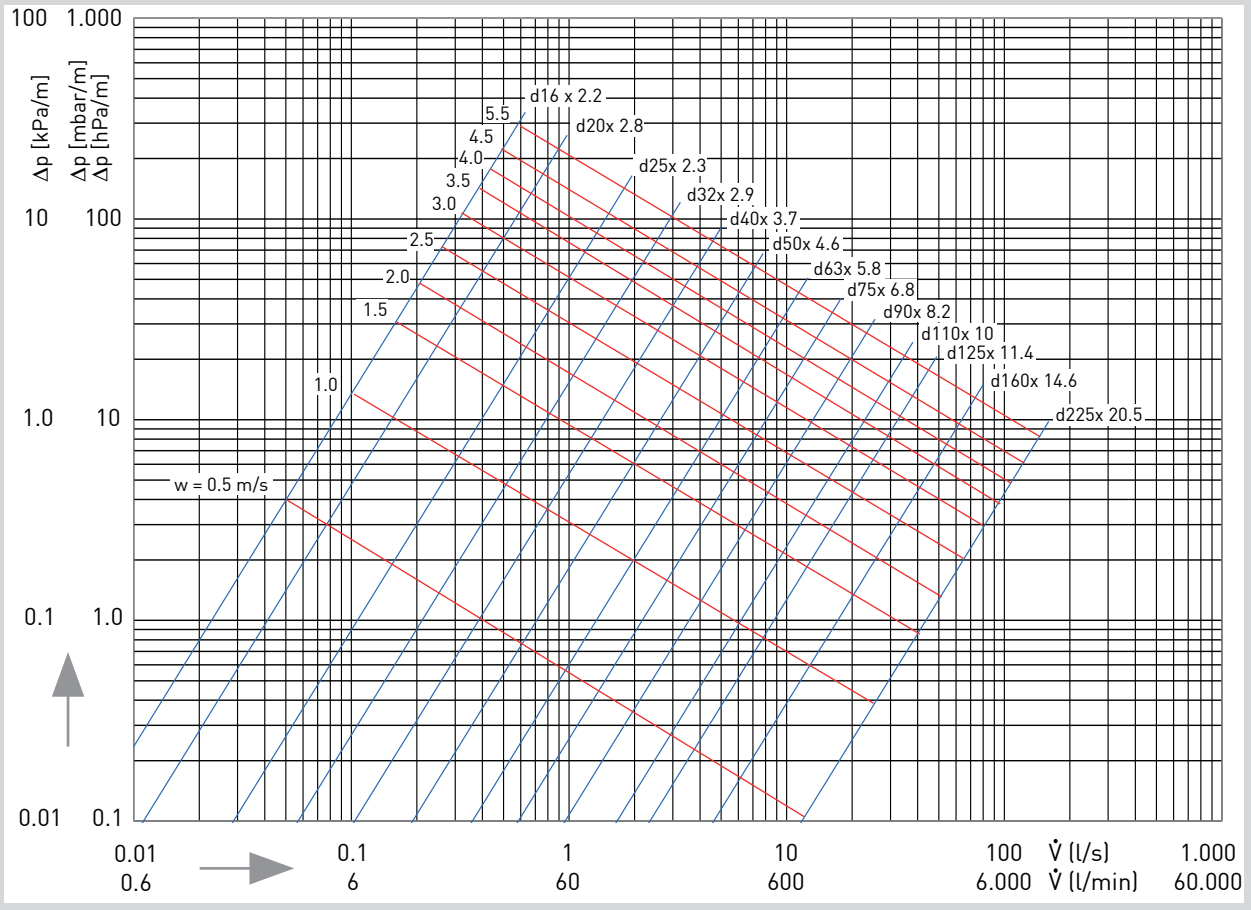
Pressure loss chart for INSTAFLEX PB pipes d16-d225

Pipe friction loss in relation to flow rate

Basis of calculation	
Water temperature ϑ_k	= 10°C
Surface roughness k	= 0.007 mm
Viscosity SI	= 0.00131 Pa·s
Density ρ	= 999.70 kg/m³

Recommended flow velocity according SVGW guideline W3/2013

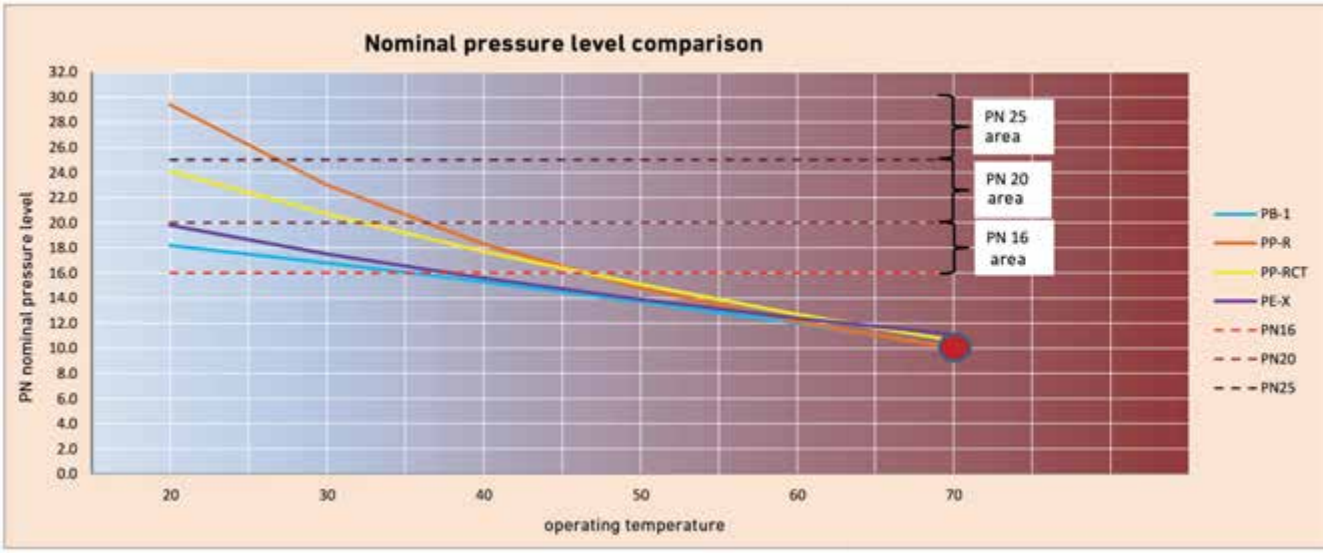
- max. 4.0 m/s for single outlet lines
- max. 3.0 m/s for apparatus lines
- max. 3.0 m/s for floor distribution lines
- max. 2.0 m/s for distribution lines



Correction factor values with different water temperatures / Facteurs de correction pour d'autres températures
Fattore di correzione per varie temperature

ϑ_w/(°C)	10	20	30	40	50	60	70	80	90	95
f	1.000	0.955	0.915	0.870	0.835	0.805	0.775	0.753	0.737	0.730

Technical Data



Mobile Engineering Tools

For an individual and accurate engineering of your application please try our state-of-the art engineering tools

Planning Assistance

You plan – and we back you with our valuable expertise. Our customers enjoy support in many ways from detailed information on products, systems and materials to practical online calculation tools and personal assistance.

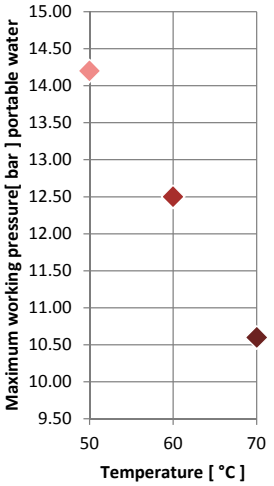
Personal Support

Our tools and documents answer many questions, but maybe not all. Your contact in your local sales office will provide you with the support you need in order to find a solution to your specific problem.

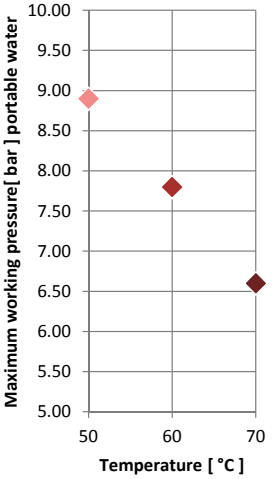
Technical Data

	Temperature [°C]	Time [years]	Polybuten PB-1
			Pipe serie s
			5
			SDR
			11
approved range	10	1	20.3
		5	20.1
		10	20.0
		25	19.7
		50	19.4
		100	19.1
	20	1	19.3
		5	19.1
		10	18.9
		25	18.5
		50	18.2
		100	17.8
	30	1	18.2
		5	17.9
		10	17.6
		25	17.2
		50	16.8
		100	16.5
	40	1	16.9
		5	16.5
		10	16.2
		25	15.7
		50	15.3
		100	15.0
	50	1	15.5
		5	15.0
		10	14.6
		25	14.1
		50	13.7
		100	13.4
	60	1	14.0
		5	13.2
		10	12.8
		25	12.3
		50	12.0
	70	1	12.3
		5	11.3
		10	10.9
		25	10.5
		50	10.1
calculated range	80	1	10.2
		5	9.3
		10	8.9
		12	8.8
		18	8.6
		25	8.4
	90	1	7.9
		4	7.2
		5	7.1
		6	7
		10	6.7
		15	6.5
	95	1	6.8
		2.5	6.3
		4	6
		5	5.9
		10	5.6

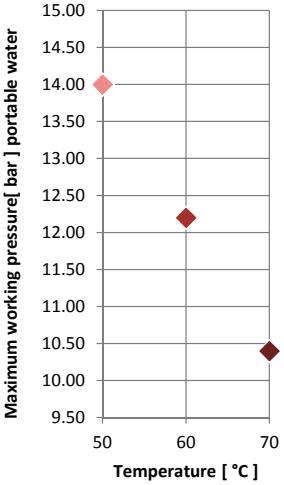
INSTAFLEX d16-d110
Working pressure (PN16)
expected lifetime 20 years



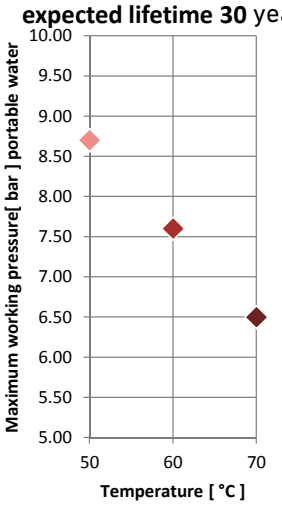
INSTAFLEX d125-d225
Working pressure (PN10)
expected lifetime 20 years



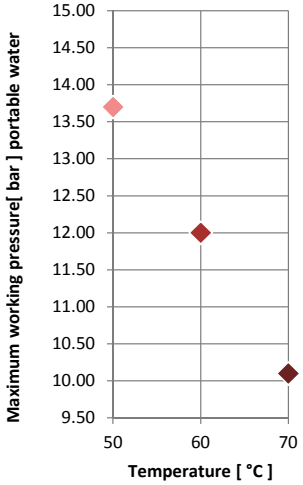
INSTAFLEX d16-d110
Working pressure (PN16)
expected lifetime 30 years



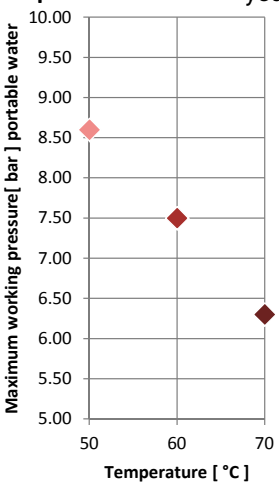
INSTAFLEX d125-d225
Working pressure (PN10)
expected lifetime 30 years



INSTAFLEX d16-d110 Working pressure (PN16) expected lifetime 50 years



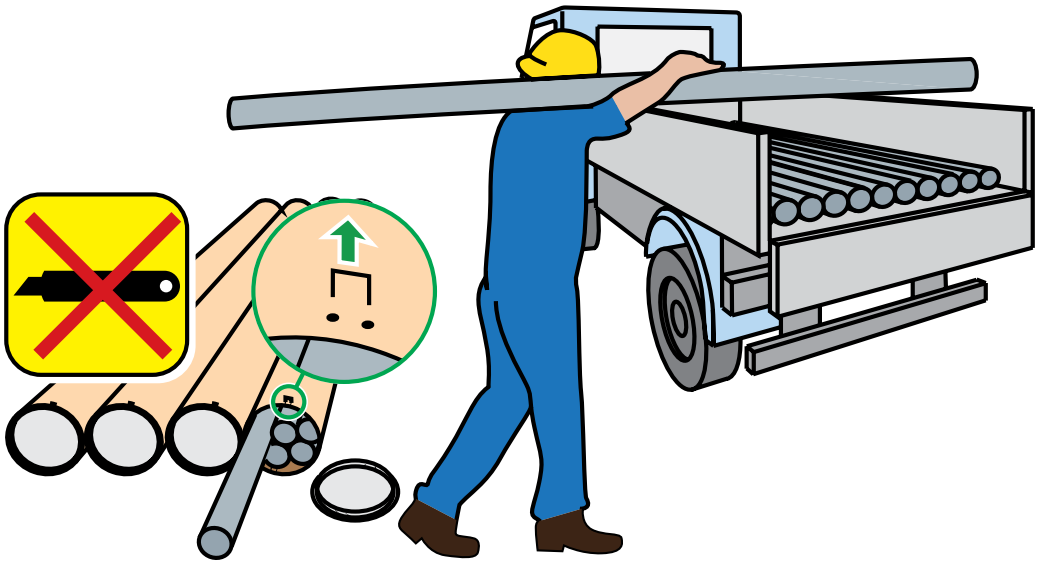
INSTAFLEX d125-d225
Working pressure (PN10)
expected lifetime 50 years

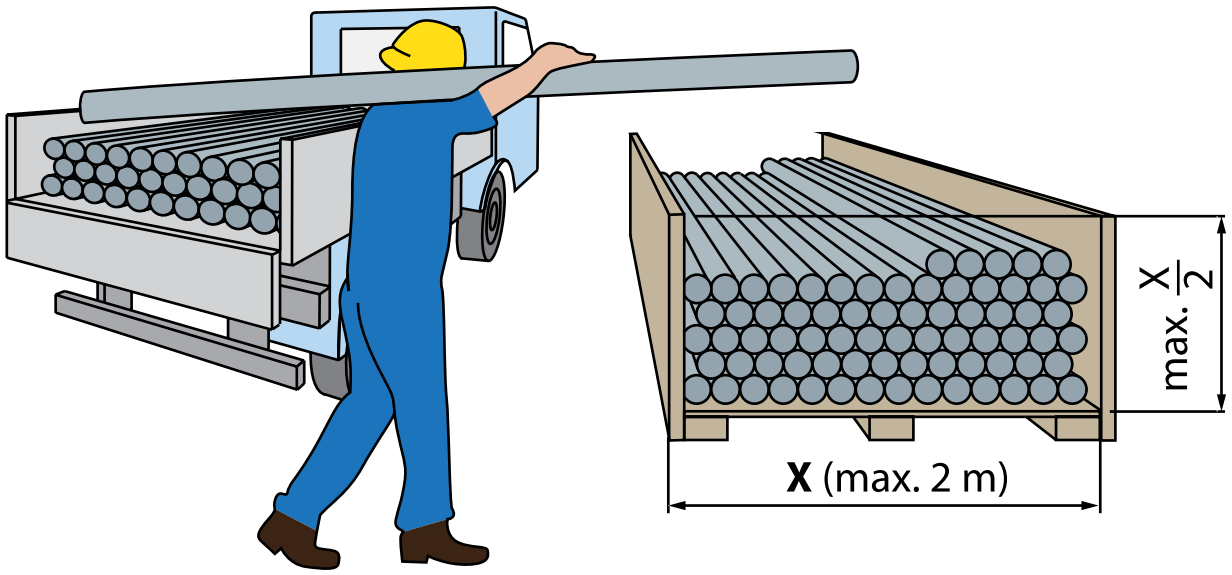


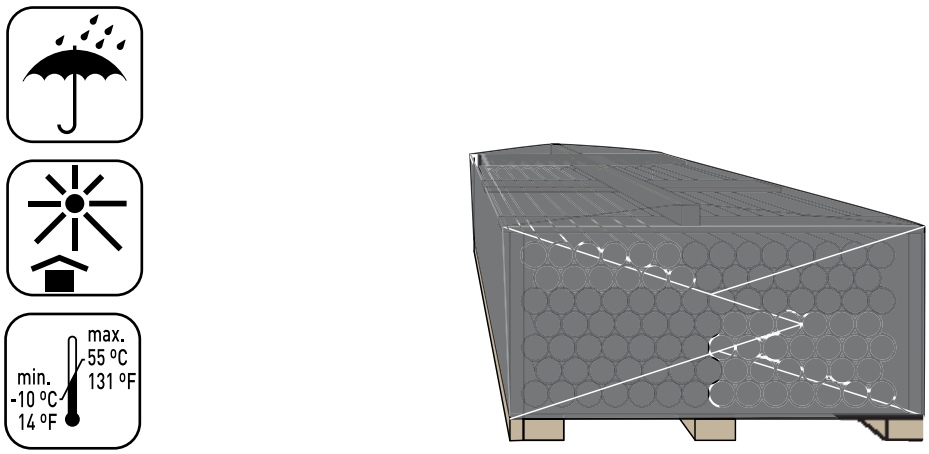
INSTAFLEX

Pipes

Working with INSTAFLEX







Pipes

PB pipe - bars

Packed in cardboard boxes / PN 16

d (mm)	s (mm)	Code	SP	Weight (kg)	Length (m)
16	2.2	**760 856 606**	52	0.097	5.8
20	2.8	**760 856 607**	52	0.151	5.8
25	2.3	**760 856 608**	58	0.165	5.8
32	2.9	**760 856 609**	23	0.270	5.8
40	3.7	**760 856 610**	17	0.416	5.8
50	4.6	**760 856 611**	17	0.645	5.8
63	5.8	**760 856 612**	6	1.020	5.8
75	6.8	**760 856 613**	6	1.440	5.8
90	8.2	**760 856 614**	6	2.060	5.8
110	10.0	**760 856 615**	6	3.050	5.8
125	11.4	**761 065 326**	6	3.950	5.8
160	14.6	**761 065 327**	6	6.460	5.8
225	20.5	**761 065 328**	6	12.700	5.8
315	28.6	**761 065 324**	3	17.800	3.0

PB pipe (coiled)

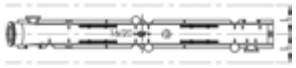
Packed in cardboard boxes
Packed in protective wrap

d (mm)	s (mm)	Length (m)	Code	SP	Weight (kg/m)
16	2.2	60	**760 853 389**	60	0.100
16	2.2	102	**760 853 395**	102	0.150
16	2.2	400	**760 856 624**	400	0.100
20	2.8	60	**760 853 390**	60	0.150
20	2.8	102	**760 853 397**	102	0.150
20	2.8	400	**760 853 398**	400	0.150
25	2.3	30	**760 854 946**	30	0.165

PB pipe in protective pipe (coiled)

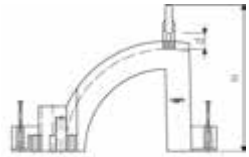
Packed in cardboard boxes

d (mm)	s (mm)	Code	SP	Weight (kg)	D (mm)
16	2.2	**760 853 387**	60	0.162	25
20	2.8	**760 853 388**	60	0.235	30
25	2.3	**760 854 910**	30	0.284	34



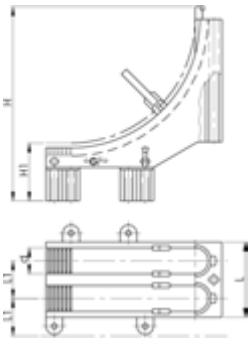
Pipe transfer piece d16 / d20

d (mm)	Code	SP	Weight (kg)	L (mm)	H (mm)
16 - 20	**760 853 299**	30	0.116	45	40



Pipe transfer bend d16 / d20

d (mm)	Code	SP	Weight (kg)	L1 (mm)	H (mm)
16 - 20	**760 853 300**	18	0.113	45	180

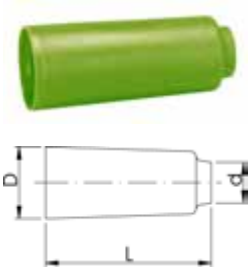


Pipe support d16 / d20

d (mm)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	H (mm)	H1 (mm)
16 - 20	**760 853 399**	12	0.269	90	45	235	70

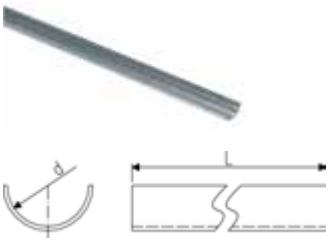
Cap for protective pipe

d (mm)	Colors	Code	SP	Weight (kg)	D (mm)	L (mm)
16	red	**762 101 234**	10	0.006	25	70
16	blue	**762 101 235**	10	0.005	25	70
20	red	**762 101 236**	10	0.006	30	70
20	blue	**762 101 237**	10	0.005	30	70
20	red	**760 854 988**	10	0.005	30	70
20	blue	**760 854 989**	10	0.006	30	70



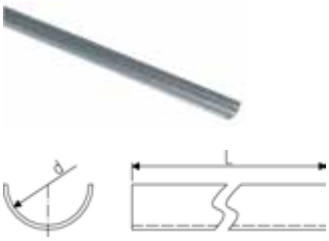
Cap for protective pipe

d (mm)	Colors	Code	SP	Weight (kg)	D (mm)	L (mm)
16	red	**760 854 986**	10	0.005	25	70
16	blue	**762 101 235**	10	0.005	25	70
20	red	**760 854 988**	10	0.005	30	70
20	green	**760 854 989**	10	0.006	30	70



Clip pipe support tray

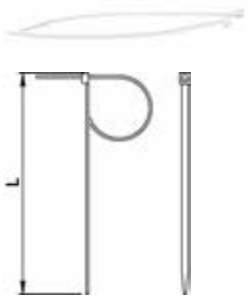
d (mm)	Code	SP	Weight (kg)	L (mm)
16	**760 856 602**	30	0.550	3000
20	**760 856 603**	30	0.680	3000
25	**760 856 604**	30	0.844	3000
32	**760 856 605**	30	1.073	3000



Pipe support tray

For diameter over d90 no pipe support is required

d (mm)	Code	SP	Weight (kg)	L (mm)
40	**760 854 928**	30	1.335	3000
50	**760 854 929**	30	1.662	3000
63	**760 854 930**	30	0.570	3000
75	**760 854 985**	30	2.480	3000



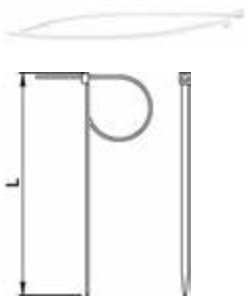
Pipe binder

d-d (mm)	Code	SP	Weight (kg)	L (mm)
16 - 40	**760 853 283**	100	0.000	200
50 - 75	**760 853 284**	100	0.001	300
90 - 110	**760 854 984**	100	0.003	430

Coupling for protective pipe

For pipe transfer piece 3891
From the INSTAFLEX range
* available as long as stock exist

	d (mm)	Code	SP	Weight (kg)
*	16	**760 853 316**	9	0.009
*	20	**760 853 753**	9	0.010

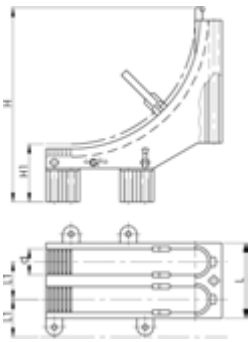


Pipe binder

d-d (mm)	Code	SP	Weight (kg)	L (mm)
16 - 40	**760 853 283**	100	0.000	200
50 - 75	**760 853 284**	100	0.001	300
90 - 110	**760 854 984**	100	0.003	430

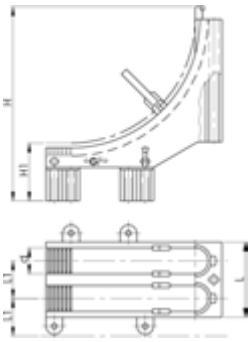
Fawa pipe support

d (mm)	Code	SP	Weight (kg)
16 - 20	**760 853 278**	50	0.102



Pipe support d16 / d20

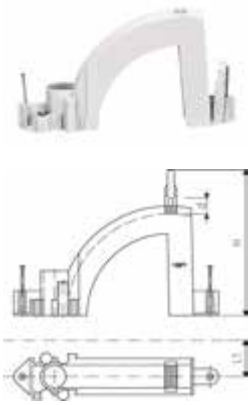
d (mm)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	H (mm)	H1 (mm)
16 - 20	**760 853 399**	12	0.269	90	45	235	70



Insta Pipe support d16 / d20

From the INSTAFLEX range

d (mm)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	H (mm)	H1 (mm)
16 - 20	**760 853 399**	12	0.269	90	45	235	70

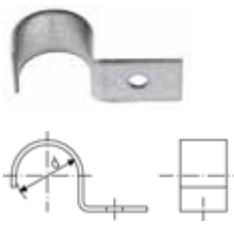


Pipe transfer bend d16 / d20

d (mm)	Code	SP	Weight (kg)	L1 (mm)	H (mm)
16 - 20	**760 853 300**	18	0.113	45	180

Pipe transfer piece d16 / d20

d (mm)	Code	SP	Weight (kg)	L (mm)	H (mm)
16 - 20	**760 853 299**	30	0.116	45	40



Single Pipe clip, metal

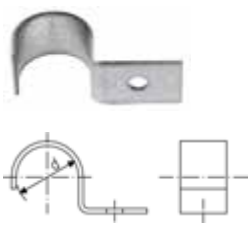
d / outside protective pipe

d (mm)	d1 (mm)	Code	SP	Weight (kg)
25	16	**760 853 254**	50	0.025
30	20	**760 853 567**	50	0.029
35	25	**760 854 951**	50	0.029

Single Pipe clip - plastic

d / outside protective pipe

d (mm)	d1 (mm)	Code	SP	Weight (kg)
25	16	**760 853 627**	50	0.007



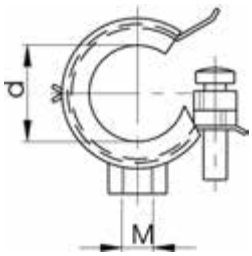
Single pipe clip - metal

d / outside protective pipe

d (mm)	d1 (mm)	Code	SP	Weight (kg)
25	16	**760 853 254**	50	0.025
30	20	**760 853 567**	50	0.029
35	25	**760 854 951**	50	0.029

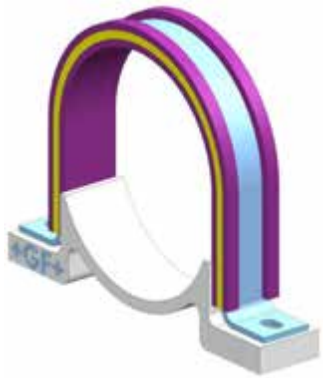
Double pipe clip - metal

d (mm)	d1 (mm)	Code	SP	Weight (kg)
25	16	**760 853 628**	50	0.047



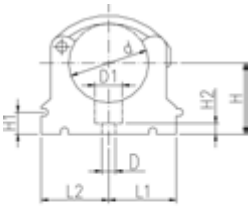
Pipe clamp

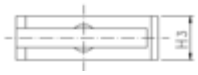
d (mm)	Code	SP	Weight (kg)	M (mm)
16	**761 066 296**	50	0.039	8
20	**761 066 297**	50	0.045	8
25	**761 066 298**	50	0.053	8
32	**761 066 299**	50	0.046	8
40	**761 066 300**	50	0.071	8
50	**761 066 301**	50	0.087	8
63	**761 066 302**	10	0.134	8
75	**761 066 303**	50	0.135	8
90	**761 066 304**	10	0.156	10
110	**761 066 305**	25	0.228	10



Pipe Brackets ROM

d (mm)	Code	SP	Weight (kg)
125	**761 070 337**	5	0.228
160	**761 070 338**	5	0.228
225	**761 070 343**	5	1.160



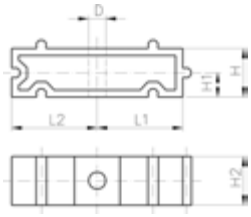


KLIP-IT pipe clip type 061 PE metric

Model:

- Material: clip PE and safety clip PP black, bolts galvanized
- **Minimum order quantity: standard packaging SP**
- Height not designed for ball valve 546 and 543. Please use spacer 73 06 11.

	d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	L1 (mm)	L2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	SC
*	16	**173 061 005**	10	0.006	6	11	14	17	23	10	6	16	M5
*	20	**173 061 006**	10	0.007	6	11	17	19	25	10	6	16	M5
*	25	**173 061 007**	10	0.009	6	11	19	22	28	10	6	16	M5
*	32	**173 061 008**	10	0.011	6	11	24	27	31	10	6	16	M5
	40	**173 061 009**	10	0.026	7	14	34	34	35	10	7	22	M6
	50	**173 061 010**	10	0.028	7	14	37	37	40	10	7	22	M6
	63	**173 061 011**	10	0.047	9	17	45	45	52	10	10	25	M8
	75	**173 061 012**	10	0.061	9	17	52	52	58	10	10	25	M8
	90	**173 061 013**	10	0.098	9	17	65	65	65	10	10	28	M8
	110	**173 061 014**	10	0.125	9	17	79	79	75	10	10	28	M8



KLIP-IT spacer type 061 PE

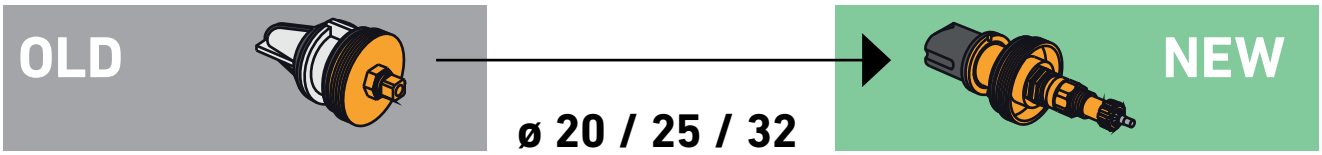
Model:

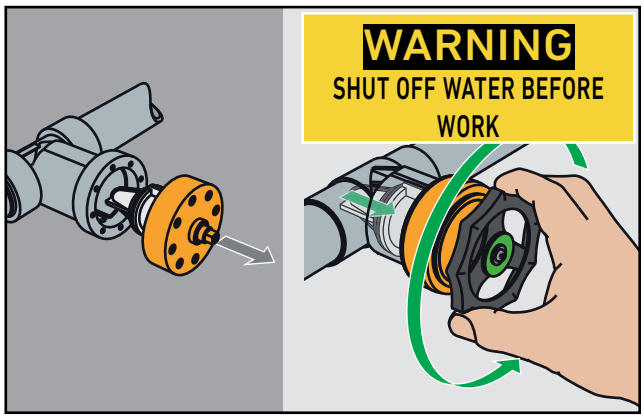
- **Minimum order quantity: standard packaging SP**
- For pipe clips type 061, PE black, UV resistant

d (mm)	Inch (inch)	Code	SP	Weight (kg)	D (mm)	L1 (mm)	L2 (mm)	H (mm)	H1 (mm)	H2 (mm)	SC
16	3/8	**173 061 155**	10	0.005	6	14	17	20	10	16	M5
20	1/2	**173 061 156**	10	0.005	6	17	19	20	10	16	M5
25	3/4	**173 061 157**	10	0.006	6	19	22	20	10	16	M5
32	1	**173 061 158**	10	0.008	6	24	27	20	10	16	M5
40	1 1/4	**173 061 159**	10	0.016	7	34	34	20	10	22	M6
50	1 1/2	**173 061 160**	10	0.017	7	37	37	20	10	22	M6
63	2	**173 061 161**	10	0.025	9	45	45	20	10	25	M8
75	2 1/2	**173 061 162**	10	0.027	9	52	52	20	10	25	M8
90	3	**173 061 163**	10	0.040	9	65	65	20	10	28	M8
110	4	**173 061 164**	10	0.050	9	79	79	20	10	28	M8

INSTAFLEX

Valves





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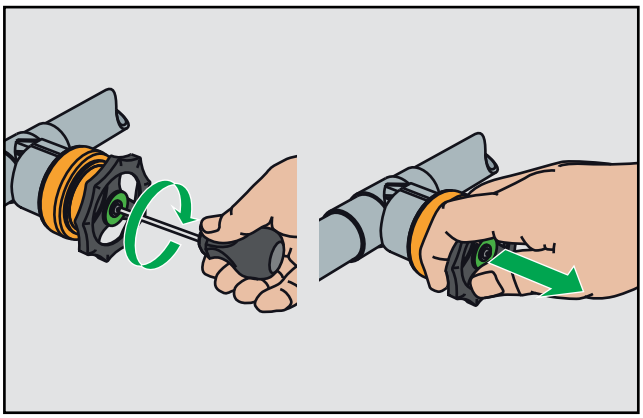

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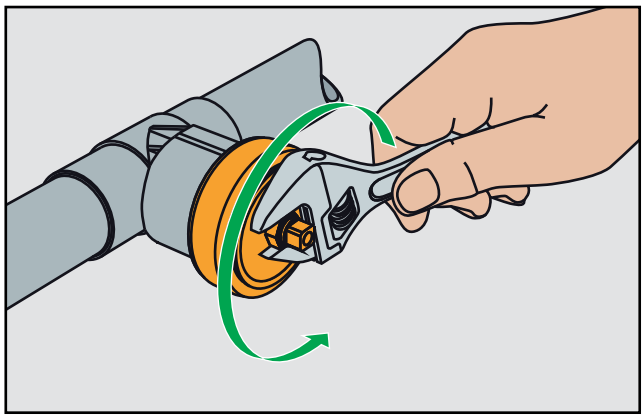

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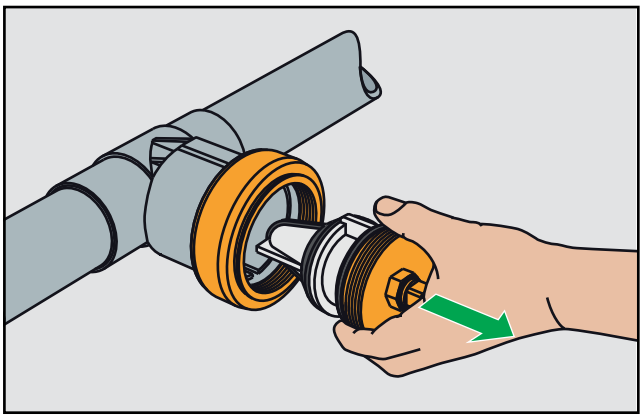

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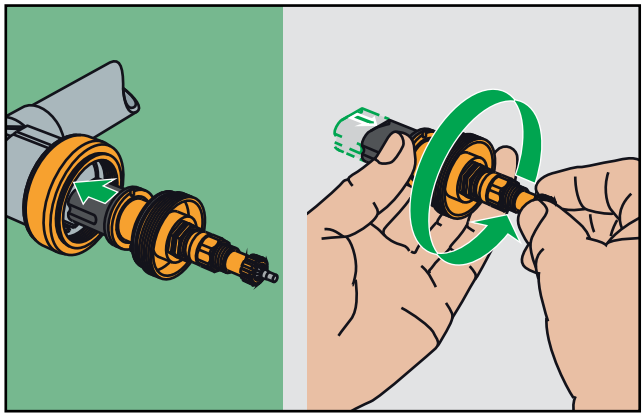

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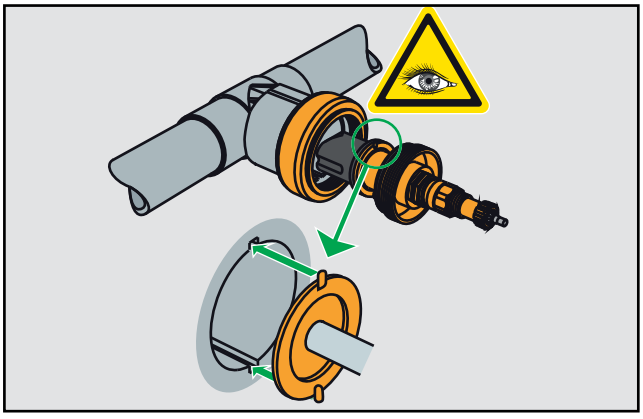

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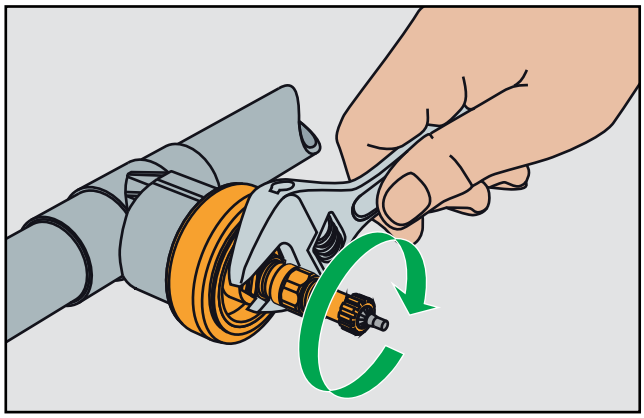

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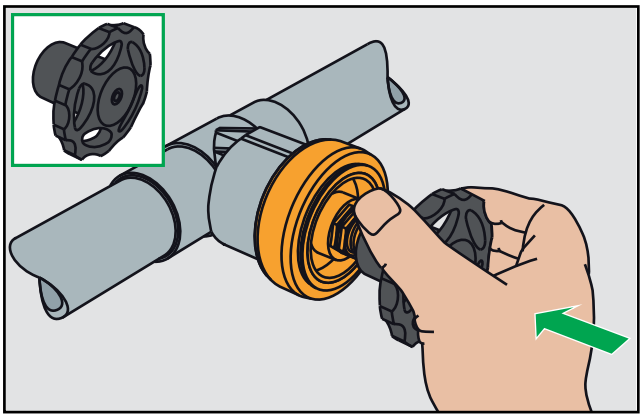

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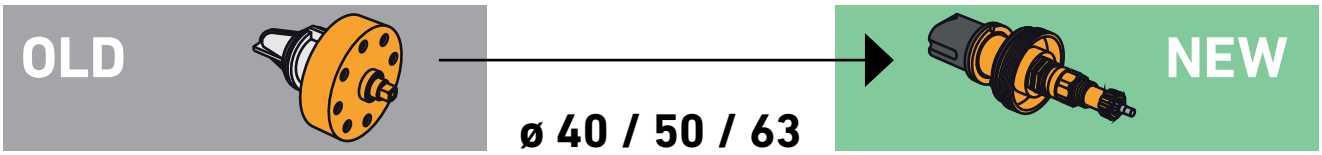

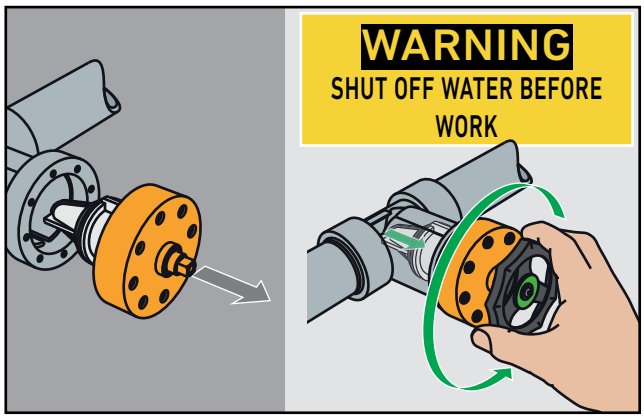

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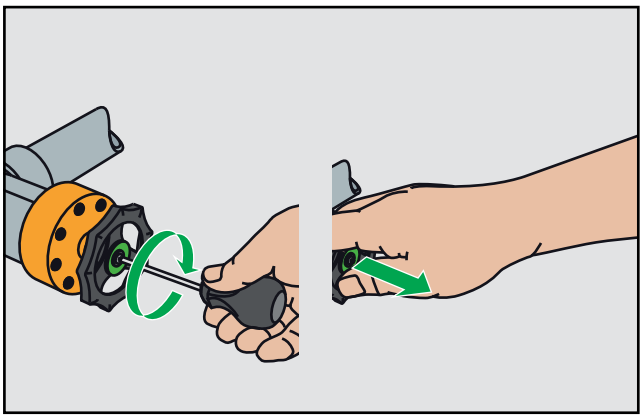

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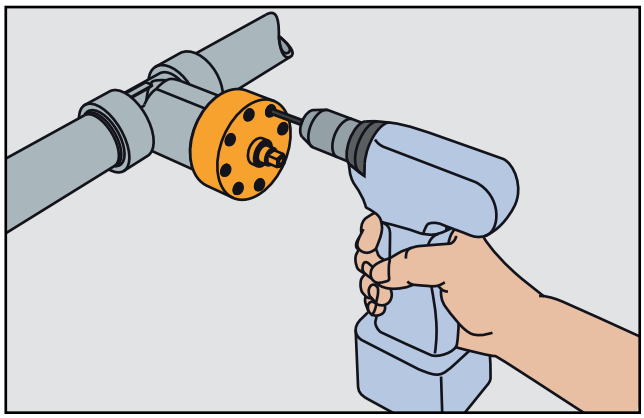

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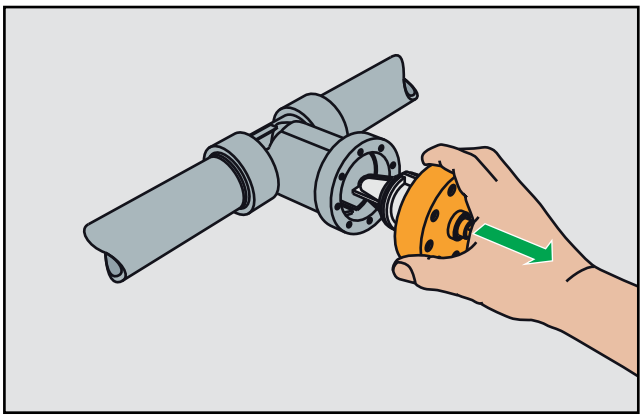

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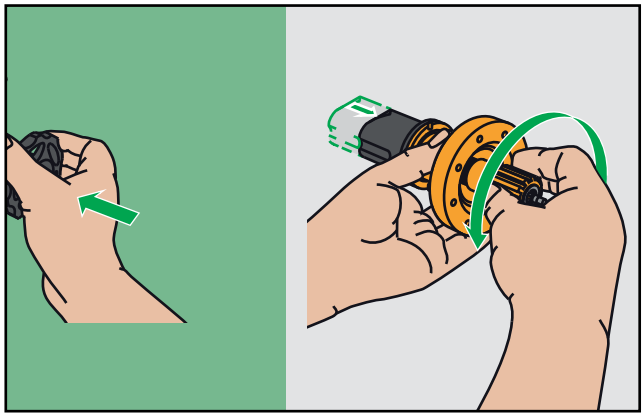

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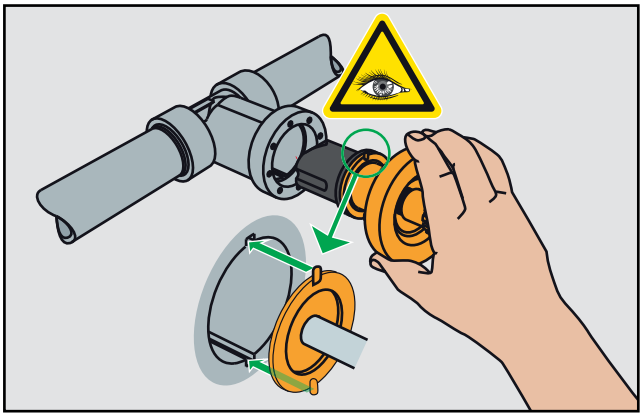

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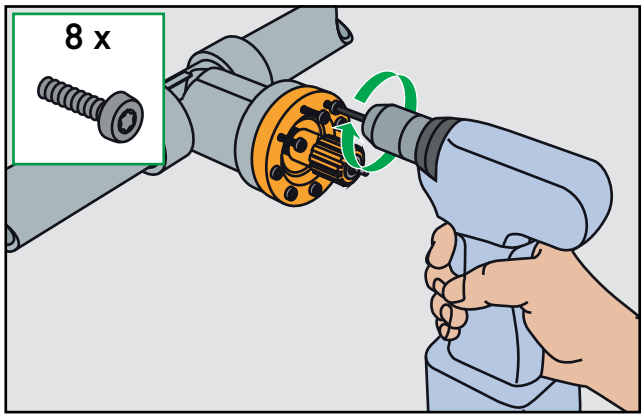

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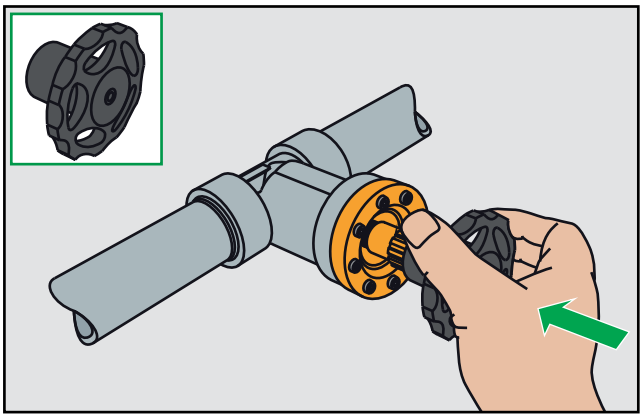

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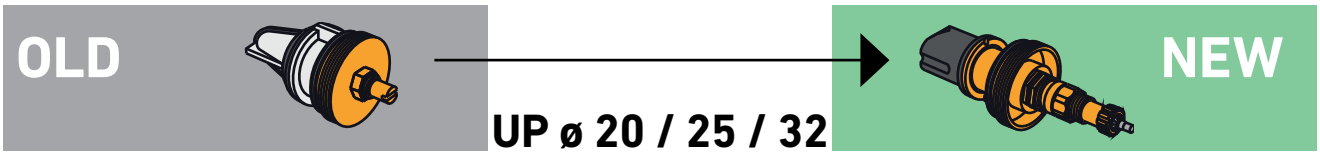
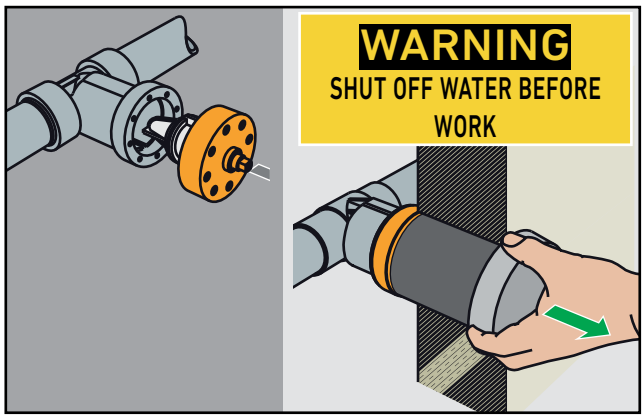
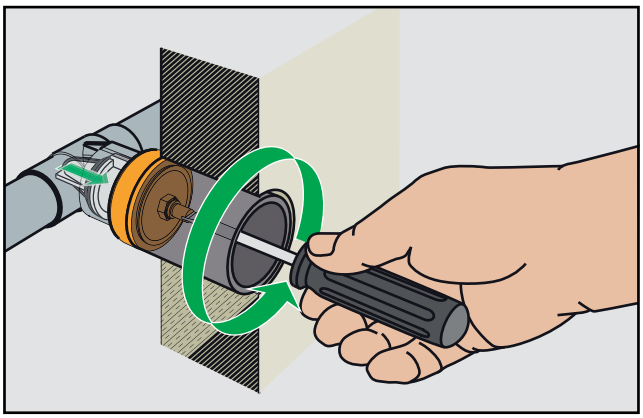

OLD
NEW
UP ø 20 / 25 / 32


WARNING
SHUT OFF WATER BEFORE WORK

1



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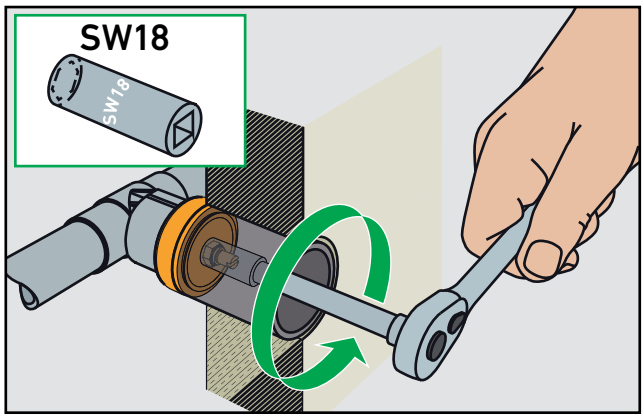
SW18
SW18

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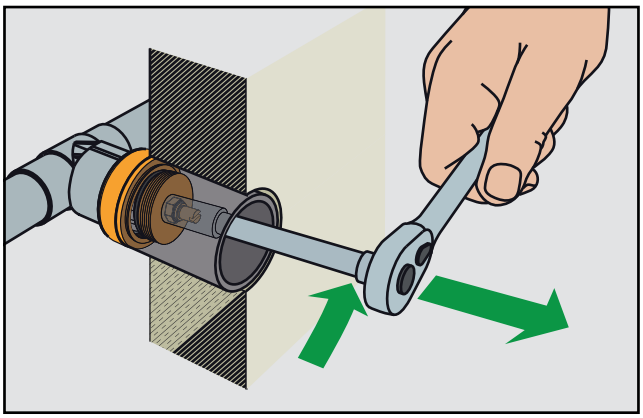

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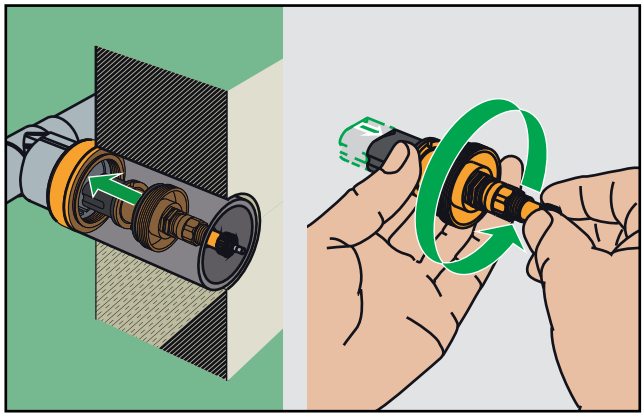

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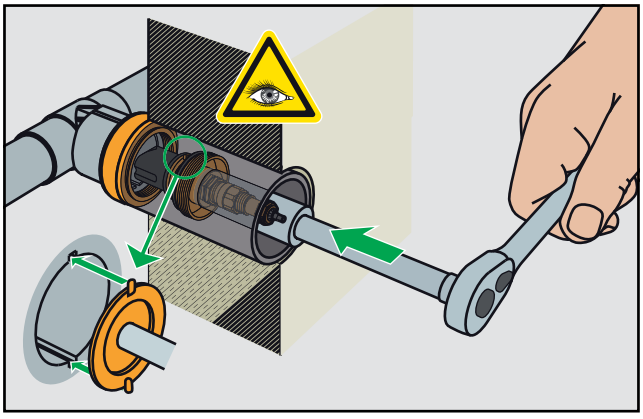

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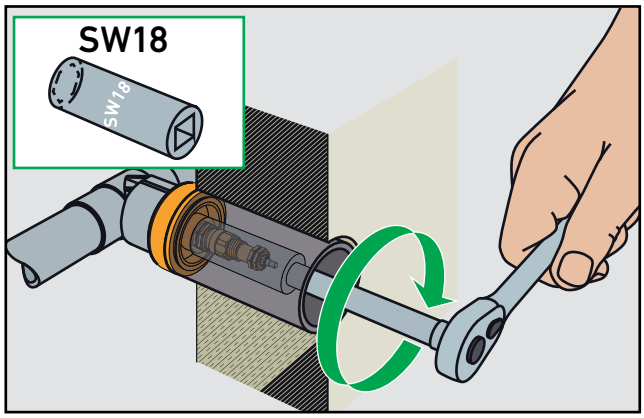
SW18
SW18

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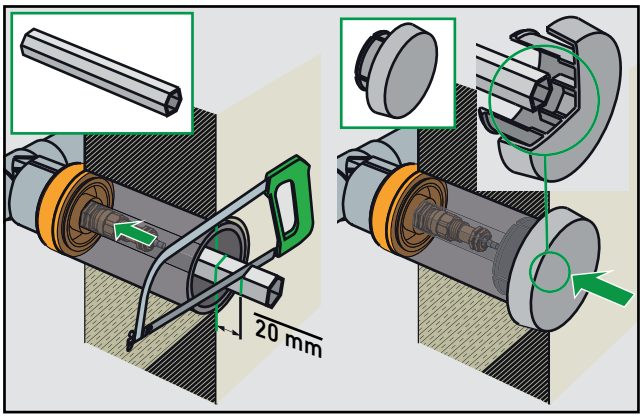
20 mm

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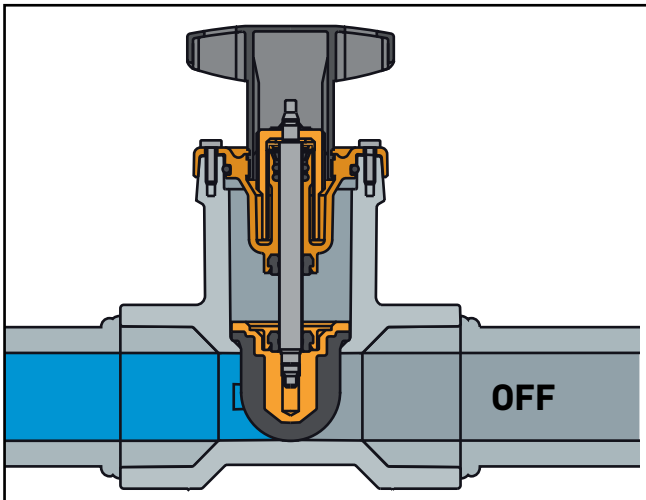
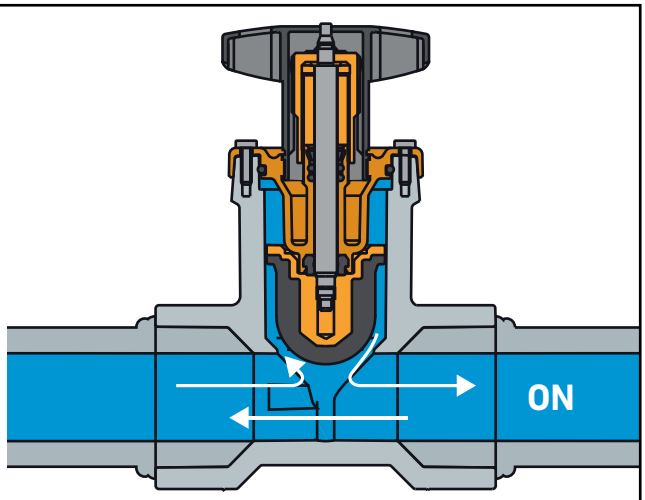
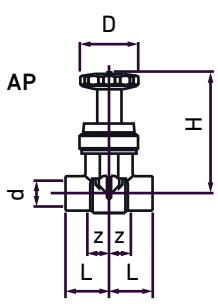
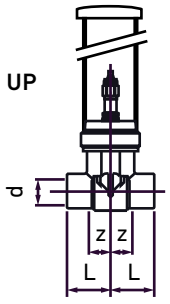




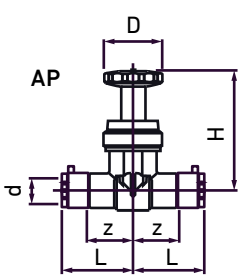
Value z (Zeta)					
ø 20	ø 25	ø 32	ø 40	ø 50	ø63
0.4	**0.4**	**0.4**	**0.3**	**0.3**	**0.3**

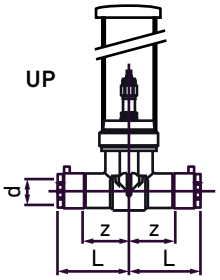
Value Kv 100 (m^3/h)					
ø 20	ø 25	ø 32	ø 40	ø 50	ø63
25.3	**25.3**	**25.3**	**77.5**	**77.5**	**77.5**



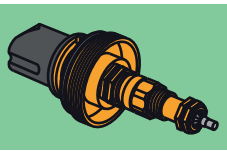


AP	UP	d (mm)	H (mm)	L (mm)	z (mm)	D (mm)
		20	112	40	25	55
		25	112	40	22	55
		32	112	43	23	55
		40	165	55	33	90
		50	165	60	35	90
		63	165	75	47	90



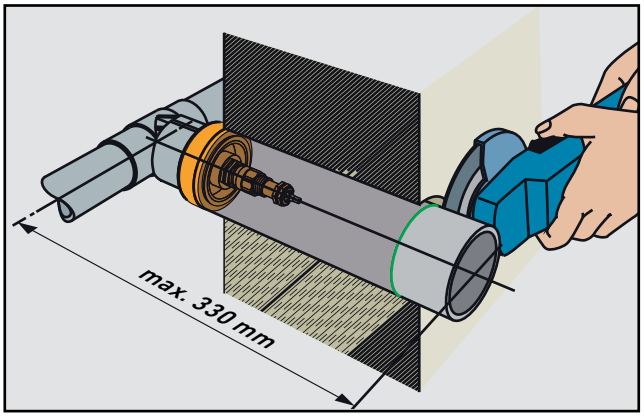


AP	UP	d (mm)	H (mm)	L (mm)	z (mm)	D (mm)
		20	112	86	47	55
		25	112	89	47	55
		32	112	94	52	55
		40	165	112	65	90
		50	165	120	71	90
		63	165	141	90	90



NEW

UP ø 20 / 25 / 32



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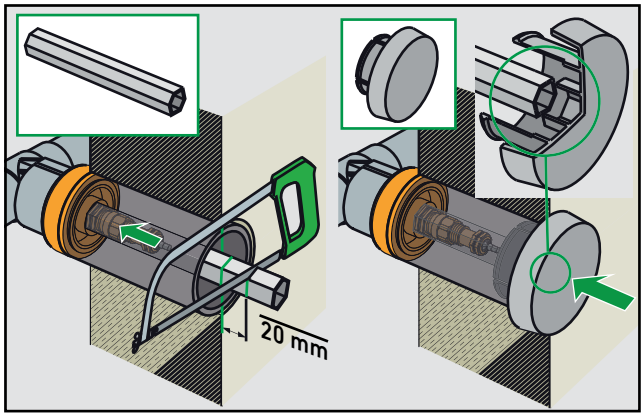

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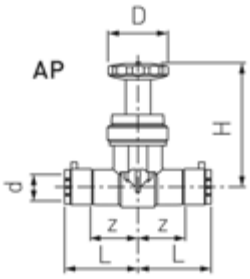
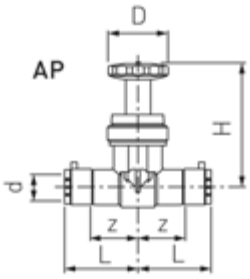


Valve BTV 2 HWS

Electro fusion quality for portable water
Gasket: EPDM, approved for potable hot and cold water
Brass: UBA conform

d (mm)	DN (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	H (mm)	z (mm)
20	15	**761 069 647**	1	0.425	55	86	112	47
25	20	**761 069 648**	1	0.427	55	89	112	47
32	25	**761 069 649**	1	0.470	55	94	112	52
40	32	**761 069 650**	1	1.237	90	112	165	65
50	40	**761 069 651**	1	1.369	90	120	165	71
63	50	**761 069 652**	1	1.851	90	141	165	90



Valve BTV 2 HWS - spigot G1/4"

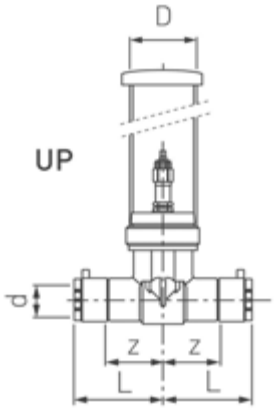
Electro fusion quality for portable water
Gasket: EPDM, approved for potable hot and cold water
Brass: UBA conform

d (mm)	DN (mm)	Code	SP	Weight (kg)	H (mm)	L (mm)	z (mm)	D (mm)
20	15	**761 069 653**	1	0.489	112	86	47	55
25	20	**761 069 654**	1	0.494	112	89	47	55
32	25	**761 069 655**	1	0.520	112	94	52	55
40	32	**761 069 656**	1	1.298	165	112	65	90
50	40	**761 069 657**	1	1.431	165	120	71	90
63	50	**761 069 658**	1	1.754	165	141	90	90

UPV BTV 2 HWS

Electro fusion quality for portable water
Gasket: EPDM, approved for potable hot and cold water
Brass: UBA conform

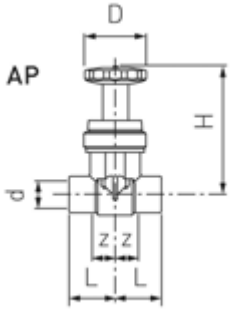
d (mm)	DN (mm)	Code	SP	Weight (kg)	H (mm)	L (mm)	z (mm)	D (mm)
20	15	**761 069 659**	1	0.607	330	86	47	55
25	20	**761 069 660**	1	0.609	330	89	47	55
32	25	**761 069 661**	1	0.652	330	94	52	55



Valve BTV 2 HMS - without drain

Socket fusion
Gasket: EPDM, quality for potable water
Brass: UBA conform

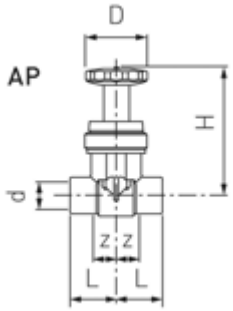
d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	H (mm)	z (mm)	Value (Zeta)	kv-100-value (Δp=1 bar) (l/min)
20	**761 070 304**	1	0.379	55	40	112	25	0.4	421
25	**761 070 305**	1	0.370	55	40	112	22	0.4	421
32	**761 070 306**	1	0.387	55	43	112	23	0.4	421
40	**761 070 307**	1	1.099	90	55	165	33	0.3	1291
50	**761 070 308**	1	1.151	90	60	165	35	0.3	1291
63	**761 070 309**	1	1.492	90	75	165	47	0.3	1291



Valve BTV 2 HMS - with spigot G 1/4"

Socket fusion
Gasket: EPDM, quality for potable water
Brass: UBA conform

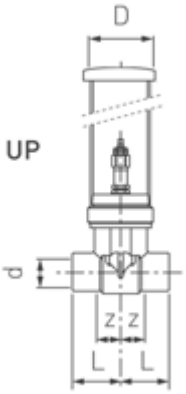
d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	H (mm)	z (mm)	Value (Zeta)	kv-100-value (Δp=1 bar) (l/min)
20	**761 070 310**	1	0.443	55	40	112	25	0.4	421
25	**761 070 311**	1	0.434	55	40	112	22	0.4	421
32	**761 070 312**	1	0.434	55	43	112	23	0.4	421
40	**761 070 313**	1	1.161	90	55	165	33	0.3	1291
50	**761 070 314**	1	1.213	90	60	165	35	0.3	1291
63	**761 070 315**	1	1.394	90	75	165	47	0.3	1291



UPV BTV 2 HMS

Socket fusion
Gasket: EPDM, quality for potable water
Brass: UBA conform

d (mm)	DN (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	H (mm)	z (mm)
20	15	**761 070 316**	1	0.561	55	40	370	25
25	20	**761 070 317**	1	0.552	55	40	370	22
32	25	**761 070 318**	1	0.569	55	43	370	23



Spare parts - Retrofit top

Retrofit top d20/d25

Suitable to repair the old version of the INSTAFLEX system valve and the new BTV 2
For additional information please see the installation manual for BTV 2 (760 809 086)

d (mm)	Code	SP	Weight (kg)
20 / 25	**761 066 896**	1	0.225

Retrofit top d32

Suitable to repair the old version of the INSTAFLEX system valve and the new BTV 2
For additional information please see the installation manual for BTV 2 (760 809 086)

d (mm)	Code	SP	Weight (kg)
32	**761 066 897**	1	0.227

Retrofit top d40/d50/d63

Suitable to repair the old version of the INSTAFLEX system valve and the new BTV 2
For additional information please see the installation manual for BTV 2 (760 809 086)

d (mm)	Code	SP	Weight (kg)
40 / 50 / 63	**761 065 303**	1	0.878

Retrofit top UPV d20/d25

Suitable to repair the old version of the INSTAFLEX system valve and the new BTV 2
For additional information please see the installation manual for BTV 2 (760 809 086)

d (mm)	Code	SP	Weight (kg)
20 / 25	**761 066 898**	1	0.263

Retrofit top UPV d32

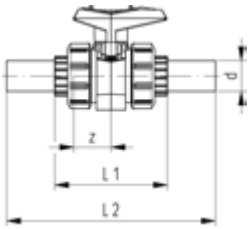
Suitable to repair the old version of the INSTAFLEX system valve and the new BTV 2
For additional information please see the installation manual for BTV 2 (760 809 086)

d (mm)	Code	SP	Weight (kg)
32	**761 066 899**	1	0.264

Drain valve and plug

G (inch)	Code	SP	Weight (kg)
¼	**761 066 328**	1	0.046

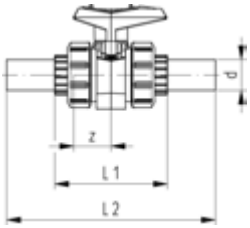
Ball valves



Ball valve type 546 PVC-C / PB-Spigots

Working temperture max. +70°C
* on request

	d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z (mm)
*	20	15	10	**761 066 343**	1	0.178	95	190	33
*	25	20	10	**761 066 344**	1	0.271	108	208	38
*	32	25	10	**761 066 345**	1	0.386	118	218	39
*	40	32	10	**761 066 346**	1	0.676	137	250	47
*	50	40	10	**761 066 347**	1	0.988	147	263	49
*	63	50	10	**761 066 348**	1	1.642	168	288	46



Ball valve type 546 PP / PB-Spigots

Applicable for compressed air till 10 bar
Working temperture max. +70°C
* on request

	d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z (mm)
*	20	15	10	**760 000 343**	1	0.141	95	190	33
*	25	20	10	**760 000 344**	1	0.203	108	208	38
*	32	25	10	**760 000 345**	1	0.298	118	218	39
*	40	32	10	**760 000 346**	1	0.512	137	250	47
*	50	40	10	**760 000 347**	1	0.715	147	263	49
*	63	50	10	**760 000 348**	1	1.293	168	288	46

Ball valve typ 346 with PB-Flange adapter

Material: PP-H/EPDM

d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	D (mm)	L (mm)	L1 (mm)	L2 (mm)	H (mm)	z (mm)	kv-value (Δp=1 bar) (l/min)
20	15	10	**760 000 091**	1	0.150	46	101	78	62	50	73	185
25	20	10	**760 000 092**	1	0.250	56	9	92	74	60	87	350
32	25	10	**760 000 093**	1	0.360	67	130	100	78	70	94	700
40	32	10	**760 000 094**	1	0.600	82	149	110	88	80	109	1000
50	40	10	**760 000 095**	1	0.930	98	162	120	94	92	116	1600
63	50	10	**760 000 096**	1	1.700	121	195	145	113	109	141	3100

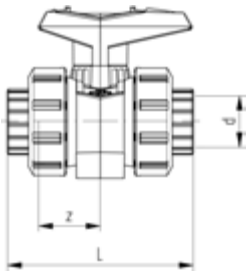
DN10/15 - 50

Ball valve typ 346 with PB-Flange adapter

PVC-C/EPDM
For portable water installations, not DVGW approved

d (mm)	DN (mm)	Inch (inch)	PN (bar)	EPDM Code	SP	Weight (kg)
20	15	1/2	16	**761 066 946**	1	0.150
25	20	3/4	16	**761 066 947**	1	0.250
32	25	1	16	**761 066 948**	1	0.360
40	32	11/4	16	**761 066 949**	0	0.600
50	40	11/2	16	**761 066 950**	1	0.930
63	50	2	16	**761 066 951**	1	1.700

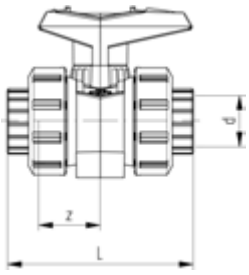
d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)	H (mm)	z (mm)	kv-value (Δp=1 bar) (l/min)
20	45	102	78	63	50	71	185
25	56	120	92	75	60	82	350
32	67	131	100	79	70	87	700
40	82	150	110	89	80	98	1000
50	98	163	120	95	92	101	1600
63	120	197	6	115	110	121	3100



Ball valve type 546 PVC-C - PB-flange adaptor - socket fusion

For portable water installations, not DVGW approved

d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	L (mm)	z (mm)
20	15	16	**761 066 337**	1	0.160	95	33
25	20	16	**761 066 338**	1	0.243	108	38
32	25	16	**761 066 339**	1	0.349	118	39
40	32	16	**761 066 340**	1	0.614	137	47
50	40	16	**761 066 341**	1	0.838	147	49
63	50	16	**761 066 342**	1	1.546	168	46



Ball valve type 546 PP - PB-flange adaptor - socket fusion

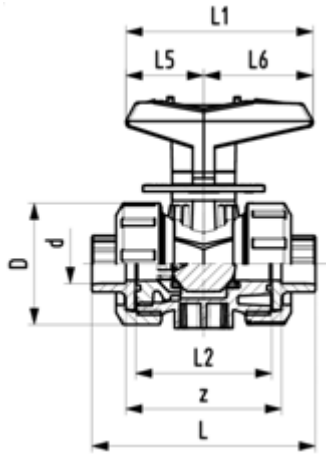
For portable water installations, not DVGW approved

d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	L (mm)	z (mm)
20	15	16	**760 000 337**	1	0.119	95	33
25	20	16	**760 000 338**	1	0.182	108	38
32	25	16	**760 000 339**	1	0.255	118	39
40	32	16	**760 000 340**	1	0.446	137	47
50	40	16	**760 000 341**	1	0.609	147	49
63	50	16	**760 000 342**	1	1.118	168	46

PB Flange adaptor flat with spigot

Suitable to ball valve 546
on request

d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	h (mm)
20	**761 069 627**	1	0.008	27	34	66
25	**761 069 628**	1	0.025	33	41	71
32	**761 069 629**	1	0.039	41	50	74
40	**761 069 630**	1	0.027	50	61	82
50	**761 069 631**	1	0.094	61	73	87
63	**761 069 632**	1	0.074	76	90	94



Linear ball valve type 546 PVC-C
With mounting inserts
With PB INSTAFLEX sockets metric

Model:

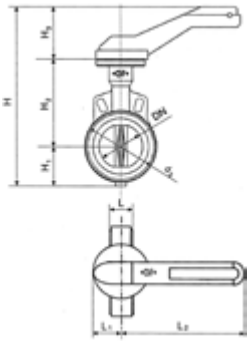
- Excellent control characteristics
- Designed for easy installation and removal
- Ball seals PTFE
- Angle of operation 90° with scale
- Integrated stainless steel mounting inserts

Option:

- Individual configuration of the valve (see diagram)
- Pneumatic or electric actuators from GF
- Other materials on demand

d (mm)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
20	15	10	185	**761 068 069**	1	0.169
25	20	10	350	**761 068 070**	1	0.255
32	25	10	700	**761 068 071**	1	0.370
40	32	10	1000	**761 068 072**	1	0.648
50	40	10	1600	**761 068 073**	1	0.894
63	50	10	3100	**761 068 074**	1	1.653

d (mm)	D (mm)	H (mm)	H1 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	z (mm)	closest inch (inch)
20	50	57	27	95	77	56	25	32	45	64	½
25	58	67	30	110	97	65	25	39	58	72	¾
32	68	73	36	123	97	71	25	39	58	79	1
40	84	90	44	146	128	85	45	54	74	94	1 ¼
50	97	97	51	157	128	89	45	54	74	95	1 ½
63	124	116	64	183	152	101	45	66	87	107	2



Metal - butterfly valve type 039M
With hand lever

Model:

- Body GGG40 (A 395 M:88, EN-JS 1020 EN1563) Rilsan coating
- Seat material: EPDM, FKM and others on request
- Full bore shaft, square shape
- Installation length: EN 558 row 20
- Mounting between ISO, ANSI, BS or JIS Flanges
- Interface according to DIN/ISO 5211
- Also available: gearbox with handwheel, electric-, pneumatic actuated

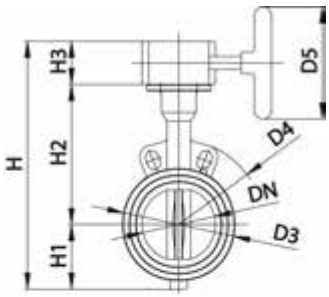
d (mm)	Size (inch)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	Disc: ductile iron/Rilsan® coated EPDM Code	SP	Weight (kg)	Disc: stainless steel EPDM Code	SP	Weight (kg)
75	2 ½	65	16	4667	**199 039 001**	1	2.100	**199 039 201**	1	2.100
90	3	80	16	7167	**199 039 002**	1	2.300	**199 039 202**	1	2.300
110	4	100	16	11833	**199 039 003**	1	3.500	**199 039 203**	1	3.500
140	5	125	16	18333	**199 039 004**	1	4.300	**199 039 204**	1	4.300
160	6	150	16	26667	**199 039 005**	1	5.700	**199 039 205**	1	5.700
225	8	200	16	46667	**199 039 006**	1	8.400	**199 039 206**	1	8.400
280	10	250	16	78333	**199 039 007**	1	17.000	**199 039 207**	1	17.000
315	12	300	16	115000	**199 039 008**	1	35.500	**199 039 208**	1	21.000

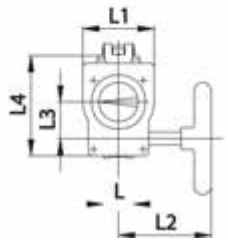
d (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L (mm)	L1 (mm)	L2 (mm)	Cv value (Δp=1 psi) (l/min)	d3 (mm)
75	312	63	152	95	46	45	220	1233	114
90	327	71	159	95	46	45	220	1893	131
110	360	87	178	95	52	45	220	3126	152
140	388	102	191	95	56	45	320	4843	182
160	416	118	203	95	56	45	320	7045	209
225	489	149	245	95	60	45	320	12328	262
280	525	200	275	50	68	63	560	20693	331
315	592	227	315	50	78	63	560	30380	380

Metal - butterfly valve type 039G
Reduction gear with handwheel

Model:

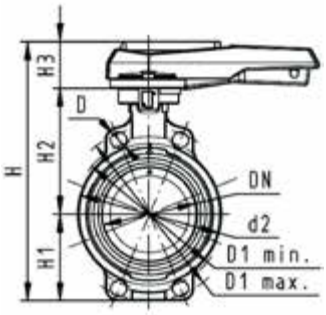
- Body GGG40 (A 395 M:88, EN-JS 1020 EN1563) Rilsan coating
- Seat material: EPDM, FKM and others on request
- Full bore shaft, square shape
- Installation length: EN 558 row 20
- Mounting between ISO, ANSI, BS or JIS Flanges
- Interface according to DIN/ISO 5211

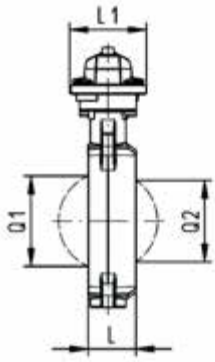


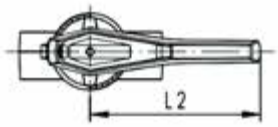


d (mm)	Size (inch)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	Disc: ductile iron/Rilsan® coated EPDM Code	SP	Weight (kg)	Disc: stainless steel EPDM Code	SP	Weight (kg)
75	2 ½	65	16	4667	**199 039 027**	1	3.600	**199 039 227**	1	3.600
90	3	80	16	7167	**199 039 028**	1	3.800	**199 039 228**	1	3.800
110	4	100	16	11833	**199 039 029**	1	4.800	**199 039 229**	1	4.800
140	5	125	16	18333	**199 039 030**	1	5.600	**199 039 230**	1	5.600
160	6	150	16	26667	**199 039 031**	1	7.000	**199 039 231**	1	7.000
225	8	200	16	46667	**199 039 032**	1	9.500	**199 039 232**	1	9.500
280	10	250	16	78333	**199 039 033**	1	31.600	**199 039 233**	1	19.000
315	12	300	16	115000	**199 039 034**	1	40.000	**199 039 234**	1	37.000

d (mm)	D3 (mm)	D4 (mm)	D5 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	Cv value (Δp=1 psi) (l/min)
75	114	185	125	275	65	152	58	84	152	38	107	1233
90	131	190	125	290	73	159	58	84	152	38	107	1893
110	152	229	125	323	87	178	58	84	152	38	107	3126
140	182	254	125	351	102	191	58	84	152	38	107	4843
160	209	285	125	379	118	203	58	84	152	38	107	7045
225	262	343	125	452	149	245	58	84	152	38	107	12328
280	331	333	250	542	200	275	67	106	184	52	142	20693
315	380	353	250	609	227	315	67	106	184	52	142	30380







Butterfly valve type 567 PVC-C
Hand lever with ratchet settings

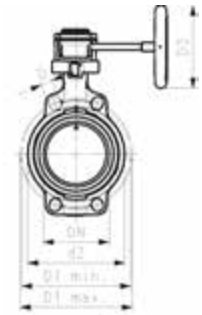
Model:

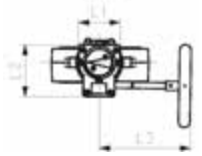
- Overall length according to EN 558, ISO 5752
- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI/ASME B 16.5 Class 150, BS 1560: 1989, BS 4504, JIS B 2220

d (mm)	Size (inch)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)	FKM Code	SP	Weight (kg)
63	2	50	10	1470	**163 567 002**	1	1.257	**163 567 022**	1	1.268
75	2 ½	65	10	2200	**163 567 003**	1	1.366	**163 567 023**	1	1.174
90	3	80	10	3000	**163 567 004**	1	1.542	**163 567 024**	1	1.997
110	4	100	10	6500	**163 567 005**	1	2.231	**163 567 025**	1	2.715
140	5	125	10	11500	**163 567 006**	1	2.820	**163 567 026**	1	2.536
160	6	150	10	16600	**163 567 007**	1	6.719	**163 567 027**	1	3.361
225	8	200	10	39600	**163 567 008**	1	5.873	**163 567 028**	1	6.803
280	10	250	10	55200	**163 567 009**	1	14.328	**163 567 029**	1	12.998
315	12	300	10	80000	**163 567 010**	1	18.899	**163 567 030**	1	19.139

d (mm)	PTFE Code	SP	Weight (kg)
63	**163 567 202**	1	1.257
75	**163 567 203**	1	1.366
90	**163 567 204**	1	1.542
110	**163 567 205**	1	2.231
140	**163 567 206**	1	2.820
160	**163 567 207**	1	6.719
225	**163 567 208**	1	5.873
280			
315			

d (mm)	d2 (mm)	D (mm)	D1 min. (mm)	D1 max. (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L (mm)	L1 (mm)	L2 (mm)	Q1 (mm)	Q2 (mm)
63	104	19	120	125	264	77	134	54	45	106	205	40	
75	115	19	140	145	277	83	140	54	46	106	205	54	35
90	131	19	150	160	289	89	146	54	49	106	205	67	50
110	161	19	175	191	325	104	167	55	56	106	255	88	74
140	187	23	210	216	352	117	181	55	64	106	255	113	97
160	215	24	241	241	373	130	189	55	72	106	255	139	123
225	267	23	290	295	435	158	210	67	73	140	408	178	169
280	329	25	353	362	555	205	264	85	113	149	408	210	207
315	379	25	400	432	599	228	285	85	113	149	408	256	253





Butterfly valve type 567 PVC-C
Reduction gear with handwheel

Model:

- Overall length according to EN 558, ISO 5752
- Connecting dimension: ISO 7005 PN 10, EN 1092 PN 10, DIN 2501 PN 10, ANSI/ASME B 16.5 Class 150, BS 1560: 1989, BS 4504, JIS B 2220

d (mm)	Size (inch)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)	FKM Code	SP	Weight (kg)
63	2	50	10	1470	**163 567 042**	1	3.078	**163 567 062**	1	3.078
75	2 ½	65	10	2200	**163 567 043**	1	3.201	**163 567 063**	1	3.212
90	3	80	10	3000	**163 567 044**	1	3.384	**163 567 064**	1	3.391
110	4	100	10	6500	**163 567 045**	1	4.019	**163 567 065**	1	4.033
140	5	125	10	11500	**163 567 046**	1	4.526	**163 567 066**	1	4.526
160	6	150	10	16600	**163 567 047**	1	5.601	**163 567 067**	1	5.624
225	8	200	10	39600	**163 567 048**	1	7.326	**163 567 068**	1	7.354
280	10	250	10	51000	**163 567 049**	1	14.741	**163 567 069**	1	15.115
315	12	300	10	73000	**163 567 050**	1	19.254	**163 567 070**	1	35.000

d (mm)	PTFE Code	SP	Weight (kg)
63	**163 567 242**	1	3.078
75	**163 567 243**	1	3.201
90	**163 567 244**	1	3.384
110	**163 567 245**	1	4.019
140	**163 567 246**	1	4.526
160	**163 567 247**	1	5.601
225	**163 567 248**	1	7.326
280			
315			

d (mm)	d2 (mm)	D (mm)	D1 min. (mm)	D1 max. (mm)	D3 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Q1 (mm)
63	104	19	120	125	160	273	77	134	62	45	78	112	179	40
75	115	19	140	145	160	285	83	140	62	46	78	112	179	54
90	131	19	150	160	160	297	89	146	62	49	78	112	179	67
110	160	19	175	191	160	333	104	167	62	56	78	112	179	88
140	187	23	210	216	160	360	117	181	62	64	78	112	179	113
160	215	24	241	241	160	381	130	189	62	72	78	112	179	139
225	267	23	290	295	160	430	158	210	62	73	78	112	179	178
280	329	25	353	362	200	538	205	264	69	113	97	130	198	210
315	379	25	400	432	200	582	228	285	69	113	97	130	198	256

d (mm)	Q2 (mm)
63	
75	35
90	50
110	74
140	97
160	123
225	169
280	207
315	253

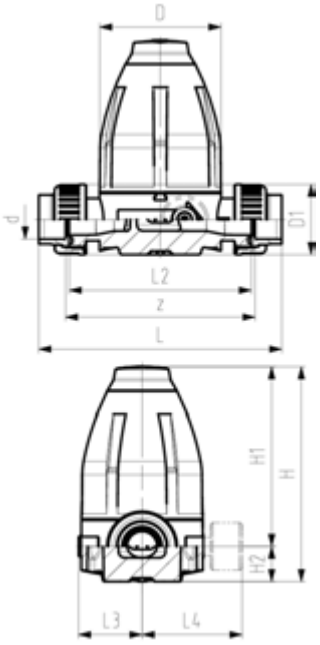
Additional components

PROGEF Standard
Pressure reducing valve type 582
Unions with butt fusion spigots SDR11 metric
Without manometer

Model:

- Diaphragm PTFE/EPDM
- Integrated stainless steel mounting inserts
- 0.5-9.0 bar (7-130 psi)

0.3-3.0 bar (4-44 psi) on request
Manometer on request



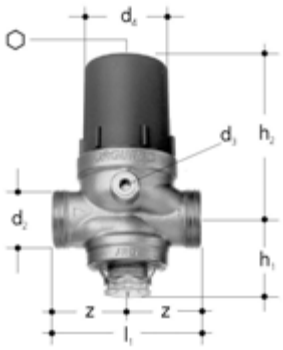
d (mm)	DN (mm)	PN (bar)	O-rings EPDM Code	Weight (kg)	SP	O-rings FKM Code	SP
20	15	10	**167 582 502**	0.640	1	**167 582 512**	1
25	20	10	**167 582 503**	1.350	1	**167 582 513**	1
32	25	10	**167 582 504**	1.370	1	**167 582 514**	1
40	32	10	**167 582 505**	3.660	1	**167 582 515**	1
50	40	10	**167 582 506**	3.710	1	**167 582 516**	1
63	50	10	**167 582 507**	3.860	1	**167 582 517**	1

d (mm)	D (mm)	D1 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	L (mm)	L2 (mm)	L3 (mm)	L5 (mm)	M	z (mm)	closest inch (inch)
20	79	48	132	111	21	12	158	120	42	40	M6	126	½
25	100	58	177	148	29	14	192	150	53	46	M6	156	¾
32	100	65	177	148	29	14	196	150	53	46	M6	156	1
40	147	77	251	207	44	21	255	205	76	65	M8	211	1 ¼
50	147	84	251	207	44	21	261	205	76	65	M8	211	1 ½
63	147	111	251	207	44	21	269	205	76	65	M8	211	2

PB socket fusion adapter for standard union

Insert for socket fusion fittings with a pre-assembled messing ring for an optimal force distribution
Suitable for all common metric plastic unions
* on request

	d (mm)	DN (mm)	Code
*	20	15	**761 066 031**
*	25	20	**761 066 032**
*	32	25	**761 066 033**
*	40	32	**761 066 034**
*	50	40	**761 066 035**
*	63	50	**761 066 036**

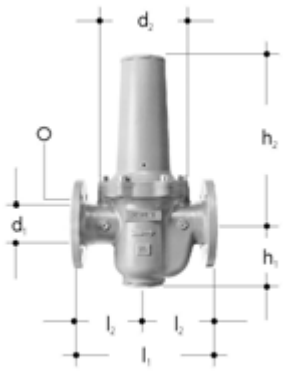


JRGURED pressure reducing valve, PN 25

- Temperature: max. 30°C
- Material: gunmetal, stainless steel, EPDM, plastic
- Factory setting: 400 kPa (4 bar)
- Secondary pressure: 200 - 600 kPa (2 - 6 bar)
- Connection: manometer

GN (inch)	DN (mm)	JRG Code	GF Code	SP	Weight (kg)
½	15	**1303.015**	**350 712 301**	1	0.620
¾	20	**1303.020**	**350 712 401**	1	0.770
1	25	**1303.025**	**350 712 501**	1	1.340
1 ¼	32	**1303.032**	**350 712 601**	1	1.800
1 ½	40	**1303.040**	**350 712 701**	1	3.400
2	50	**1303.050**	**350 712 801**	1	4.900
2 ½	65	**1303.065**	**350 734 701**	1	5.200

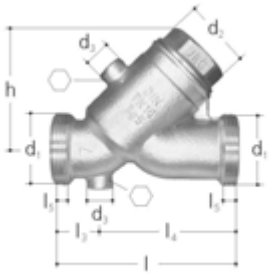
GN (inch)	DN (mm)	d2 G (inch)	d3 Rp (inch)	d4 (mm)	h1 (mm)	h2 (mm)	l1 (mm)	z (mm)	⬡
½	15	¾	⅛	54	34	79	80	40	5
¾	20	1	⅛	60	42	86	85	43	5
1	25	1 ¼	¼	72	52	110	100	50	6
1 ¼	32	1 ½	¼	80	64	121	120	60	6
1 ½	40	1 ¾	¼	96	80	157	145	73	8
2	50	2 ⅜	¼	105	98	172	175	88	8
2 ½	65	3	¼	105	98	172	180	90	8



JRGURED pressure reducing valve, PN 16

- Temperature: max. 70°C
- Material: gunmetal, stainless steel, EPDM
- Factory setting: 400 kPa (4 bar)
- Secondary pressure: 150 - 600 kPa (1.5 - 6 bar)
- *Special version on request: 650 - 1000 kPa (6.5 - 10 bar)
- Connection: flange, manometer

DN (mm)	JRG Code	GF Code	SP	Weight (kg)	d1 (mm)	d2 (mm)	h1 (mm)	h2 (mm)	l1 (mm)	l2 (mm)	○
65	**1140.065**	**350 542 301**	1	32.000	65	187	128	340	290	145	4
80	**1140.080**	**350 542 401**	1	40.000	80	217	144	405	310	155	8
100	**1140.100**	**350 542 501**	1	55.000	100	257	166	465	350	175	8

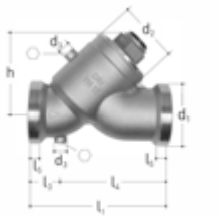


Non-return valve, PN 16

- Temperature: max. 90°C
- Material: gunmetal, stainless steel, EPDM, plastic
- Factory setting: opening pressure < 5 kPa (< 50 mbar)
- Connection: male thread

DN (mm)	JRG Code	GF Code	SP	Weight (kg)
15	**1611.015**	**350 896 244**	1	0.311
20	**1611.020**	**350 896 245**	1	0.460
25	**1611.025**	**350 896 246**	1	0.749
32	**1611.032**	**350 896 247**	1	0.860
40	**1611.040**	**350 896 248**	1	1.257
50	**1611.050**	**350 896 249**	1	1.860

DN (mm)	d1 G (inch)	d2 G (inch)	d3 Rp (inch)	h (mm)	l (mm)	l3 (mm)	l4 (mm)	l5 (mm)	⬡
15	¾	½	¼	42	75	24	52	6	6
20	1	¾	¼	51	87	24	63	7	6
25	1 ¼	1	¼	61	99	24	75	8	6
32	1 ½	1 ¼	¼	80	118	30	89	9	6
40	1 ¾	1 ½	¼	91	130	31	100	10	6
50	2 ⅜	2	¼	107	155	35	120	11	6



Non-return valve, PN 16

- Temperature: max. 90°C
- Material: gunmetal, stainless steel, EPDM, plastic
- Factory setting: opening pressure < 5 kPa (< 50 mbar)
- Connection: male thread

DN (mm)	JRG Code	GF Code	SP	Weight (kg)
65	**1611.065**	**350 898 302**	1	3.120

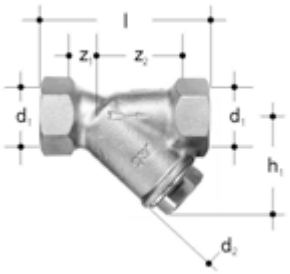
DN (mm)	d1 G (inch)	d2 G (inch)	d3 Rp (inch)	h (mm)	l1 (mm)	l3 (mm)	l4 (mm)	l5 (mm)	⬡
65	3	2 ½	¼	116	190	43	147	14.5	6

Safety valve JRGARANT, reaction pressure 6 bar

For closed model water heater, inlet with male thread, outlet with female thread.
Body made of gunmetal, upper part made of plastic, factory setting of operating pressure for the safety valve.
Upper part to 1025 see 1045, water dropping nipple to 1025 see 8223.

GN (inch)	DN (mm)	JRG Code	GF Code	SP	Weight (kg)
½	15	**1025.240**	**350 599 405**	1	0.242
¾	20	**1025.320**	**350 599 505**	1	0.285
1	25	**1025.400**	**350 599 606**	1	0.556

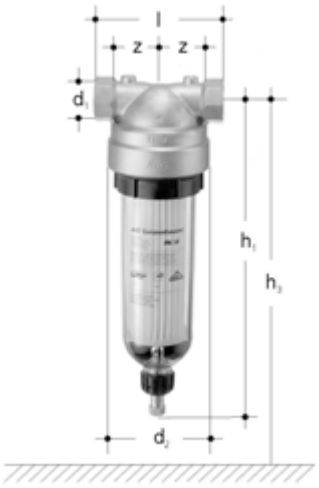
GN (inch)	DN (mm)	d1 R (inch)	d2 Rp (inch)	h1 (mm)	h2 (mm)	l1 (mm)	l2 (mm)	PN (bar)	Temperature (°C)	z (mm)
½	15	½	½	28	60	38	47	10	90	15
¾	20	¾	¾	32	62	41	48	10	90	17
1	25	1	1	39	82	46	65	10	90	22



Slanted filter, PN 16

- Temperature: max. 100°C (water, air, oil, etc.)
- Material: gunmetal

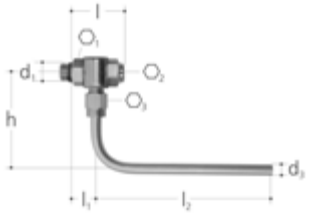
GN (inch)	DN (mm)	JRG Code	GF Code	SP	Weight (kg)	d1 Rp (inch)	d2 G (inch)	h1 (mm)	l (mm)	z1 (mm)	z2 (mm)	µm
⅜	10	**1812.160**	**350 872 102**	1	0.200	⅜	½	40	60	10	30	250
½	15	**1812.240**	**350 870 902**	1	0.340	½	½	45	65	10	27	250
¾	20	**1812.320**	**350 871 002**	1	0.520	¾	¾	53	75	12	33	250
1	25	**1812.400**	**350 871 102**	1	0.575	1	1	64	90	15	40	250
1 ¼	32	**1812.480**	**350 871 202**	1	0.950	1 ¼	1 ¼	77	110	19	52	250
1 ½	40	**1812.560**	**350 871 302**	1	1.290	1 ½	1 ½	89	120	20	61	250
2	50	**1812.640**	**350 871 402**	1	1.950	2	2	111	150	23	77	250
2 ½	65	**1812.720**	**350 871 502**	1	2.900	2 ½	2 ½	122	180	22	98	560
3	80	**1812.800**	**350 871 602**	1	4.400	3	3	136	210	27	117	560



Fine filter, PN 16

- Temperature: max. 30°C
- Material: gunmetal, plastic
- Connection: male thread

GN (inch)	DN (mm)	JRG Code	GF Code	SP	Weight (kg)	d1 Rp (inch)	d2 (mm)	h1 (mm)	h3 (mm)	l (mm)	z (mm)	µm
1	25	**1830.400**	**350 690 001**	1	3.000	1	122	370	430	130	48	100
1 ¼	32	**1830.480**	**350 690 002**	1	3.150	1 ¼	122	372	432	150	56	100
1 ½	40	**1830.560**	**350 690 003**	1	3.200	1 ½	122	374	434	150	56	100
2	50	**1830.640**	**350 690 004**	1	3.450	2	122	380	440	160	56	100



Sampling valve, PN 16

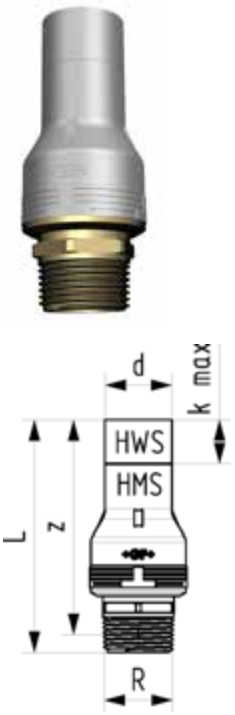
- Description: for microbiological water analysis with temperature indicator
- Temperature: max. 90°C
- Material: gunmetal, stainless steel, EPDM
- Connection: male thread

GN (inch)	DN (mm)	JRG Code	GF Code	SP	Weight (kg)
¼	8	**7306.080**	**351 110 365**	1	0.190
⅜	8	**7306.160**	**351 110 500**	1	0.190

GN (inch)	DN (mm)	d1 R (inch)	d3 (mm)	h (mm)	l (mm)	l1 (mm)	l2 (mm)	⬡1	⬡3	⬡2
¼	8	¼	8	65	35	16	125	20	14	5
⅜	8	⅜	8	65	35	16	125	20	14	5

System adapters

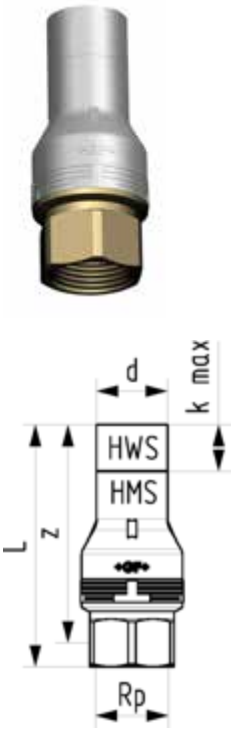
Male thread
Female thread
Loose nut
Adapter union



Adapter - male thread

Socket fusion transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

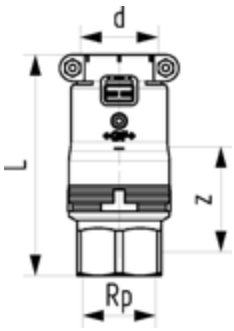
d (mm)	R (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)	k max. (mm)
16	½	**761 069 666**	1	0.083	96	83	22
20	½	**761 069 667**	1	0.106	99	86	24
20	¾	**761 069 668**	1	0.120	101	86	24
25	¾	**761 069 669**	1	0.146	104	89	23
25	1	**761 069 670**	1	0.161	107	90	23
32	1	**761 069 671**	1	0.239	111	94	21
40	1 ¼	**761 069 672**	1	0.389	133	114	24
50	1 ½	**761 069 673**	1	0.489	138	119	22
63	2	**761 069 674**	1	0.808	156	132	21



Adapter - female thread

Socket fusion transition to female thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

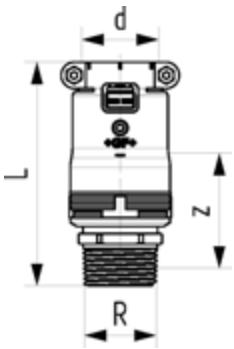
d (mm)	Rp (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)	k max. (mm)
16	½	**761 069 675**	1	0.091	97	84	22
20	½	**761 069 676**	1	0.104	100	87	23
20	¾	**761 069 677**	1	0.132	100	85	23
25	¾	**761 069 678**	1	0.151	104	89	23
25	1	**761 069 679**	1	0.189	108	91	23
32	1	**761 069 680**	1	0.184	109	92	21
40	1 ¼	**761 069 681**	1	0.408	130	111	24
50	1 ½	**761 069 682**	1	0.564	135	116	22
63	2	**761 069 683**	1	0.789	148	124	21



Adapter - female thread

Electro fusion transition to female thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

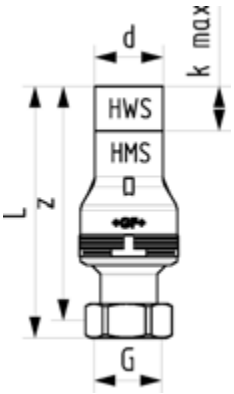
d (mm)	Rp (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	½	**761 069 702**	1	0.102	88	35
20	½	**761 069 703**	1	0.112	91	37
20	¾	**761 069 704**	1	0.137	91	35
25	¾	**761 069 705**	1	0.172	95	37
25	1	**761 069 706**	1	0.202	100	39
32	1	**761 069 707**	1	0.235	100	39
40	1 ¼	**761 069 708**	1	0.424	119	51
50	1 ½	**761 069 709**	1	0.591	124	56
63	2	**761 069 710**	1	0.836	142	65



Adapter - male thread

Electro fusion transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

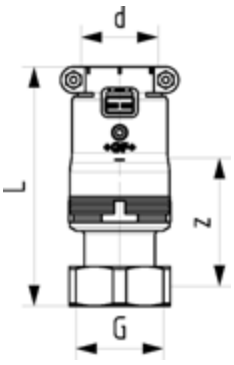
d (mm)	R (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	½	**761 069 711**	1	0.093	87	36
20	½	**761 069 712**	1	0.120	90	37
20	¾	**761 069 713**	1	0.125	92	38
25	¾	**761 069 714**	1	0.172	96	39
25	1	**761 069 715**	1	0.175	98	39
32	1	**761 069 716**	1	0.254	102	43
40	1 ¼	**761 069 717**	1	0.405	122	56
50	1 ½	**761 069 718**	1	0.526	127	61
63	2	**761 069 719**	1	0.855	150	76



Adapter loose union nut - flat seal

Socket fusion transition to loose nut adapter concering
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved
Incl. flat seal EPDM

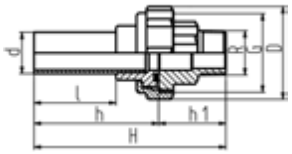
	d (mm)	G (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)	k max. (mm)	L min. SF (mm)
	16	¾	**761 069 684**	1	0.715	100	93	22	17
	20	¾	**761 069 685**	1	0.158	102	94	24	16
	20	1	**761 069 686**	1	0.171	107	98	24	16
	25	¾	**761 069 687**	1	0.171	108	101	23	20
	25	1	**761 069 688**	1	0.211	110	102	23	20
	25	1 ¼	**761 069 689**	1	0.274	118	109	23	20
	32	1	**761 069 690**	1	0.260	118	110	21	22
	32	1 ¼	**761 069 691**	1	0.289	118	110	21	22
	32	1 ½	**761 069 692**	1	0.358	119	110	21	22
	40	1 ¼	**761 069 693**	1	0.378	134	105	24	26
	40	1 ½	**761 069 694**	1	0.402	132	124	24	24
	40	2	**761 069 695**	1	0.576	139	126	24	24
	50	1 ¾	**761 069 696**	1	0.607	142	131	22	28
	50	2 ¼	**761 069 697**	1	0.705	150	138	22	28
	63	2 ⅜	**761 069 698**	1	1.051	159	147	21	30
	63	2 ¾	**761 069 699**	1	1.177	161	146	21	30
*	16	½	**761 069 700**	1	0.125	98	91	22	16
*	20	¾	**761 069 701**	1	0.116	102	95	24	16



Adapter loose union nut - flat seal

Electro fusion transition to loose nut adapter
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved
Incl. flat seal EPDM

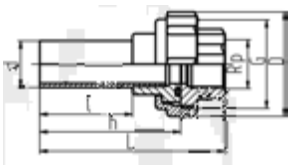
	d (mm)	G (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)
	16	¾	**761 069 720**	1	0.143	90	46
	20	¾	**761 069 721**	1	0.138	92	46
	20	1	**761 069 722**	1	0.196	98	50
	25	¾	**761 069 723**	1	0.127	99	50
	25	1	**761 069 724**	1	0.192	102	51
	25	1 ¼	**761 069 725**	1	0.254	109	58
	32	1	**761 069 726**	1	0.223	109	58
	32	1 ¼	**761 069 727**	1	0.293	109	58
	32	1 ½	**761 069 728**	1	0.373	110	58
	40	1 ¼	**761 069 729**	1	0.395	123	67
	40	1 ½	**761 069 730**	1	0.479	121	64
	40	2	**761 069 731**	1	0.588	128	68
	50	1 ¾	**761 069 732**	1	0.629	131	73
	50	2 ¼	**761 069 733**	1	0.731	138	77
	63	2 ⅜	**761 069 734**	1	1.107	152	89
	63	2 ¾	**761 069 735**	1	1.225	155	89
*	16	½	**761 069 736**	1	0.162	88	44
*	20	¾	**761 069 737**	1	0.156	93	47



Adaptor union

Spigot for electro fusion and socket fusion - male thread
Including EPDM O-Ring, quality suitable for potable water

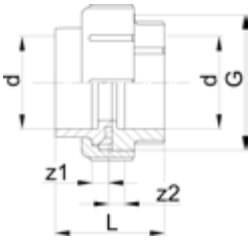
d (mm)	R (inch)	Code	SP	Weight (kg)	D (mm)	H (mm)	G (inch)	h (mm)	h1 (mm)	l (mm)
16	½	**760 857 200**	1	0.221	41	106	1	68	38	45
20	½	**760 857 201**	1	0.232	46	110	1 ¼	70	40	47
25	¾	**760 857 202**	1	0.340	52	117	1 ½	76	41	50
32	1	**760 857 203**	1	0.489	64	123	2	78	45	50
40	1 ¼	**760 857 204**	1	0.673	79	136	2 ½	88	48	56
50	1 ½	**760 857 205**	1	0.783	85	141	2 ¾	93	48	58
63	2	**760 857 206**	1	1.100	104	152	3 ½	98	54	60



Adaptor union

Spigot for electro fusion and socket fusion - female thread
Including EPDM O-Ring, quality suitable for potable water

d (mm)	Rp (inch)	GF Code	SP	D (mm)	L (mm)	G (inch)	l (mm)	h (mm)	z (mm)
16	½	**760 857 207**	1	41	90	1	45	68	9
20	½	**760 857 208**	1	46	94	1 ¼	47	70	10
25	¾	**760 857 209**	1	52	100	1 ½	50	76	9
32	1	**760 857 210**	1	64	103	2	50	78	8
40	1 ¼	**760 857 211**	1	79	114	2 ½	56	88	7
50	1 ½	**760 857 212**	1	85	119	2 ¾	58	93	7
63	2	**760 857 213**	1	104	126	3 ½	60	98	5

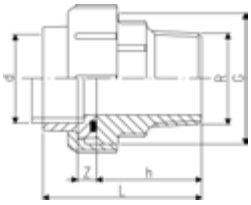


Union, socket-socket

Including EPDM O-Ring, quality suitable for potable water

d (mm)	Code	SP	Weight (kg)	G (inch)	L (mm)	z1 (mm)	z2 (mm)
16	**761 066 691**	10	0.135	1	43	8	5
20	**761 066 692**	10	0.164	1 ¼	43	8	5
25	**761 066 693**	10	0.208	1 ½	49	8	5
32	**761 066 694**	5	0.300	2	53	8	5
40	**761 066 695**	5	0.469	2 ½	59	10	5
50	**761 066 696**	2	0.525	2 ¾	65	10	5
63	**761 066 697**	2	0.766	3 ½	71	10	5

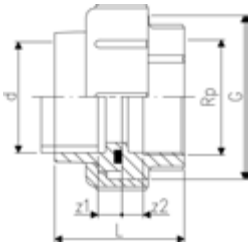
Adaptor union - socket-male thread



Including EPDM O-Ring, quality suitable for potable water

d (mm)	R (inch)	GF Code	SP	G (inch)	L (mm)	h (mm)	z (mm)
16	½	**760 857 155**	10	1	61	38	8
20	½	**760 857 156**	10	1 ¼	63	40	8
25	¾	**760 857 157**	10	1 ½	67	41	8
32	1	**760 857 158**	5	2	73	45	8
40	1 ¼	**760 857 159**	5	2 ½	80	48	10
50	1 ½	**760 857 160**	2	2 ¾	83	48	10
63	2	**760 857 161**	2	3 ½	92	54	10

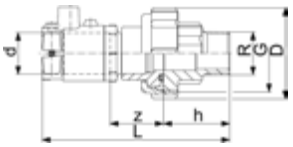
Adaptor union - socket-female thread



Including EPDM O-Ring, quality suitable for potable water

d (mm)	Rp (inch)	Code	SP	L (mm)	z1 (mm)	z2 (mm)	G (inch)
16	½	**760 857 162**	10	45	8	9	1
20	½	**760 857 163**	10	47	8	10	11/4
25	¾	**760 857 164**	10	50	8	9	11/2
32	1	**760 857 165**	5	53	8	8	2
40	1 ¼	**760 857 166**	5	58	10	7	21/2
50	1 ½	**760 857 167**	2	61	10	7	23/4
63	2	**760 857 168**	2	66	10	5	31/2

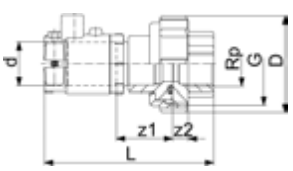
Electrofusion adaptor union



Including EPDM O-Ring, quality suitable for potable water

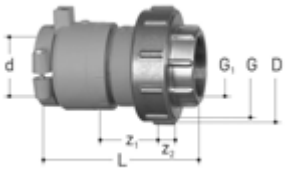
d (mm)	R (inch)	GF Code	SP	D (mm)	L (mm)	G (inch)	h (mm)	z (mm)
16	½	**760 857 214**	1	41	106	1	38	31
20	½	**760 857 215**	1	50	109	1 ¼	40	30
25	¾	**760 857 216**	1	56	116	1 ½	41	33
32	1	**760 857 217**	1	69	124	2	45	37
40	1 ¼	**760 857 218**	1	83	137	2 ½	48	42
50	1 ½	**760 857 219**	1	90	143	2 ¾	48	46
63	2	**760 857 220**	1	110	158	3 ½	54	53

Electrofusion adaptor union



Including EPDM O-Ring, quality suitable for potable water

d (mm)	Rp (inch)	Code	SP	D (mm)	L (mm)	G (inch)	z1 (mm)	z2 (mm)
16	½	**760 857 221**	1	41	90	1	31	9
20	½	**760 857 222**	1	50	93	1 ¼	30	10
25	¾	**760 857 223**	1	56	99	1 ½	33	9
32	1	**760 857 224**	1	69	104	2	37	8
40	1 ¼	**760 857 225**	1	83	115	2 ½	42	7
50	1 ½	**760 857 226**	1	90	121	2 ¾	46	7
63	2	**760 857 227**	1	110	132	3 ½	53	5



Female threaded HWS screw connection for valves

With EPDM O-ring seals Comes
With Klingerit gasket

d (mm)	G1 (inch)	Code	SP	Weight (kg)	D (mm)	L (mm)	z1 (mm)	z2 (mm)	G (inch)
20	¾	**760 857 228**	1	0.245	50	89	30	10	1 ¼
25	1	**760 857 229**	1	0.316	56	95	33	10	1 ½
32	1 ¼	**760 857 230**	1	0.427	69	98	37	10	2
40	1 ½	**760 857 231**	1	0.705	83	112	42	11	2 ½
50	1 ¾	**760 857 232**	1	0.835	90	118	46	11	2 ¾
63	2 ⅜	**760 857 233**	1	1.233	110	127	53	11	3 ½

Adaptor INSTAFLEX-Hepworth

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	d (mm)	L (mm)
16	20	**761 066 326**	10	0.005	15	54

Accessories

Union nut

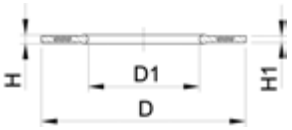
Suitable for flange or union nut

d (mm)	G (inch)	Code	SP	Weight (kg)
16	1	**761 066 188**	130	0.090
20	1 ¼	**761 066 100**	140	0.100
25	1 ½	**761 066 101**	80	0.104
32	2	**761 066 102**	0	0.142
40	2 ½	**761 066 103**	0	0.226
50	2 ¾	**761 066 104**	0	0.261
63	3 ½	**761 066 105**	0	0.334

EPDM O-Ring

Quality suitable for potable water

d (mm)	Code	SP	Weight (kg)	d1 (mm)	D (mm)	H (mm)
16	**761 066 558**	0	0.002	19	26	4
20	**761 066 124**	0	0.002	23	31	4
25	**761 066 125**	0	0.001	28	35	4
32	**761 066 126**	0	0.001	36	43	4
40	**761 066 127**	0	0.004	44	55	5
50	**761 066 128**	0	0.001	53	64	5
63	**761 066 129**	0	0.002	69	80	5
75	**761 070 036**	0	0.007	82	93	5
90	**761 070 037**	0	0.008	101	112	5
110	**761 070 038**	0	0.016	120	134	7

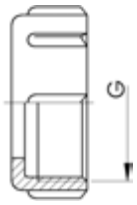


Profile flange gasket metric
For flange adaptors without chamfer

Model:

- For flange adaptor No. 27 79 85 PP-H SDR11 without chamfer
- Profile Gasket with carbon steel insert (type G-ST-P/K)
- Hardness: 70° shore **EPDM**, 75° shore **FKM**

d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	FKM Code	SP	Weight (kg)	D (mm)	D1 (mm)	H (mm)	H1 (mm)
20	15	16	**748 440 706**	0	0.009	**749 440 706**	0	0.013	51	20	4	3
25	20	16	**748 440 707**	0	0.015	**749 440 707**	0	0.014	61	22	4	3
32	25	16	**748 440 708**	0	0.013	**749 440 708**	0	0.019	71	28	4	3
40	32	16	**748 440 709**	0	0.019	**749 440 709**	0	0.026	82	40	4	3
50	40	16	**748 440 710**	0	0.029	**749 440 710**	0	0.039	92	46	4	3
63	50	16	**748 440 711**	0	0.041	**749 440 711**	0	0.050	107	58	5	4
75	65	16	**748 440 712**	0	0.053	**749 440 712**	0	0.082	127	69	5	4
90	80	16	**748 440 713**	0	0.064	**749 440 713**	0	0.083	142	84	5	4



Union nut

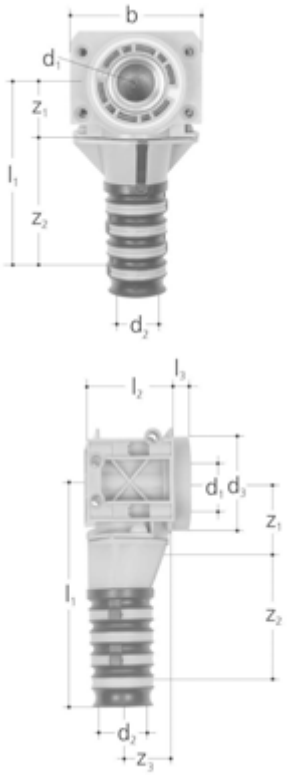
Suitable for flange adaptor and union

d (mm)	G (inch)	Code	SP	Weight (kg)
16	1	**761 066 980**	10	0.120
20	1 ¼	**761 066 971**	10	0.090
25	1 ½	**761 066 972**	10	0.110
32	2	**761 066 973**	10	0.130
40	2 ½	**761 066 974**	10	0.180
50	2 ¾	**766 066 975**	10	0.210
63	3 ½	**766 066 976**	2	0.280

GF Piping Systems

INSTAFLEX

Pipes outlets

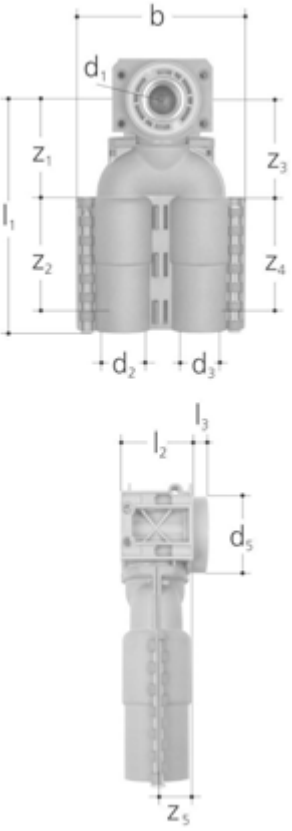


INSTAFLEX Box 90°

- Material: brass (low lead), plastic
- Connection: female thread
- Consisting of: box body, box foot, bend, clamp screw connection

d (mm)	Rp (inch)	GF Code	SP	Weight (kg)
16	½	**760 857 187**	1	0.110
20	½	**760 857 188**	1	0.148
20	¾	**760 857 189**	1	0.182

d (mm)	b (mm)	d1 Rp (inch)	d2 (mm)	d3 (mm)	l1 (mm)	l2 (mm)	l3 (mm)	z1 (mm)	z2 (mm)	z3 (mm)
16	16	½	25	47	109	41	10	37	50	21
20	20	½	29	47	118	41	10	44	50	17
20	20	¾	29	47	118	41	10	44	50	15

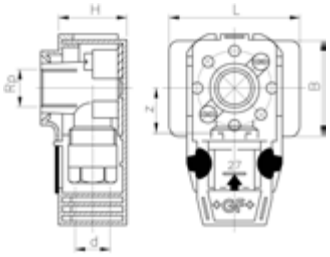


INSTAFLEX Box 2-way 90°

- Material: brass (low lead), plastic
- Connection: female thread
- Consisting of: box body, box foot, bend, clamp screw connection

d-d (mm)	Rp (inch)	GF Code	SP	Weight (kg)
16 - 16	½	**760 857 190**	1	0.400
20 - 16	½	**760 857 192**	1	0.400
20 - 20	½	**760 857 193**	1	0.400

b (mm)	d1 Rp (inch)	d2 (mm)	d3 (mm)	d5 (mm)	l1 (mm)	l2 (mm)	l3 (mm)	z1 (mm)	z2 (mm)	z3 (mm)	z4 (mm)	z5 (mm)
110	½	25	25	47	148	41	10	66	50	66	50	17
110	½	29	25	47	148	41	10	69	50	66	50	17
110	½	29	29	47	148	41	10	69	50	69	50	17



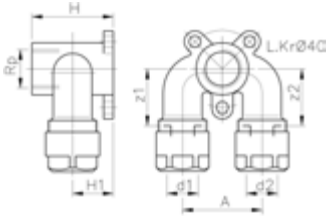
Single pipe outlet 3/4"

d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	L (mm)	B (mm)	z (mm)
20	¾	**760 856 022**	1	0.350	46	70	50	28

Single pipe outlet - flange

Screw 760 856 040, self tapping M6 x 16
* for GIS wall mounting

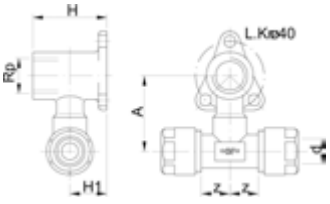
	d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	H1 (mm)	z (mm)
	16	½	**760 857 007**	10	0.180	44	22	28
	16	½	**760 857 008**	2	0.279	60	22	28
	16	½	**760 857 009**	2	0.319	80	22	28
*	16	½	**760 857 010**	2	0.333	100	22	28
	20	½	**760 857 011**	10	0.213	44	25	28
	20	¾	**760 857 012**	1	0.313	44	25	28



Dual pipe outlet - flange

Screw 760 856 040, self tapping M6 x 16
* for GIS wall mounting

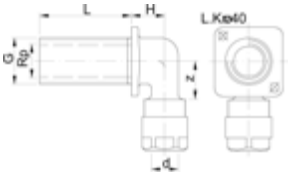
	d1 (mm)	d2 (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	H1 (mm)	z1 (mm)	z2 (mm)	A (mm)
	16	16	½	**760 857 013**	1	0.380	44	22	30	30	40
*	16	16	½	**760 857 014**	1	1.756	100	22	30	30	40
	20	20	½	**760 857 015**	1	0.439	44	25	32	32	40



Dual pipe outlet - flange

Screw 760 856 040, self tapping M6 x 16

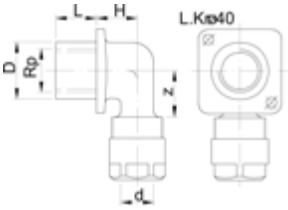
d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	H1 (mm)	z (mm)
16	½	**760 853 014**	10	0.344	44	22	19



Single pipe outlet - mounting flange

Screw 760 856 040, self tapping M6 x 16
* on request

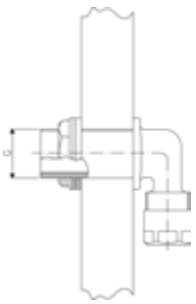
	d (mm)	Rp (inch)	G (inch)	Code	SP	Weight (kg)	L (mm)	H (mm)	z (mm)
	16	½	¾	**760 856 041**	2	0.236	30	20	26
*	16	½	¾	**760 856 050**	2	0.254	42	20	26
*	16	½	¾	**760 869 906**	2	0.273	55	20	26



Single pipe outlet - mounting flange

Screw 760 856 040, self tapping M6 x 16

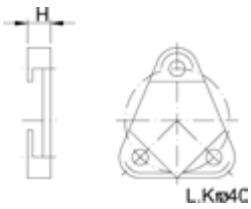
d (mm)	Rp (inch)	Code	SP	Weight (kg)	D (mm)	L (mm)	H (mm)	z (mm)
16	½	**760 869 904**	2	0.222	27	20	22	26



Fastening set

Appropriate to outlet joint - male thread
Consists of: Union nut washer, seal
From the INSTAFLEX range

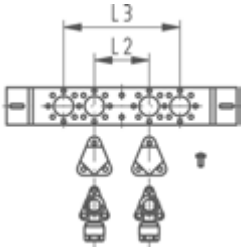
G (inch)	Code	SP	Weight (kg)
¾	**760 854 699**	10	0.031



Rubber isolator for pipe outlets

Suitable for dual pipe outlets

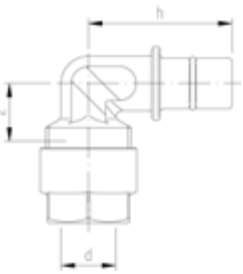
H (mm)	Code	SP	Weight (kg)	z (mm)
9	**760 856 205**	20	0.007	3



Pipe outlet GIS

Consitsting: 1 Distance plate, 2 Rubber isolator, 6 Screws, 2 Single pipe outlet d16 - 1/2"

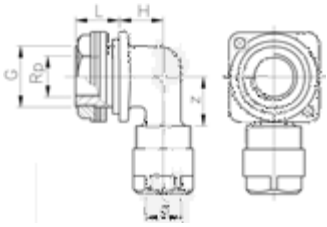
L2 (mm)	L3 (mm)	Code	SP	Weight (kg)
73	153	**760 856 010**	1	0.933



Pipe outlet for flushing cistern Meplafix 90°

Incl. protection cap

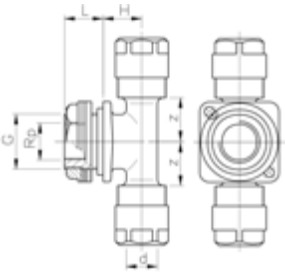
d (mm)	Code	SP	Weight (kg)	h (mm)	z (mm)
16	**760 857 016**	1	0.163	43	21



Single pipe outlet

With fastening set

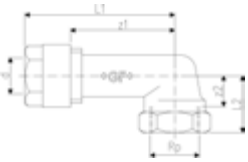
d (mm)	Rp (inch)	Code	SP	Weight (kg)	G (inch)	H (mm)	L (mm)	z (mm)
16	½	**760 857 017**	5	0.243	1	22	14	26



Dual pipe outlet - not interchangeable

With fastening set

d (mm)	Rp (inch)	Code	SP	Weight (kg)	G (inch)	L (mm)	H (mm)	z (mm)
16	½	**760 857 018**	5	0.340	1	14	22	26



Single pipe outlet 90°

* as long as stock last

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z1 (mm)	z2 (mm)
*	16	½	**760 854 882**	5	0.210	67	30	46	17
*	20	½	**760 854 883**	5	0.225	74	30	48	17
*	20	¾	**760 854 884**	5	0.235	76	30	50	16

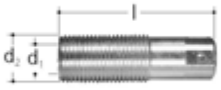
Wall inlet plug

*Replacement seal code no. 760 853 175, on request

G (inch)	Code	SP	Weight (kg)
½	**760 853 297**	10	0.088

Fastening sleeve

G (inch)	Code	SP	Weight (kg)
½	**760 853 298**	10	0.050



Pressure-pin

- Material: steel, galvanized
- Connection: male thread

GN (inch)	JRG Code	GF Code	SP	Weight (kg)	d1 G (inch)	l (mm)
½	**5741.092**	**355 564 103**	10	0.120	½	65

Venting Screw

- Description: to 5741

d (inch)	Code	SP	Weight (kg)
¼	**355 564 102**	0	0.008

Gasket

- Description: to 5741

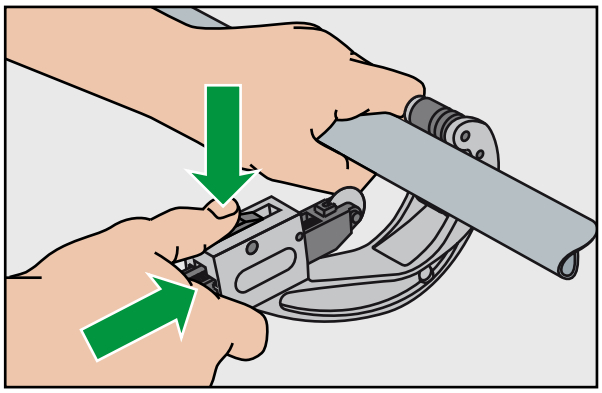
GF Code	SP	Weight (kg)	d1 (mm)	d2 (mm)	h (mm)
355 564 105	0	0.000	11	5	3

Notes:

INSTAFLEX

Electrofusion jointing HWS

Electrofusion HWS d16-d110



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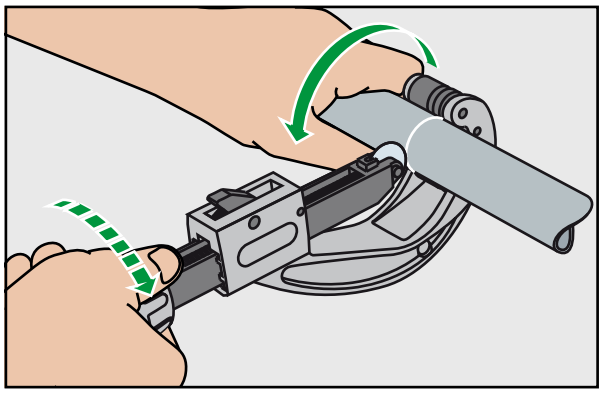

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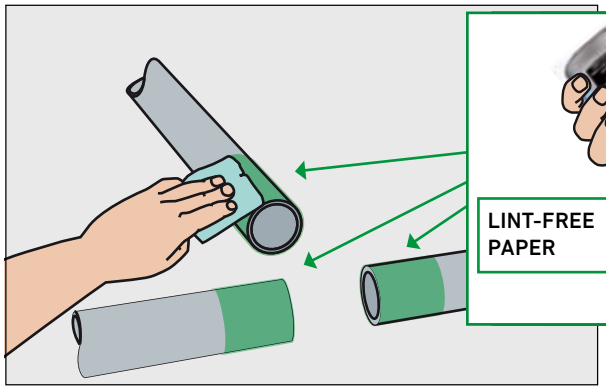

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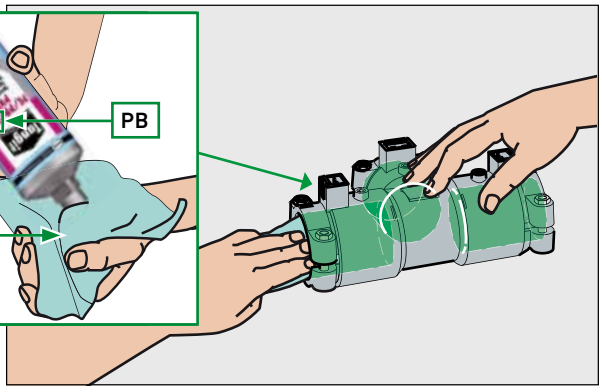

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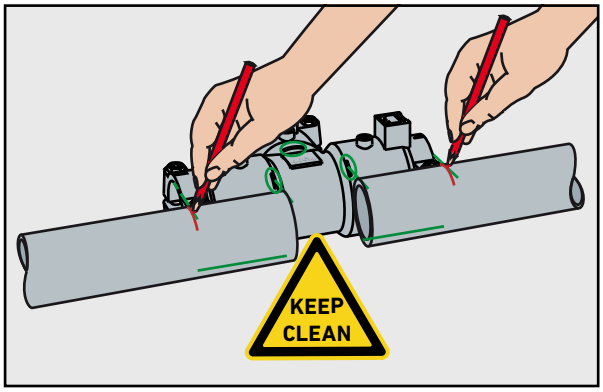

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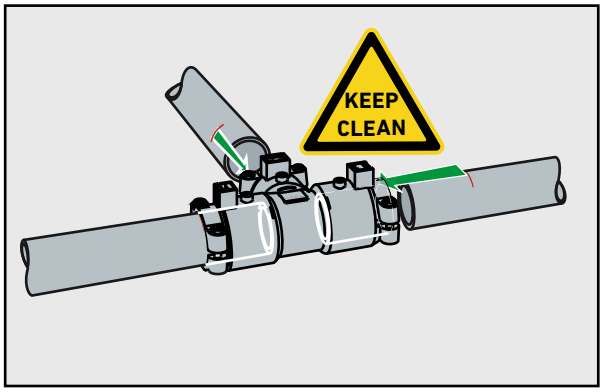

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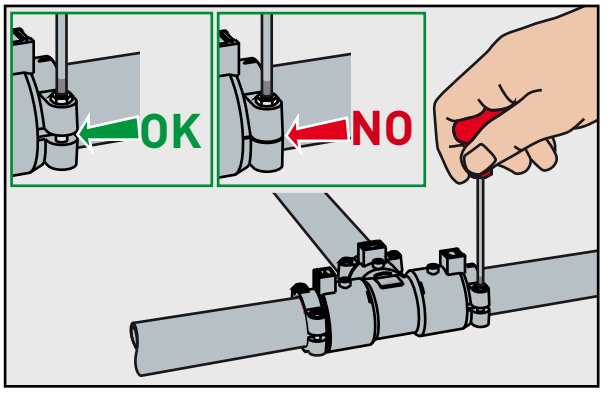

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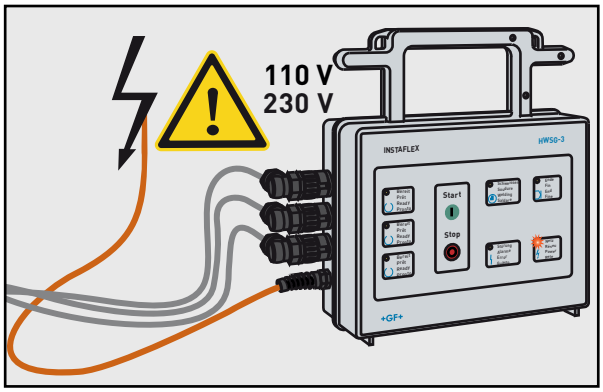

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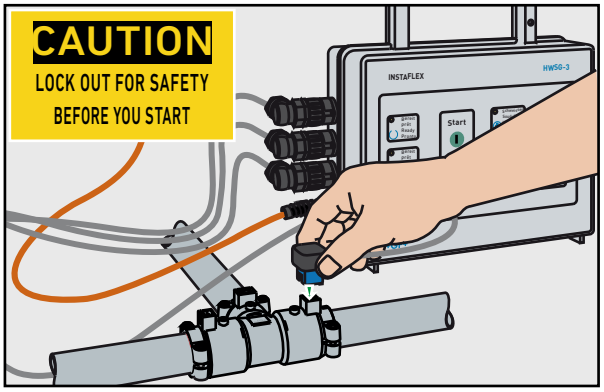

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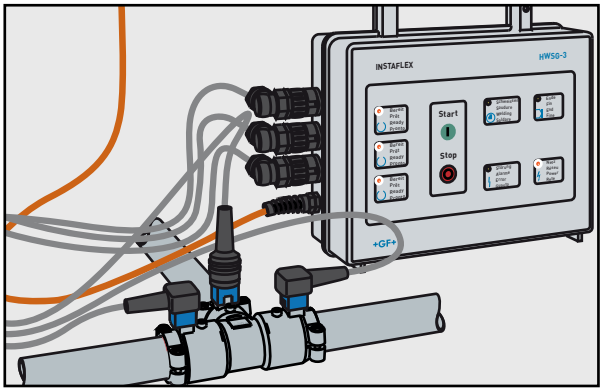

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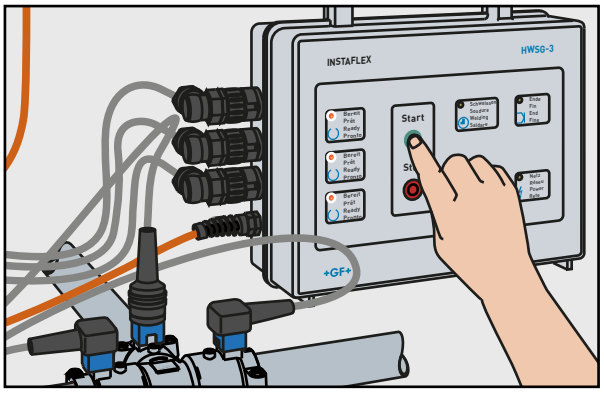

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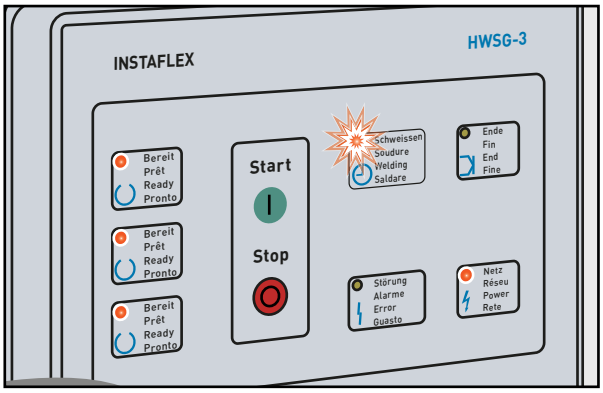

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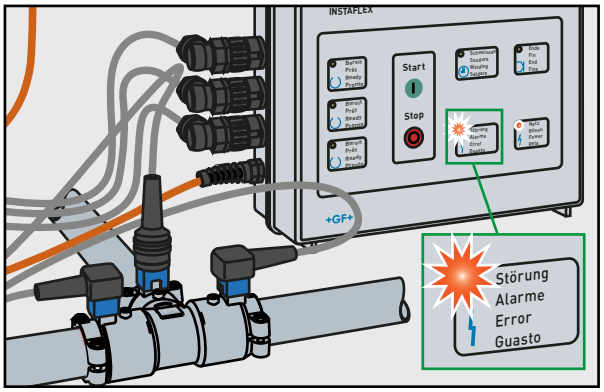

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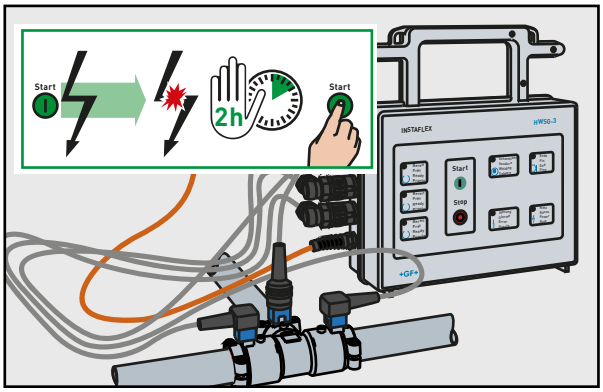

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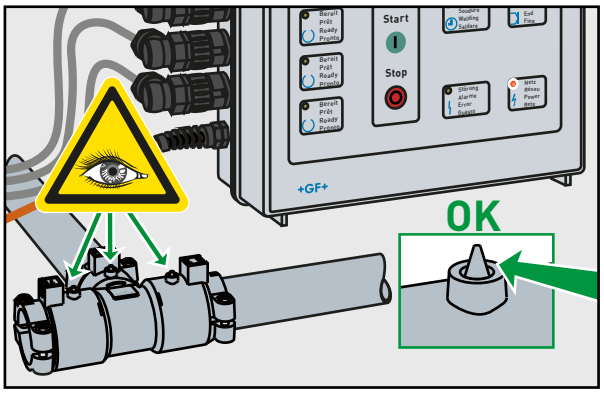

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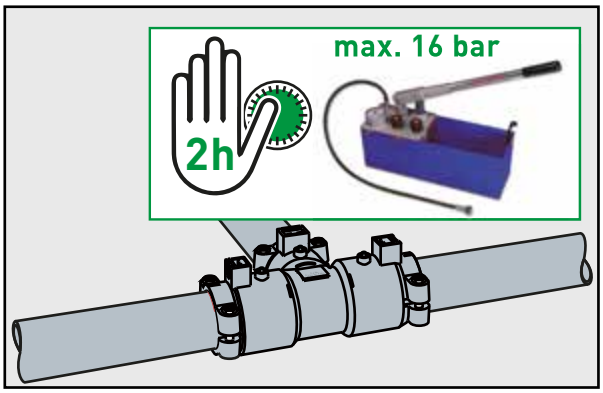
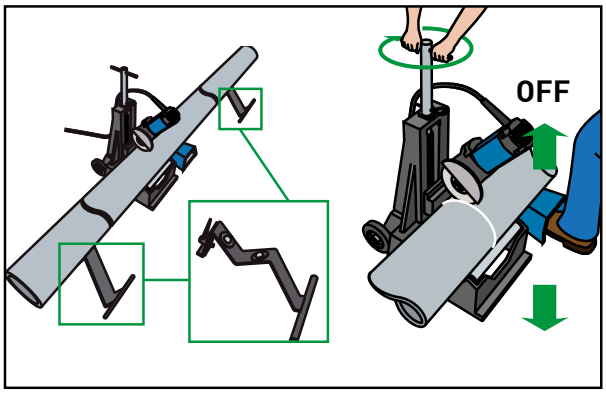


16

Electrofusion d125/d160/d225



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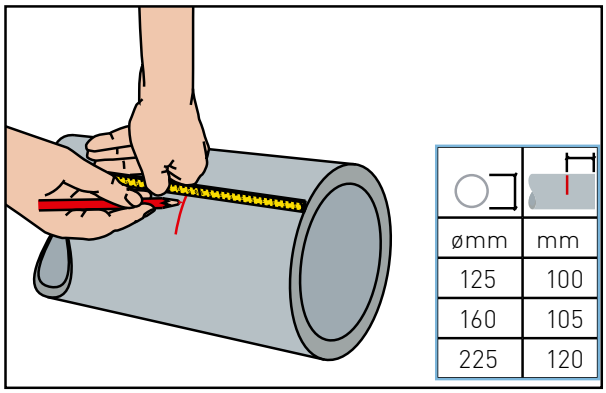
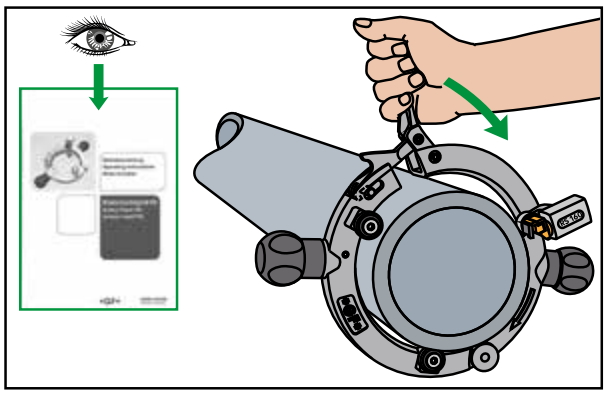


ø mm	mm
125	100
160	105
225	120

2



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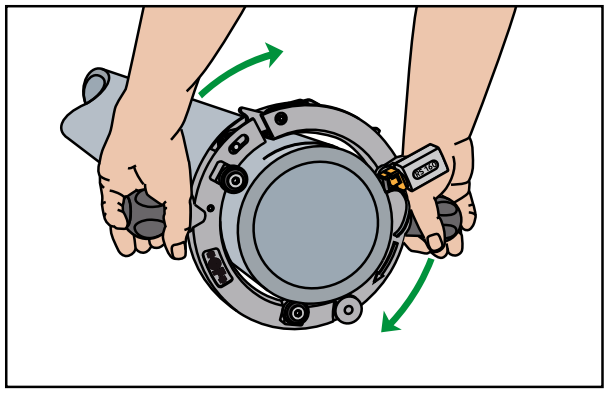

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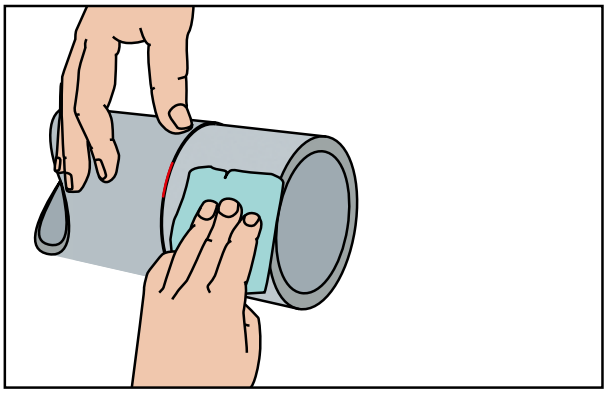

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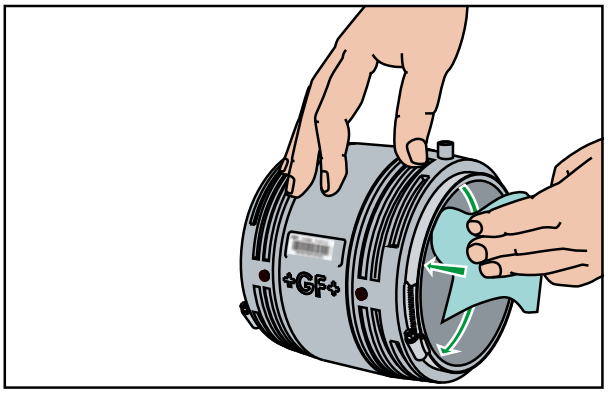
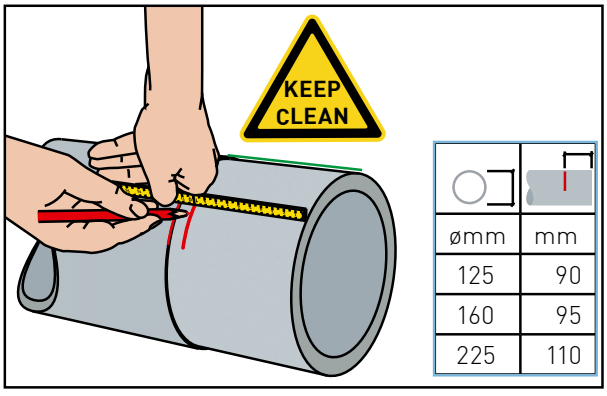
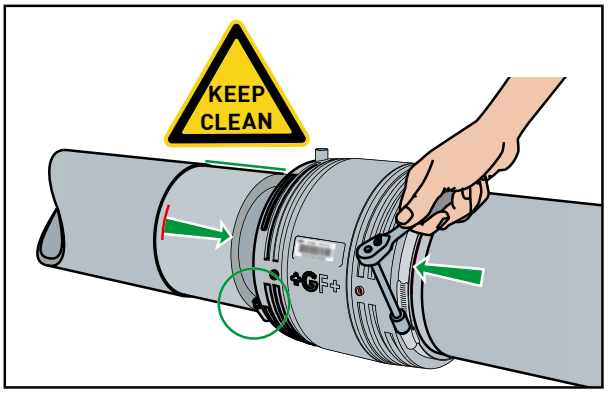


6



ø mm	mm
125	90
160	95
225	110

7



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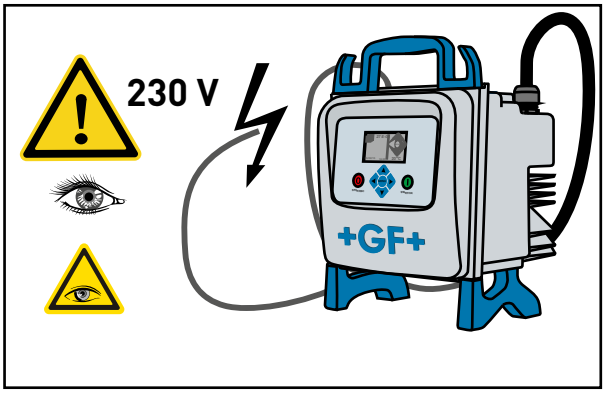

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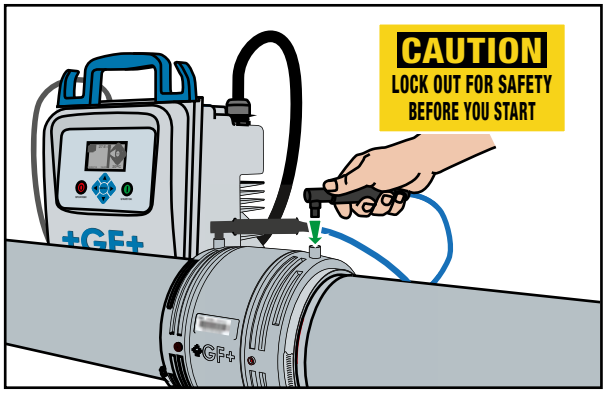

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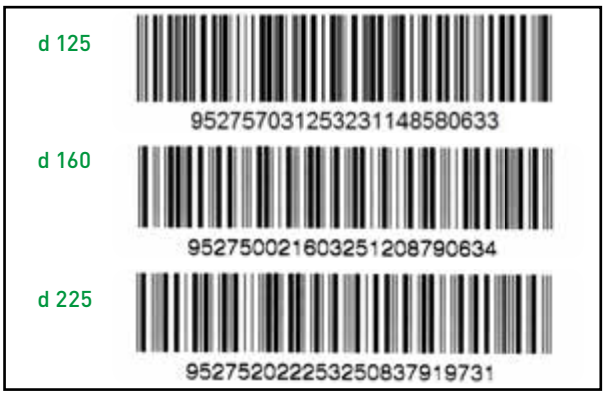

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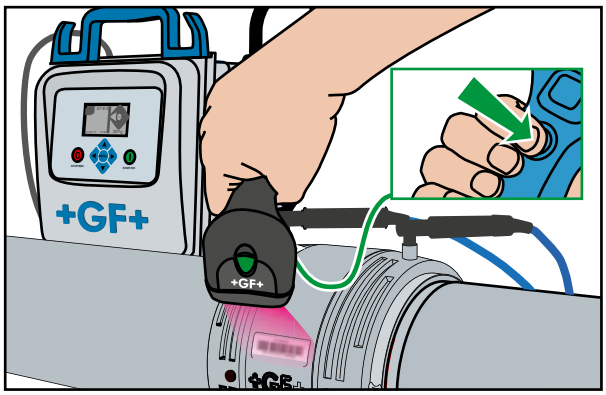

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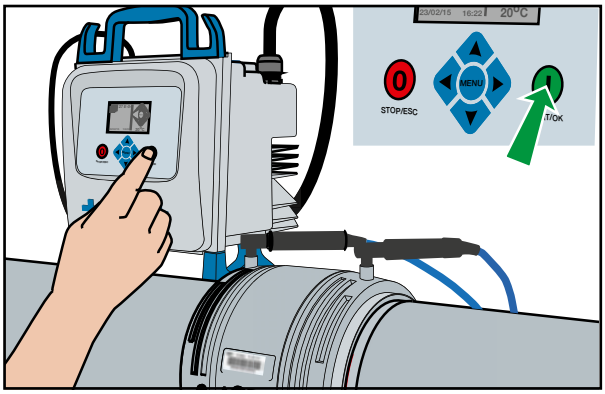

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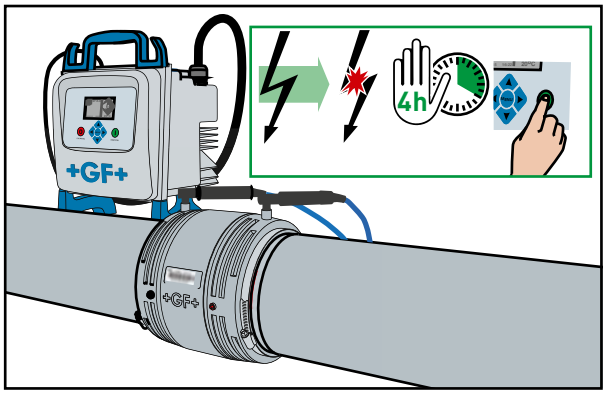

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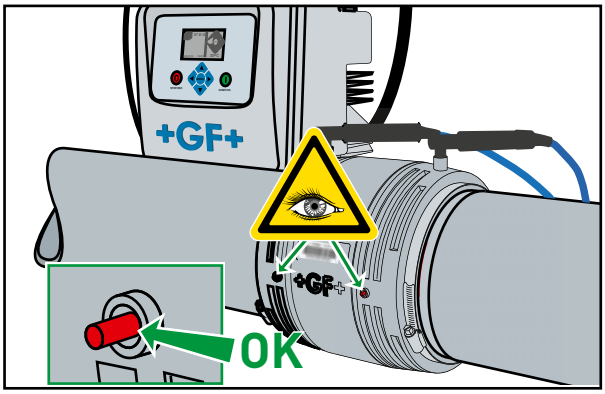
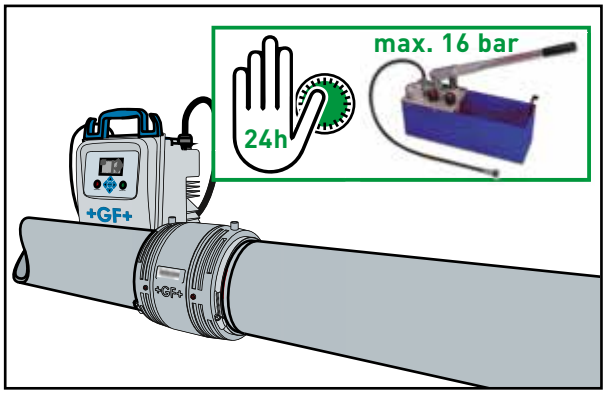


15



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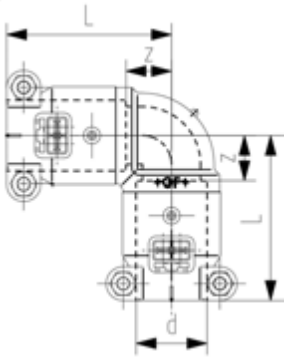
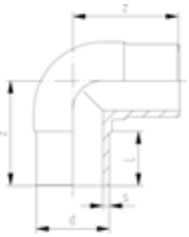


Electro fusion elbow 90°

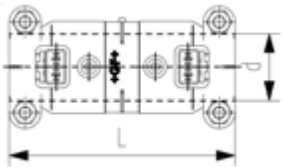
d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	**761 069 214**	1	0.023	47	10
20	**761 069 215**	1	0.027	54	14
25	**761 069 216**	1	0.039	58	16
32	**761 069 217**	1	0.079	60	18
40	**761 069 218**	1	0.128	69	22
50	**761 069 219**	1	0.206	78	29
63	**761 069 220**	1	0.328	86	36
75	**761 069 221**	1	0.515	112	45
90	**761 069 222**	1	0.811	127	54
110	**761 069 223**	1	1.330	146	66



Elbow 90°

- Material: PB

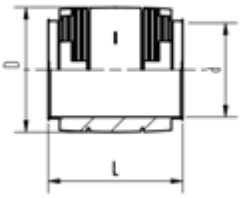
d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 258**	1	1.615	93	182
160	**761 065 259**	1	3.077	104	213
225	**761 065 260**	1	7.588	122	270
315	**761 065 321**	1	20.990	152	522



Electro fusion coupler

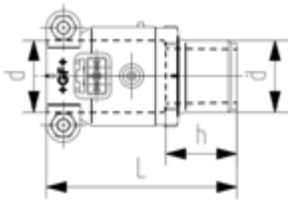
Suitable as sliding coupling

d (mm)	Code	SP	Weight (kg)	L (mm)
16	**761 069 200**	1	0.023	76
20	**761 069 201**	1	0.027	80
25	**761 069 202**	1	0.041	85
32	**761 069 203**	1	0.053	85
40	**761 069 204**	1	0.084	95
50	**761 069 205**	1	0.121	99
63	**761 069 206**	1	0.184	102
75	**761 069 265**	1	0.317	134
90	**761 069 266**	1	0.519	147
110	**761 069 267**	1	0.766	160



Electro fusion coupler - PN16

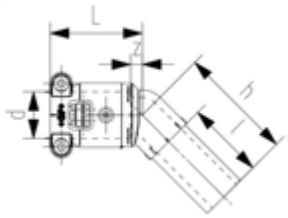
d (mm)	Code	SP	Weight (kg)	L (mm)
125	**761 069 555**	1	1.500	186
160	**761 069 556**	1	1.397	190
225	**761 069 557**	1	4.472	220



Electro fusion adaptor

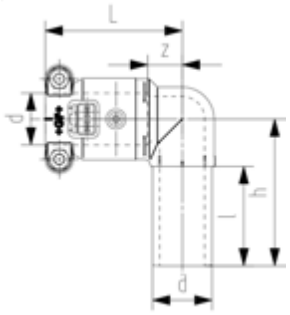
Transition to socket fusion - HMS

d (mm)	Code	SP	Weight (kg)	L (mm)	h (mm)
16	**761 069 207**	1	0.026	60	23
20	**761 069 208**	1	0.017	61	22
25	**761 069 209**	1	0.026	67	25
32	**761 069 210**	1	0.037	71	29
40	**761 069 211**	1	0.060	79	32
50	**761 069 212**	1	0.095	85	36
63	**761 069 213**	1	0.151	94	43



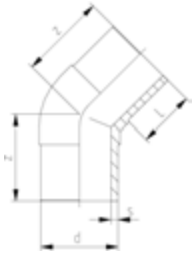
Elbow 45° socket-spigot

d (mm)	Code	SP	Weight (kg)	L (mm)	l (mm)	h (mm)	z (mm)
16	**761 069 447**	1	0.014	44	38	50	6
20	**761 069 448**	1	0.030	46	40	54	7
25	**761 069 449**	1	0.042	50	42	57	8
32	**761 069 450**	1	0.059	51	42	60	9
40	**761 069 451**	1	0.098	58	47	67	11
50	**761 069 452**	1	0.156	63	49	75	14
63	**761 069 453**	1	0.242	68	51	79	17



Elbow 90° socket-spigot

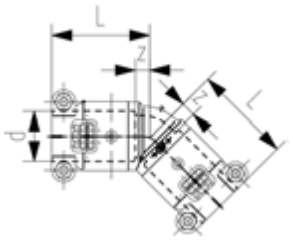
d (mm)	Code	SP	Weight (kg)	L (mm)	l (mm)	h (mm)	z (mm)
16	**761 069 434**	1	0.025	47	40	53	10
20	**761 069 435**	1	0.035	54	40	58	14
25	**761 069 436**	1	0.047	58	42	62	16
32	**761 069 437**	1	0.071	60	42	66	18
40	**761 069 438**	1	0.113	69	47	77	22
50	**761 069 439**	1	0.181	78	49	85	29
63	**761 069 440**	1	0.290	86	51	96	36



Elbow 45°

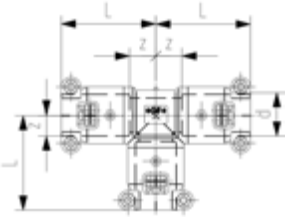
- Material: PB

d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 261**	1	1.246	92	140
160	**761 065 262**	1	2.379	102	162
225	**761 065 263**	1	6.065	122	200
315	**761 065 325**	20	6.065	420	245



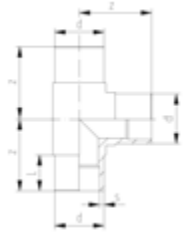
Electro fusion elbow 45°

d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	**761 069 227**	1	0.033	44	6
20	**761 069 228**	1	0.027	46	7
25	**761 069 229**	1	0.039	50	8
32	**761 069 230**	1	0.059	51	9
40	**761 069 231**	1	0.070	58	11
50	**761 069 232**	1	0.147	63	14
63	**761 069 233**	1	0.275	68	17
75	**761 069 234**	1	0.451	88	21
90	**761 069 235**	1	0.700	98	25
110	**761 069 236**	1	1.098	111	31



Electro fusion T-piece 90°- equal

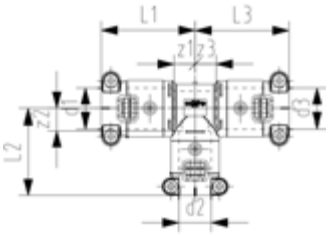
d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	**761 069 237**	1	0.053	47	10
20	**761 069 238**	1	0.067	54	14
25	**761 069 239**	1	0.089	58	16
32	**761 069 240**	1	0.116	60	18
40	**761 069 241**	1	0.185	69	22
50	**761 069 242**	1	0.290	78	29
63	**761 069 243**	1	0.452	86	36
75	**761 069 244**	1	0.747	112	45
90	**761 069 245**	1	0.890	127	54
110	**761 069 246**	1	1.884	146	66



Tee 90° - equal

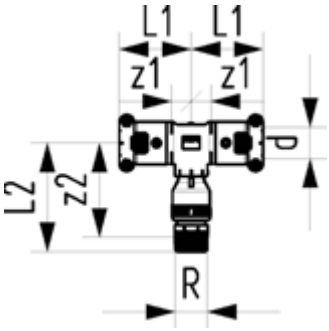
- Material: PB

d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 255**	1	2.397	93	183
160	**761 065 256**	1	4.312	102	210
225	**761 065 257**	1	11.984	122	270
315	**761 065 320**	1	20.105	569	280



Electro fusion T-piece 90° - reducer

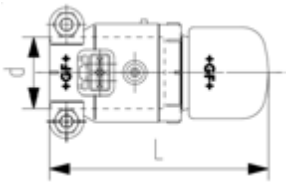
d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	L3 (mm)	z1 (mm)	z2 (mm)	z3 (mm)
20	16	16	**761 069 249**	1	0.058	54	47	47	14	10	10
20	16	20	**761 069 250**	1	0.041	54	49	54	14	11	14
25	16	25	**761 069 251**	1	0.082	58	54	58	16	16	16
25	20	20	**761 069 256**	1	0.079	58	54	54	16	14	14
25	20	25	**761 069 252**	1	0.079	58	54	58	16	14	16
25	25	20	**761 069 257**	1	0.081	58	58	54	16	16	14
32	20	32	**761 069 253**	1	0.088	60	58	60	18	18	18
32	25	25	**761 069 258**	1	0.098	60	58	58	18	16	16
32	25	32	**761 069 254**	1	0.095	60	58	60	18	16	18
40	20	40	**761 069 259**	1	0.157	69	63	69	22	23	22
40	25	40	**761 069 255**	1	0.170	69	63	69	22	21	22
40	32	40	**761 069 260**	1	0.168	69	63	69	22	21	22
50	25	50	**761 069 261**	1	0.246	78	72	78	29	30	29
50	32	50	**761 069 262**	1	0.260	78	72	78	29	30	29
63	25	63	**761 069 263**	1	0.360	86	81	86	36	39	36
63	40	63	**761 069 264**	1	0.384	86	85	86	36	38	36



Electro fusion adapter T-piece 90° - male thread

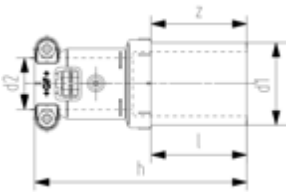
Electro fusion T-piece with transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

d (mm)	R (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z1 (mm)	z2 (mm)
25	¾	**761 069 738**	1	0.177	58	88	16	73
32	1	**761 069 739**	1	0.246	60	97	18	80



Electro fusion - end cap

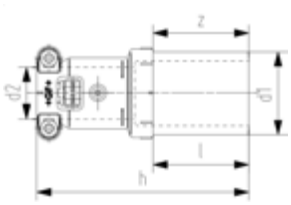
d (mm)	Code	SP	Weight (kg)	L (mm)
16	**761 069 270**	1	0.022	67
20	**761 069 271**	1	0.025	70
25	**761 069 272**	1	0.036	77
32	**761 069 273**	1	0.054	83
40	**761 069 274**	1	0.095	95
50	**761 069 275**	1	0.153	104
63	**761 069 276**	1	0.265	116



Electro fusion - reducer

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	h (mm)	z (mm)
20	16	**761 069 277**	1	0.023	40	83	45
25	16	**761 069 278**	1	0.026	42	83	46
25	20	**761 069 279**	1	0.026	42	86	47
32	16	**761 069 457**	1	0.033	42	86	48
32	20	**761 069 280**	1	0.030	42	84	45
32	25	**761 069 281**	1	0.038	42	89	47
40	20	**761 069 458**	1	0.055	47	102	62
40	25	**761 069 459**	1	0.060	47	104	62
40	32	**761 069 282**	1	0.060	47	95	53
50	20	**761 069 460**	1	0.070	49	102	62
50	25	**761 069 461**	1	0.075	49	104	62
50	32	**761 069 462**	1	0.075	49	95	53
50	40	**761 069 283**	1	0.091	49	103	56
63	20	**761 069 463**	1	0.096	51	102	62
63	25	**761 069 464**	1	0.109	51	104	62
63	32	**761 069 284**	1	0.101	51	95	53
63	40	**761 069 465**	1	0.121	51	103	56
63	50	**761 069 285**	1	0.141	51	106	57
75	63	**761 069 286**	1	0.232	67	129	78
90	63	**761 069 287**	1	0.289	74	128	77

table continued on the next page



d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	h (mm)	z (mm)
90	75	**761 069 288**	1	0.354	74	143	76
110	63	**761 069 289**	1	0.414	80	135	84
110	75	**761 069 290**	1	0.464	80	150	83
110	90	**761 069 291**	1	0.576	80	165	92

Reducer

- Material: PB

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z (mm)
125	110	**761 065 267**	1	0.729	92	85	215
160	125	**761 065 268**	1	1.263	102	92	245
225	160	**761 065 269**	1	2.800	122	102	280
315	225	**761 065 322**	1	7.933	502	155	158

Bracket clamp

* on request

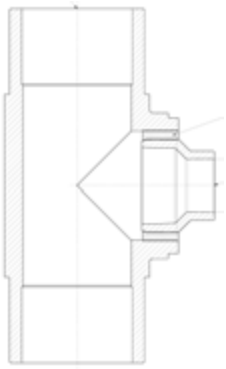
	d (mm)	Code	SP	Weight (kg)
*	16	**761 069 490**	10	0.016
*	20	**761 069 491**	10	0.018
*	25	**761 069 492**	10	0.023
*	32	**761 069 493**	6	0.030
*	40	**761 069 494**	6	0.050
*	50	**761 069 495**	6	0.073
*	63	**761 069 496**	6	0.102
*	75	**761 069 497**	6	0.166
*	90	**761 069 498**	4	0.244
*	110	**761 069 499**	4	0.380

Segment fittings

T-piece - reducer / flange

Prefabricated elbow with short end for electro fusion socket
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

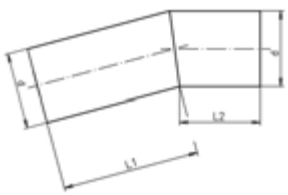
	d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)
*	125	63	125	**761 065 297**	0	0.001	167	366
*	125	75	125	**761 065 302**	0	5.540	173	366
*	125	110	125	**761 065 301**	0	0.001	180	420
*	160	125	160	**761 065 313**	0	5.784	340	420
*	160	75	160	**761 065 299**	0	17.920	208	420
*	160	90	160	**761 065 300**	0	0.001	216	420



T-piece - reducer

Prefabricated elbow with short end for electro fusion socket
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

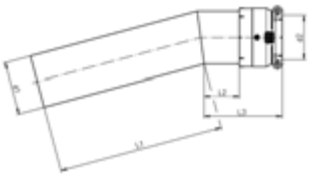
	d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)
*	125	63	125	**761 070 263**	0	0.001	90	336
*	160	63	160	**761 070 264**	0	0.001	120	420



Elbow 15°

Prefabricated elbow with short and long ends for electro fusion fittings
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

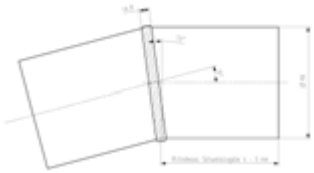
	d (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)
*	63	**761 069 589**	1	0.306	180	65
*	75	**761 069 590**	1	0.576	236	80
*	90	**761 069 591**	1	0.824	265	85
*	110	**761 069 592**	1	1.340	292	100



Elbow 15°

Prefabricated elbow with short end for electro fusion socket
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

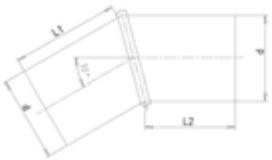
	d-d (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	L3 (mm)
*	75 - 63	**761 069 599**	1	0.306	236	50	111
*	90 - 75	**761 069 600**	1	0.500	265	55	125
*	110 - 90	**761 069 601**	1	0.706	292	60	145



Elbow 15°

Prefabricated elbow with two short ends for electro fusion fittings
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

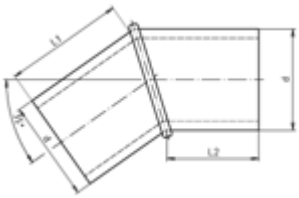
	d (mm)	Code	SP	Weight (kg)	L1 (mm)
*	90	**761 069 662**	1	0.405	95
*	110	**761 065 311**	1	0.647	100
*	125	**761 065 304**	1	0.905	110
*	160	**761 065 305**	1	1.590	115
*	225	**761 065 307**	1	6.348	130



Elbow 30°

Prefabricated elbow with two short ends for electro fusion fittings
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

	d (mm)	Code	SP	Weight (kg)	L1 (mm)
*	90	**760 069 663**	1		95
*	110	**761 065 312**	0	0.641	100
*	125	**761 065 308**	1	0.971	110
*	160	**761 065 309**	1	1.723	115
*	225	**761 065 310**	1	3.988	130

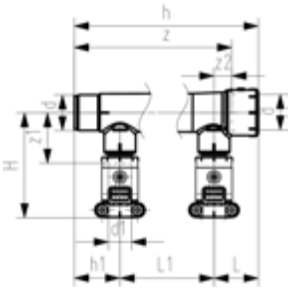


Elbow 35°

Prefabricated elbow with two short ends for electro fusion fittings
GF customized quality, pre-peeled, swiss made
Single packed in plastic bags
* on request

	d (mm)	Code	SP	Weight (kg)	L1 (mm)
*	110	**761 069 665**	1	1.500	100

Manifolds



Polybutene Manifold for electro fusion

Electro fusion connections

	d (mm)	d1 (mm)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	H (mm)	h (mm)	h1 (mm)	z (mm)	z1 (mm)	z2 (mm)
single	25	16	**761 066 250**	1	0.040	31	0	60	63	32	45	36	13
single	25	20	**761 066 251**	1	0.050	39	0	64	78	39	60	35	21
double	25	16	**761 066 252**	1	0.074	31	45	60	108	32	90	36	13
triple	25	16	**761 066 253**	1	0.112	31	45	60	153	32	135	36	13
4 fold	25	16	**761 066 254**	1	0.144	31	45	60	198	32	180	36	13

Flange adapters

Flange adaptor flat with groove and spigots for electro fusion

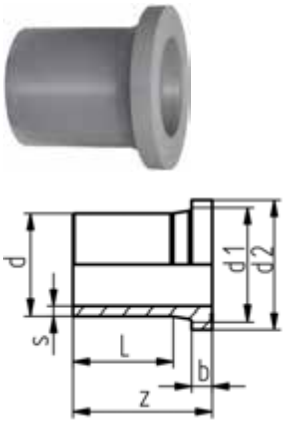
Suitable for flange or union nut
Including EPDM O-Ring, quality suitable for potable water
* on request

	d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	l (mm)	h (mm)
*	16	**761 069 306**	5	0.011	22	29	45	68
*	20	**761 069 307**	1	0.018	27	34	47	70
*	25	**761 069 308**	1	0.023	33	41	50	76
*	32	**761 069 309**	1	0.039	41	50	50	78
*	40	**761 069 310**	1	0.061	50	61	56	88
*	50	**761 069 311**	1	0.096	61	73	58	93
*	63	**761 069 312**	1	0.168	76	90	60	98
*	75	**761 069 313**	1	0.343	90	106	118	158
*	90	**761 069 314**	1	0.515	109	125	125	172
*	110	**761 069 315**	1	0.840	131	150	131	186

Flange adaptor flat with spigot for electro fusion

Suitable for flange or union nut
* on request

	d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	l (mm)	h (mm)
*	20	**761 069 321**	1	0.017	27	34	45	67
*	25	**761 069 322**	1	0.021	33	41	50	73
*	32	**761 069 323**	1	0.034	41	50	50	75
*	40	**761 069 324**	1	0.066	50	61	56	83
*	50	**761 069 325**	1	0.091	61	73	58	88
	63	**761 069 326**	1	0.172	76	90	60	93
	75	**761 069 327**	1	0.311	90	106	118	153
	90	**761 069 328**	1	0.469	109	125	125	167
	110	**761 069 329**	1	0.770	131	150	131	180

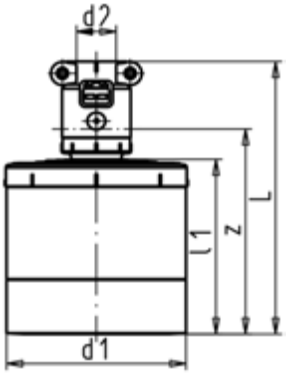


Flange adaptor - flat

- Material: PB

d (mm)	Code	SP	Weight (kg)	d1 (mm)	d2 (mm)	L (mm)	b (mm)	z (mm)
125	**761 065 264**	1	0.864	132	162	123	25	170
160	**761 065 265**	1	1.667	176	218	147	25	200
225	**761 065 266**	1	3.003	236	274	122	32	200
315	**761 065 323**	1	5.227	336	371	170	36	291

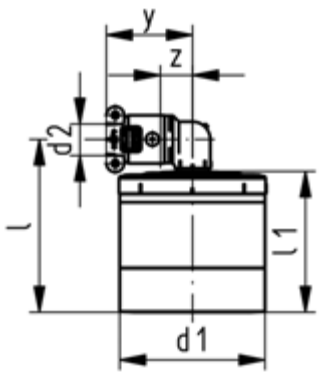
Special reducers



Special reducer with adaptor

* on request

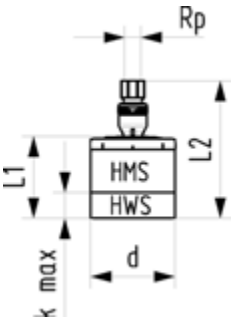
	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	l1 (mm)	z (mm)
*	75	16	**761 069 604**	1	0.212	134	88	97
*	75	20	**761 069 605**	1	0.216	134	88	95
*	75	25	**761 069 606**	1	0.221	137	88	95
*	75	32	**761 069 607**	1	0.237	139	88	97
*	75	40	**761 069 608**	1	0.254	145	88	98
*	75	50	**761 069 609**	1	0.270	148	88	99
*	90	16	**761 069 610**	1	0.254	133	87	96
*	90	20	**761 069 611**	1	0.265	133	87	94
*	90	25	**761 069 612**	1	0.267	136	87	94
*	90	32	**761 069 613**	1	0.277	138	87	96
*	90	40	**761 069 614**	1	0.297	144	87	97
*	90	50	**761 069 615**	1	0.322	147	87	98
*	110	16	**761 069 518**	1	0.405	140	94	103
*	110	20	**761 069 519**	1	0.405	140	94	101
*	110	25	**761 069 520**	1	0.414	143	94	101
*	110	32	**761 069 521**	1	0.433	145	94	103
*	110	40	**761 069 522**	1	0.461	151	94	104
*	110	50	**761 069 523**	1	0.469	154	94	105



Special reducer with transition on elbow

* additional diameter on request

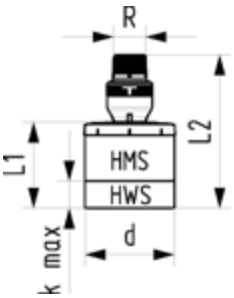
	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	l1 (mm)	z (mm)	y (mm)
*	75	20	**761 069 619**	1	0.228	109	88	14	54
*	75	25	**761 069 524**	1	0.235	111	88	16	58
*	75	32	**761 069 525**	1	0.249	115	88	18	60
*	75	40	**761 069 526**	1	0.300	121	88	22	96
*	75	50	**761 069 527**	1	0.326	127	88	29	78
*	90	20	**761 069 620**	1	0.273	108	87	14	54
	90	25	**761 069 528**	1	0.283	110	87	16	58
*	90	32	**761 069 529**	1	0.300	114	87	18	60
*	90	40	**761 069 530**	1	0.350	120	87	22	69
*	90	50	**761 069 531**	1	0.415	126	87	29	78
*	110	20	**761 069 621**	1	0.423	115	94	14	54
*	110	25	**761 069 532**	1	0.435	117	94	16	58
*	110	32	**761 069 533**	1	0.453	121	94	18	60
*	110	40	**761 069 534**	1	0.500	127	94	22	69
*	110	50	**761 069 535**	1	0.565	183	94	29	78



Special reducer - female thread

Special reducer transition to female thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

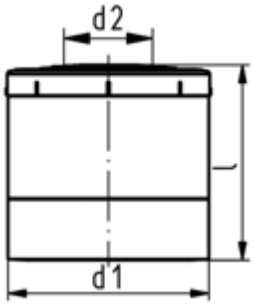
d (mm)	Rp (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	k max. (mm)
75	½	**761 069 749**	1	0.291	88	148	26
75	¾	**761 069 750**	1	0.339	88	149	26
75	1	**761 069 751**	1	0.414	88	154	26
90	½	**761 069 752**	1	0.344	87	147	27
90	¾	**761 069 753**	1	0.392	87	148	27
90	1	**761 069 754**	1	0.467	87	153	27
110	½	**761 069 755**	1	0.486	94	154	28
110	¾	**761 069 756**	1	0.534	94	155	28
110	1	**761 069 757**	1	0.609	94	160	28



Special reducer - male thread

Special reducer transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

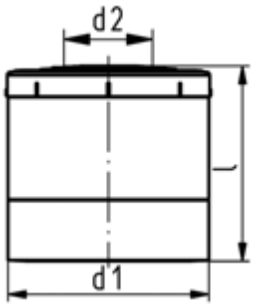
d (mm)	R (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	k max. (mm)
75	½	**761 069 740**	1	0.285	88	147	26
75	¾	**761 069 741**	1	0.316	88	150	26
75	1	**761 069 742**	1	0.393	88	156	26
90	½	**761 069 743**	1	0.338	87	146	27
90	¾	**761 069 744**	1	0.369	87	149	27
90	1	**761 069 745**	1	0.446	87	155	27
110	½	**761 069 746**	1	0.480	94	153	28
110	¾	**761 069 747**	1	0.511	94	156	28
110	1	**761 069 748**	1	0.588	94	156	28



Special reducer

Not predrilled
Not suitable as end cap

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)
75	16 - 50	**761 069 454**	1	0.187	88
90	16 - 50	**761 069 455**	1	0.240	87
110	16 - 50	**761 069 456**	1	0.382	94



Special reducer - predrilled

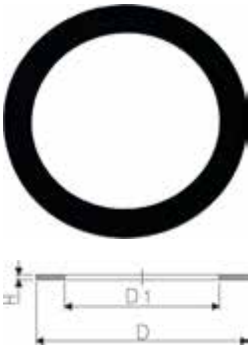
Drilled hole d16 to d50
* on request

	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)
*	75	16	**761 069 500**	1	0.193	88
*	75	20	**761 069 501**	1	0.214	88
*	75	25	**761 069 502**	1	0.200	88
*	75	32	**761 069 503**	1	0.182	88
*	75	40	**761 069 504**	1	0.175	88
*	75	50	**761 069 505**	1	0.161	88
*	90	16	**761 069 506**	1	0.254	87
*	90	20	**761 069 507**	1	0.242	87
*	90	25	**761 069 508**	1	0.240	87
*	90	32	**761 069 509**	1	0.236	87
*	90	40	**761 069 510**	1	0.226	87
*	90	50	**761 069 511**	1	0.213	87
*	110	16	**761 069 512**	1	0.400	94
*	110	20	**761 069 513**	1	0.387	94
*	110	25	**761 069 514**	1	0.373	94
*	110	32	**761 069 515**	1	0.376	94
*	110	40	**761 069 516**	1	0.372	94
*	110	50	**761 069 517**	1	0.357	94

EPDM O-Ring

Quality suitable for potable water

d (mm)	Code	SP	Weight (kg)	d1 (mm)	D (mm)	H (mm)
16	**761 066 558**	0	0.002	19	26	4
20	**761 066 124**	0	0.002	23	31	4
25	**761 066 125**	0	0.001	28	35	4
32	**761 066 126**	0	0.001	36	43	4
40	**761 066 127**	0	0.004	44	55	5
50	**761 066 128**	0	0.001	53	64	5
63	**761 066 129**	0	0.002	69	80	5
75	**761 070 036**	0	0.007	82	93	5
90	**761 070 037**	0	0.008	101	112	5
110	**761 070 038**	0	0.016	120	134	7



Flat gasket

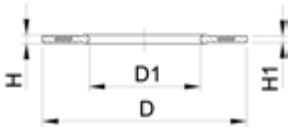
Model:

- Hardness approx. 65° Shore
- For adaptor unions

Size (inch)	D (mm)	D1 (mm)	H (mm)	EPDM Code	SP	Weight (kg)	FKM Code	SP	Weight (kg)
¼	20	13	2	**748 400 004**	1	0.002			
⅜	24	17	2	**748 400 005**	1	0.002	**749 400 005**	1	0.020
½	30	21	3	**748 400 006**	1	0.002	**749 400 006**	1	0.003
¾	38	27	3	**748 400 007**	1	0.003	**749 400 007**	1	0.004
1	44	32	3	**748 400 008**	1	0.002	**749 400 008**	1	0.002
1 ¼	55	42	3	**748 400 009**	1	0.007	**749 400 009**	1	0.003
1 ½	62	46	3	**748 400 010**	1	0.004	**749 400 010**	1	0.007
2	78	60	3	**748 400 011**	1	0.005	**749 400 011**	1	0.006
2 ½	97	75	3	**748 400 012**	1	0.010	**749 400 012**	1	0.009
3	109	88	3	**748 400 013**	1	0.011	**749 400 013**	1	0.011

Back-up ring

d (mm)	di (mm)	L (mm)	SDR	Code	SP	Weight (kg)
125	102.2			**761 065 283**	1	0.300
		225	11	**709 026 106**	0	1.520

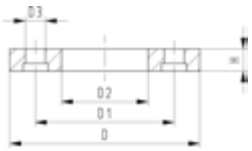


Profile flange gasket metric
For flange adaptors without chamfer

Model:

- For flange adaptor No. 27 79 85 PP-H SDR11 without chamfer
- Profile Gasket with carbon steel insert (type G-ST-P/K)
- Hardness: 70° shore **EPDM**, 75° shore **FKM**

d (mm)	DN (mm)	PN (bar)	EPDM Code	SP	Weight (kg)	FKM Code	SP	Weight (kg)	D (mm)	D1 (mm)	H (mm)	H1 (mm)
20	15	16	**748 440 706**	0	0.009	**749 440 706**	0	0.013	51	20	4	3
25	20	16	**748 440 707**	0	0.015	**749 440 707**	0	0.014	61	22	4	3
32	25	16	**748 440 708**	0	0.013	**749 440 708**	0	0.019	71	28	4	3
40	32	16	**748 440 709**	0	0.019	**749 440 709**	0	0.026	82	40	4	3
50	40	16	**748 440 710**	0	0.029	**749 440 710**	0	0.039	92	46	4	3
63	50	16	**748 440 711**	0	0.041	**749 440 711**	0	0.050	107	58	5	4
75	65	16	**748 440 712**	0	0.053	**749 440 712**	0	0.082	127	69	5	4
90	80	16	**748 440 713**	0	0.064	**749 440 713**	0	0.083	142	84	5	4



Backing flanges PN 16 IPP

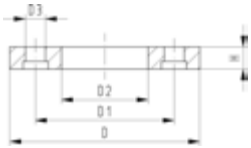
Material: Casting, GFK coated
Suitable for flange adaptor
Tighten the screws with torque as indicated
Commercially available scews, nuts, washers
* on request

	d (mm)	Code	SP	Weight (kg)
*	20	**761 065 270**	2	0.378
*	25	**761 065 271**	2	0.463
	32	**761 065 272**	2	0.412
	40	**761 065 273**	2	0.551
	50	**761 065 274**	2	0.747
	63	**761 065 275**	2	0.842
	75	**761 065 276**	2	1.131
	90	**761 065 277**	2	1.092
	110	**761 065 278**	2	1.465

	d (mm)	D (mm)	D1 (mm)	D2 (mm)	D3 (mm)	H (mm)	Tightening torque (mm)	○	SC
*	20	106	65	28	14	18	10	4	M 12x 70
*	25	118	75	34	14	18	15	4	M 12x 75
	32	122	85	42	14	17	15	4	M 12x 75
	40	142	100	51	18	17	20	4	M 16x 80
	50	156	110	62	18	19	25	4	M 16x 85
	63	171	125	78	18	20	35	4	M 16x 85
	75	191	145	92	18	21	40	4	M 16x 90
	90	206	160	110	18	21	40	8	M 16x 90
	110	226	180	133	18	22	50	8	M 16x 95

Backing flanges

d (mm)	Code	SP	Weight (kg)
125	**761 065 279**	2	1.284
160	**761 065 280**	2	2.406
225	**761 065 281**	2	3.600

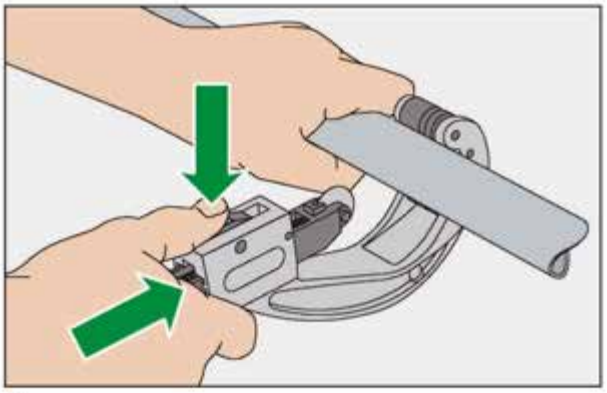


d (mm)	D (mm)	D1 (mm)	D2 (mm)	D3 (mm)	H (mm)	AL	Screws	Tightening torque (mm)
125	226	180	135	18	23	8	M16 x 130	50
160	296	240	178	22	28	8	M20 x 140	60
225	350	295	238	22	31	8	M20 x 160	75

INSTAFLEX

Socket fusion jointing HMS

Socket fusion d16-d110



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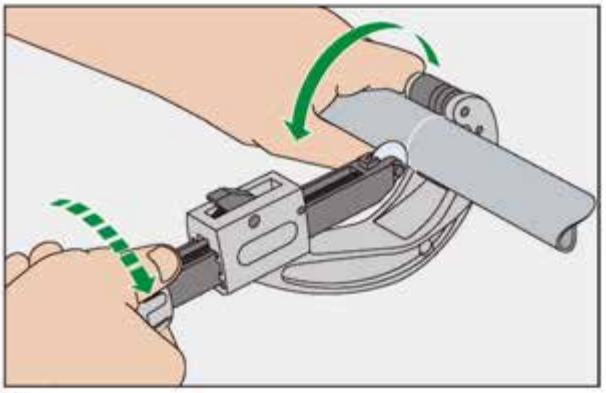

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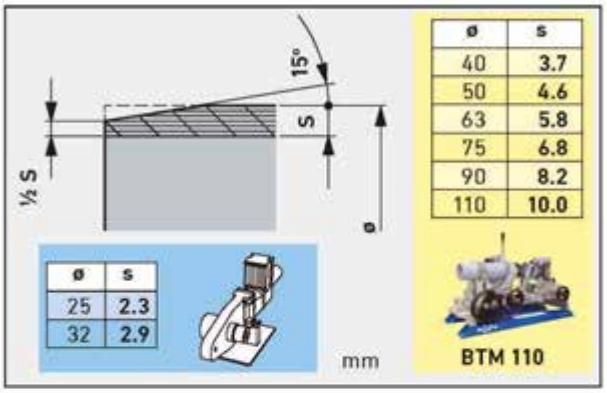

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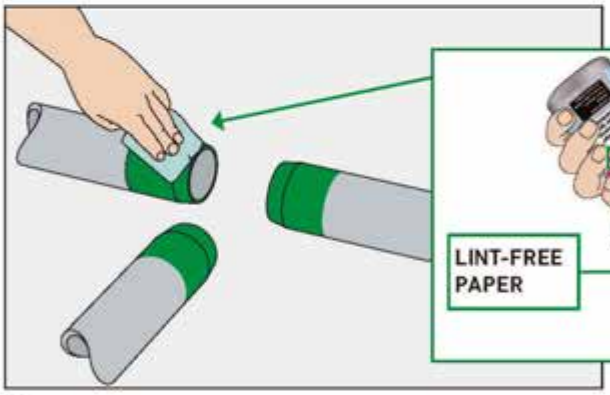

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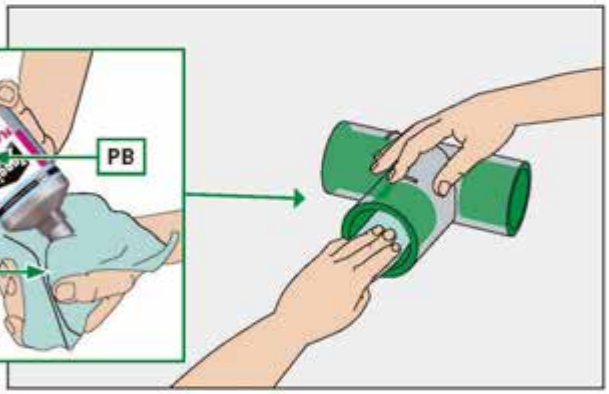

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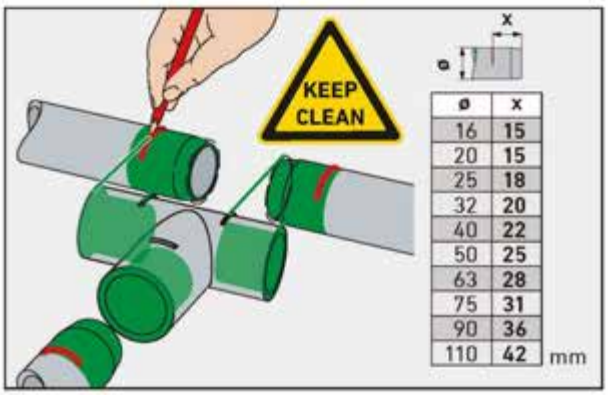

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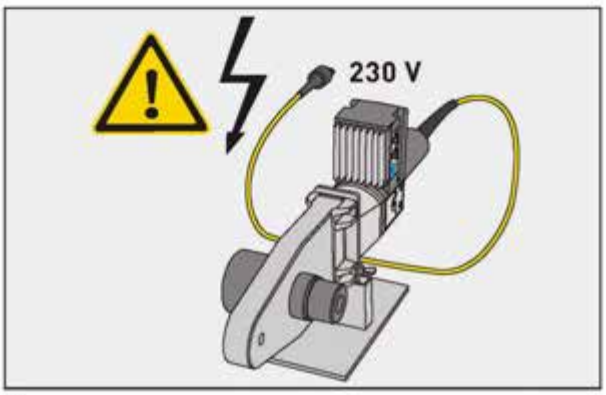

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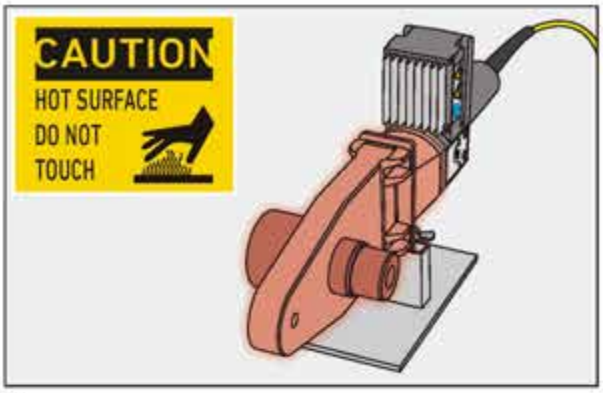

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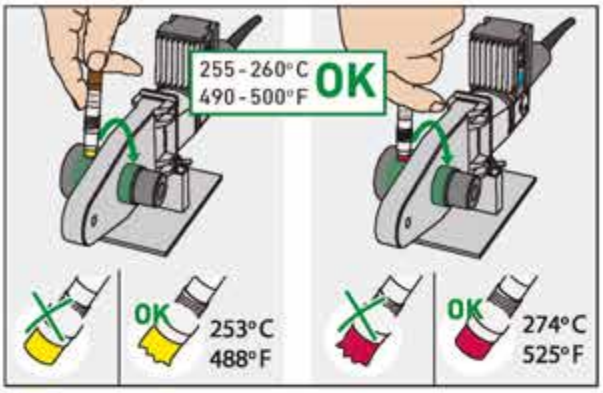

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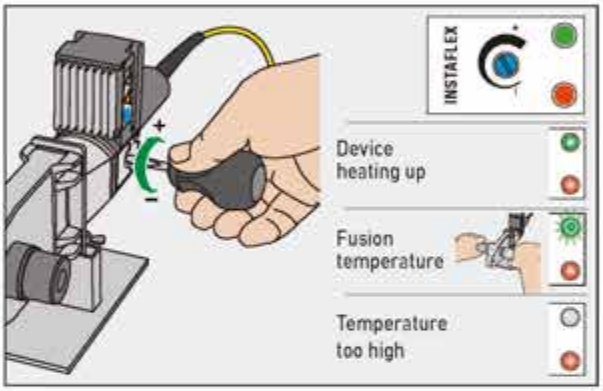

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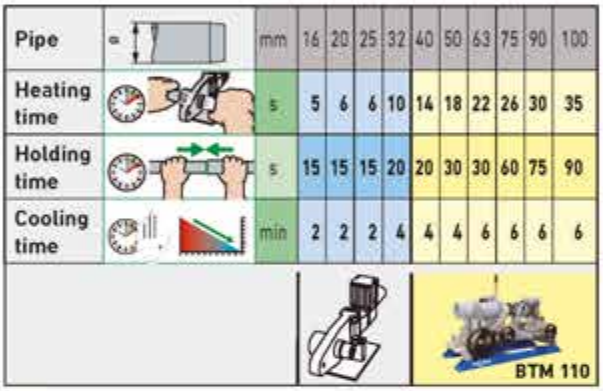

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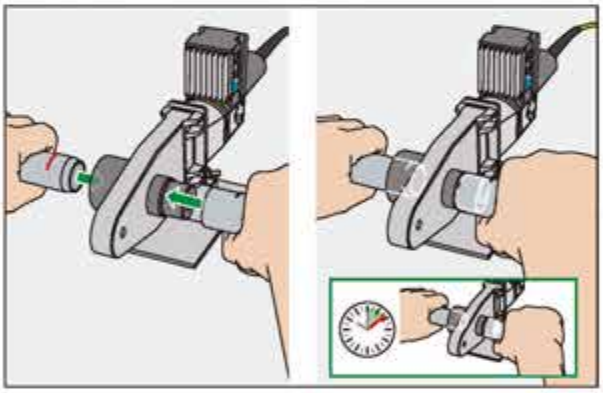

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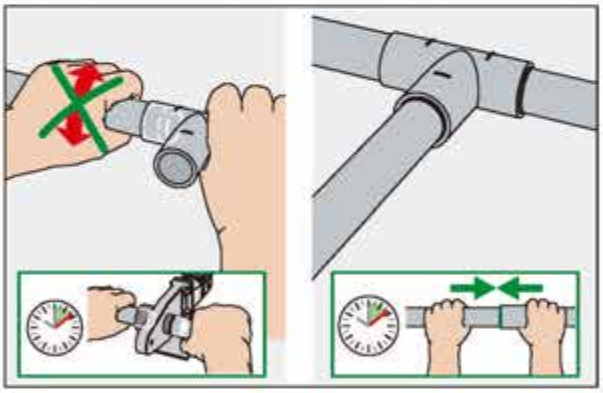

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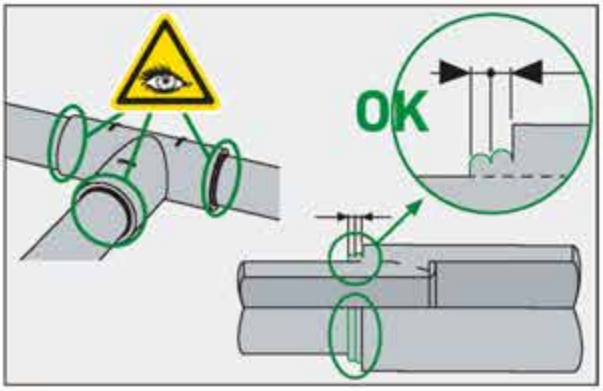

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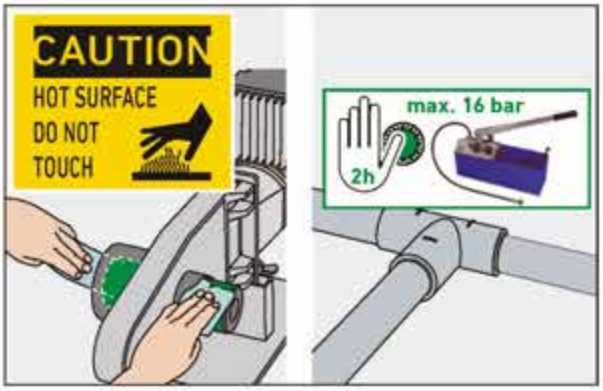

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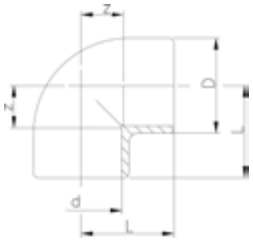
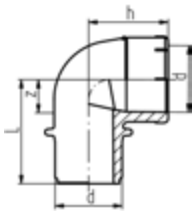


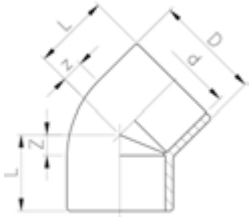
Elbow 90°

d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	z (mm)
16	**761 066 600**	10	0.014	22	25	10
20	**761 066 601**	10	0.015	26	28	13
25	**761 066 602**	10	0.020	32	32	14
32	**761 066 603**	10	0.035	40	38	18
40	**761 066 604**	5	0.080	51	44	22
50	**761 066 605**	5	0.116	64	51	26
63	**761 066 606**	2	0.217	81	62	34
75	**761 066 607**	2	0.303	91	75	44
90	**761 066 608**	2	0.466	108	88	52
110	**761 066 609**	2	0.856	132	105	63



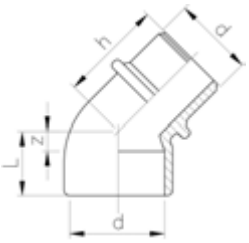
Elbow 90° - socket spigot

d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	h (mm)	z (mm)
16	**761 066 900**	10	0.009	22	34	25	10
20	**761 066 901**	10	0.012	26	36	28	13
25	**761 066 902**	10	0.021	32	44	32	14
32	**761 066 903**	10	0.037	40	50	38	18
40	**761 066 904**	5	0.067	51	58	44	22
50	**761 066 905**	5	0.122	64	70	51	26
63	**761 066 906**	2	0.233	81	82	62	34



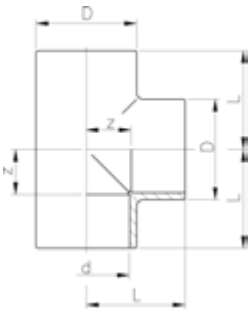
Elbow 45°

d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	z (mm)
16	**761 066 610**	10	0.008	22	21	6
20	**761 066 611**	10	0.016	26	22	7
25	**761 066 612**	10	0.026	32	25	7
32	**761 066 613**	10	0.030	40	30	10
40	**761 066 614**	5	0.064	51	34	12
50	**761 066 615**	5	0.093	64	39	14
63	**761 066 616**	2	0.145	81	45	17
75	**761 066 617**	2	0.223	92	51	20
90	**761 066 618**	2	0.337	109	58	22
110	**761 066 619**	2	0.616	134	68	26



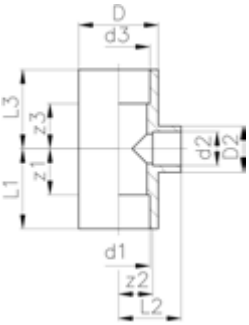
Elbow 45° - socket spigot

d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	h (mm)	z (mm)
16	**761 066 907**	10	0.008	22	21	29	6
20	**761 066 908**	10	0.011	26	22	30	7
25	**761 066 909**	10	0.017	32	25	35	7
32	**761 066 910**	10	0.032	40	30	40	10
40	**761 066 911**	5	0.055	51	34	46	12
50	**761 066 912**	5	0.101	64	39	53	14
63	**761 066 913**	2	0.258	81	45	62	17



T-piece 90° - equal

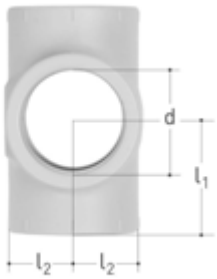
d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	z (mm)
16	**761 066 620**	10	0.017	22	25	10
20	**761 066 621**	10	0.025	26	28	13
25	**761 066 622**	10	0.036	32	32	14
32	**761 066 623**	10	0.045	40	38	18
40	**761 066 624**	5	0.105	51	44	22
50	**761 066 625**	5	0.147	64	51	26
63	**761 066 626**	2	0.315	81	62	34
75	**761 066 627**	2	0.375	91	75	44
90	**761 066 628**	2	0.694	112	88	52
110	**761 066 629**	2	1.120	132	105	63



T-piece 90° - reduced

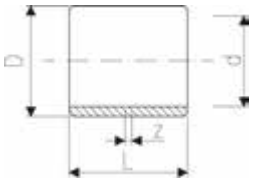
d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	D (mm)	D2 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	z1 (mm)	z2 (mm)	z3 (mm)
20	16	20	**761 066 914**	10	0.015	26	22	28	28	28	13	13	13
20	16	16	**761 066 915**	10	0.016	26	22	28	28	28	13	13	13
20	20	16	**761 066 916**	10	0.017	26	26	28	28	28	13	13	13
25	16	25	**761 066 917**	10	0.025	32	26	32	32	32	14	17	14
25	20	25	**761 066 918**	10	0.025	32	26	32	32	32	14	17	14
25	20	20	**761 066 919**	10	0.026	32	26	32	32	32	14	17	17
25	25	20	**761 066 920**	10	0.027	32	32	32	32	32	14	14	17
32	16	32	**761 066 921**	10	0.041	40	26	38	38	38	18	23	18
32	20	32	**761 066 922**	5	0.040	40	26	38	38	38	18	23	18
32	25	32	**761 066 923**	10	0.036	40	32	38	38	38	18	20	18
40	16	40	**761 066 295**	5	0.083	51	34	44	44	44	22	29	22
40	25	40	**761 066 924**	5	0.077	51	34	44	44	44	22	26	22
40	32	40	**761 068 049**	5	0.076	51	40	44	44	44	22	24	22
50	16	50	**761 066 309**	5	0.135	64	34	51	51	51	26	36	26
50	25	50	**761 066 925**	5	0.131	64	34	51	51	51	26	33	26
50	32	50	**761 068 050**	5	0.133	64	40	51	51	51	26	31	26
63	16	63	**761 066 310**	2	0.257	81	35	62	62	62	34	47	34
63	25	63	**761 066 926**	5	0.252	81	35	62	62	62	34	44	34
63	32	63	**761 068 051**	5	0.255	81	40	62	62	62	34	42	34

Cross, PN 16

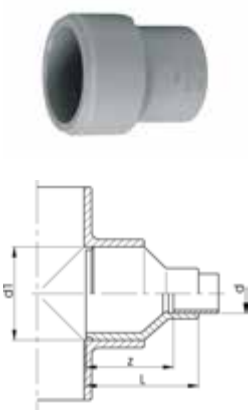


d	Code	SP	Weight (kg)	d (mm)	l (mm)	l1 (mm)	l2 (mm)
40	**761 068 066**	5	0.095	51	88	44	26
50	**761 068 067**	5	0.166	64	102	51	32
63	**761 068 068**	2	0.318	81	124	62	41

Socket



d (mm)	Code	SP	Weight (kg)	D (mm)	L (mm)	z (mm)
16	**761 066 660**	10	0.009	22	33	3
20	**761 066 661**	10	0.014	26	33	3
25	**761 066 662**	10	0.020	32	39	3
32	**761 066 663**	10	0.033	40	43	3
40	**761 066 664**	10	0.048	51	48	4
50	**761 066 665**	10	0.069	64	54	4
63	**761 066 666**	2	0.120	81	60	4
75	**761 066 667**	2	0.153	91	69	7
90	**761 066 668**	2	0.236	110	80	8
110	**761 066 669**	2	0.417	133	94	10

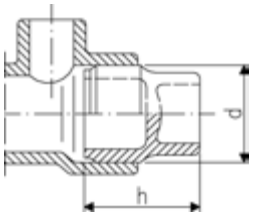


Reducing bush

d1 (mm)	d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
20	16	**761 066 670**	10	0.005	30	15
25	16	**761 066 671**	10	0.010	33	18
25	20	**761 066 672**	10	0.015	33	18
32	20	**761 066 674**	10	0.018	40	25
32	25	**761 066 675**	10	0.022	40	22
40	20	**761 066 677**	10	0.024	42	27
40	25	**761 066 678**	10	0.028	42	24
40	32	**761 066 679**	10	0.034	42	22
50	20	**761 066 681**	10	0.035	55	40
50	25	**761 066 682**	10	0.035	55	37
50	32	**761 066 683**	10	0.042	55	35
50	40	**761 066 684**	10	0.050	55	33
63	20	**761 066 686**	5	0.055	58	43
63	25	**761 066 687**	5	0.060	58	40
63	32	**761 066 688**	50	0.066	58	38
63	40	**761 066 689**	5	0.074	58	36
63	50	**761 066 690**	5	0.079	58	33
75	63	**761 066 742**	2	0.115	67	39
90	63	**761 066 746**	2	0.150	74	46
90	75	**761 066 745**	2	0.160	74	43
110	63	**761 066 747**	2	0.229	86	58
110	75	**761 066 749**	2	0.234	86	55
110	90	**761 066 748**	2	0.270	86	50

End cap

d (mm)	Code	SP	Weight (kg)	L (mm)
16	**761 066 650**	10	0.006	22
20	**761 066 651**	10	0.010	24
25	**761 066 652**	10	0.014	28
32	**761 066 653**	10	0.022	32
40	**761 066 654**	10	0.024	38
50	**761 066 655**	10	0.050	44
63	**761 066 656**	5	0.079	50



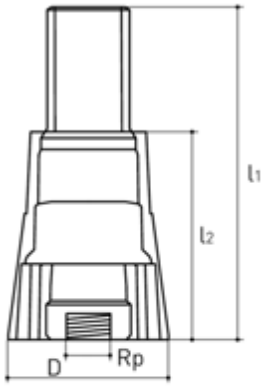
Plug

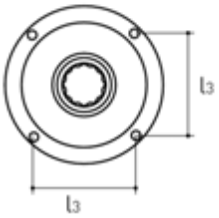
d (mm)	Code	SP	Weight (kg)	h (mm)
25	**761 066 938**	10	0.008	33

Connection box

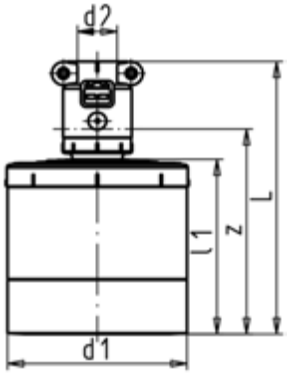
The connection box can be used for embedded sprinkler applications

Rp (inch)	Code	SP	Weight (kg)	d (mm)	l1 (mm)	l2 (mm)	l3 (mm)
½	**761 068 053**	10	0.460	63	131	82	40
1	**761 068 052**	10	0.366	63	131	82	40





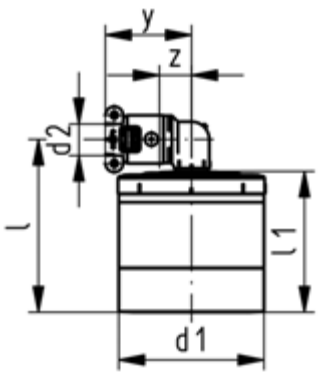
Special reducers



Special reducer with adaptor

* on request

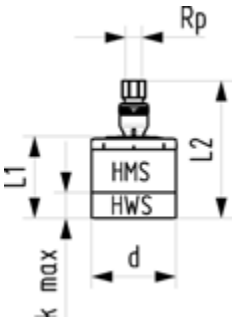
	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	l1 (mm)	z (mm)
*	75	16	**761 069 604**	1	0.212	134	88	97
*	75	20	**761 069 605**	1	0.216	134	88	95
*	75	25	**761 069 606**	1	0.221	137	88	95
*	75	32	**761 069 607**	1	0.237	139	88	97
*	75	40	**761 069 608**	1	0.254	145	88	98
*	75	50	**761 069 609**	1	0.270	148	88	99
*	90	16	**761 069 610**	1	0.254	133	87	96
*	90	20	**761 069 611**	1	0.265	133	87	94
*	90	25	**761 069 612**	1	0.267	136	87	94
*	90	32	**761 069 613**	1	0.277	138	87	96
*	90	40	**761 069 614**	1	0.297	144	87	97
*	90	50	**761 069 615**	1	0.322	147	87	98
*	110	16	**761 069 518**	1	0.405	140	94	103
*	110	20	**761 069 519**	1	0.405	140	94	101
*	110	25	**761 069 520**	1	0.414	143	94	101
*	110	32	**761 069 521**	1	0.433	145	94	103
*	110	40	**761 069 522**	1	0.461	151	94	104
*	110	50	**761 069 523**	1	0.469	154	94	105



Special reducer with transition on elbow

* additional diameter on request

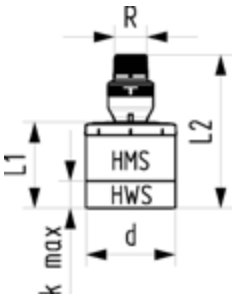
	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)	l1 (mm)	z (mm)	y (mm)
*	75	20	**761 069 619**	1	0.228	109	88	14	54
*	75	25	**761 069 524**	1	0.235	111	88	16	58
*	75	32	**761 069 525**	1	0.249	115	88	18	60
*	75	40	**761 069 526**	1	0.300	121	88	22	96
*	75	50	**761 069 527**	1	0.326	127	88	29	78
*	90	20	**761 069 620**	1	0.273	108	87	14	54
	90	25	**761 069 528**	1	0.283	110	87	16	58
*	90	32	**761 069 529**	1	0.300	114	87	18	60
*	90	40	**761 069 530**	1	0.350	120	87	22	69
*	90	50	**761 069 531**	1	0.415	126	87	29	78
*	110	20	**761 069 621**	1	0.423	115	94	14	54
*	110	25	**761 069 532**	1	0.435	117	94	16	58
*	110	32	**761 069 533**	1	0.453	121	94	18	60
*	110	40	**761 069 534**	1	0.500	127	94	22	69
*	110	50	**761 069 535**	1	0.565	183	94	29	78



Special reducer - female thread

Special reducer transition to female thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

d (mm)	Rp (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	k max. (mm)
75	½	**761 069 749**	1	0.291	88	148	26
75	¾	**761 069 750**	1	0.339	88	149	26
75	1	**761 069 751**	1	0.414	88	154	26
90	½	**761 069 752**	1	0.344	87	147	27
90	¾	**761 069 753**	1	0.392	87	148	27
90	1	**761 069 754**	1	0.467	87	153	27
110	½	**761 069 755**	1	0.486	94	154	28
110	¾	**761 069 756**	1	0.534	94	155	28
110	1	**761 069 757**	1	0.609	94	160	28



Special reducer - male thread

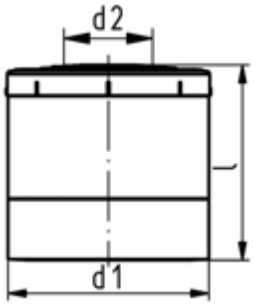
Special reducer transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

d (mm)	R (inch)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	k max. (mm)
75	½	**761 069 740**	1	0.285	88	147	26
75	¾	**761 069 741**	1	0.316	88	150	26
75	1	**761 069 742**	1	0.393	88	156	26
90	½	**761 069 743**	1	0.338	87	146	27
90	¾	**761 069 744**	1	0.369	87	149	27
90	1	**761 069 745**	1	0.446	87	155	27
110	½	**761 069 746**	1	0.480	94	153	28
110	¾	**761 069 747**	1	0.511	94	156	28
110	1	**761 069 748**	1	0.588	94	156	28

Special reducer

Not predrilled
Not suitable as end cap

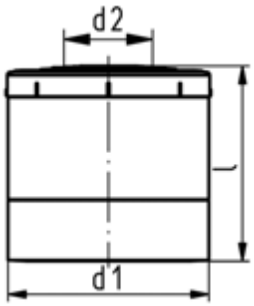
d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)
75	16 - 50	**761 069 454**	1	0.187	88
90	16 - 50	**761 069 455**	1	0.240	87
110	16 - 50	**761 069 456**	1	0.382	94



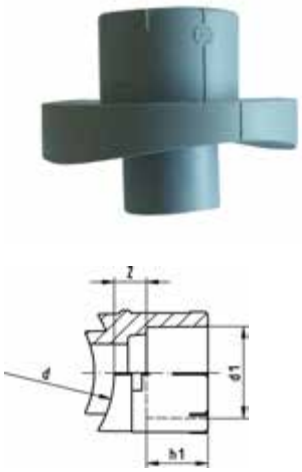
Special reducer - predrilled

Drilled hole d16 to d50
* on request

	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)
*	75	16	**761 069 500**	1	0.193	88
*	75	20	**761 069 501**	1	0.214	88
*	75	25	**761 069 502**	1	0.200	88
*	75	32	**761 069 503**	1	0.182	88
*	75	40	**761 069 504**	1	0.175	88
*	75	50	**761 069 505**	1	0.161	88
*	90	16	**761 069 506**	1	0.254	87
*	90	20	**761 069 507**	1	0.242	87
*	90	25	**761 069 508**	1	0.240	87
*	90	32	**761 069 509**	1	0.236	87
*	90	40	**761 069 510**	1	0.226	87
*	90	50	**761 069 511**	1	0.213	87
*	110	16	**761 069 512**	1	0.400	94
*	110	20	**761 069 513**	1	0.387	94
*	110	25	**761 069 514**	1	0.373	94
*	110	32	**761 069 515**	1	0.376	94
*	110	40	**761 069 516**	1	0.372	94
*	110	50	**761 069 517**	1	0.357	94



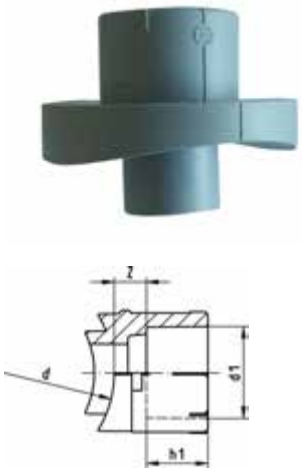
Weld-in saddles



Weld-in saddle

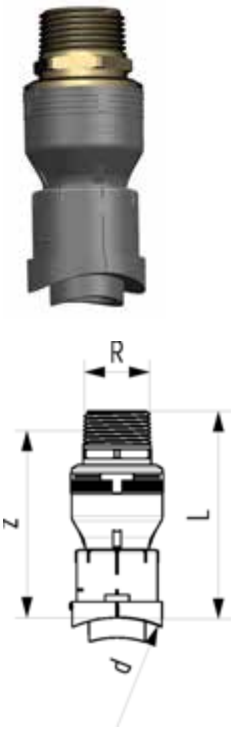
* on request

	d - d1 (mm)	Code	SP	Weight (kg)	h1 (mm)	z (mm)
*	40 - 20	**761 068 000**	5	0.011	15	11
	50 - 20	**761 068 003**	5	0.011	15	11
	50 - 25	**761 068 004**	5	0.014	18	11
	50 - 32	**761 068 005**	5	0.019	20	11
	63 - 20	**761 068 006**	5	0.012	15	11
	63 - 25	**761 068 007**	5	0.016	18	11
	63 - 32	**761 068 008**	5	0.022	20	11
	75 - 20	**761 068 009**	5	0.014	15	12
	75 - 25	**761 068 010**	5	0.017	18	12
	75 - 32	**761 068 011**	5	0.022	20	12
	90 - 20	**761 068 012**	5	0.018	15	13
	90 - 25	**761 068 013**	5	0.021	18	13
	90 - 32	**761 068 014**	5	0.027	20	13
	110 - 20	**761 068 015**	5	0.019	15	14
	110 - 25	**761 068 016**	5	0.022	18	14
	110 - 32	**761 068 017**	5	0.020	20	14



Weld-in saddle

d - d1 (mm)	Code	SP	Weight (kg)	h1 (mm)	z (mm)
125 - 32	**761 068 018**	5	0.035	20	16
125 - 40	**761 068 019**	5	0.056	22	16
125 - 50	**761 068 020**	5	0.072	25	16
160 - 32	**761 068 021**	5	0.045	20	16
160 - 40	**761 068 022**	5	0.061	22	16
160 - 50	**761 068 023**	5	0.077	25	16
225 - 32	**761 068 024**	5	0.076	20	16
225 - 40	**761 068 025**	5	0.076	22	16
225 - 50	**761 068 026**	5	0.092	25	16



Weld-in saddle - male thread

Weld-in saddle transition to male thread
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

d (mm)	R (inch)	Code	SP	Weight (kg)	L (mm)	z (mm)
50	¾	**761 069 758**	2	0.143	100	75
63	1	**761 069 759**	2	0.228	100	83
75	1	**761 069 760**	2	0.228	100	83
90	1	**761 069 761**	2	0.233	103	86
110	1	**761 069 762**	2	0.226	105	88
125	1	**761 069 763**	2	0.241	108	91
160	1	**761 069 764**	2	0.251	108	91
225	1	**761 069 765**	2	0.282	108	91

PB flange adaptor

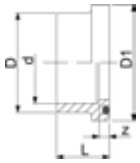
Transition to ball valve 564

d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	L (mm)	z (mm)
20	**761 066 940**	2	0.005	27	33	20	3
25	**761 066 941**	2	0.012	33	44	22	3
32	**761 066 942**	2	0.016	41	53	24	3
40	**761 066 943**	2	0.026	51	65	26	3
50	**761 066 944**	2	0.041	62	77	29	3
63	**761 066 945**	2	0.075	77	99	34	3

Flange adaptor flat

Suitable for flange or union nut

d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	L (mm)	z (mm)
16	**761 066 630**	10	0.005				
20	**761 066 631**	10	0.007	27	34	20	5
25	**761 066 632**	10	0.010	33	41	23	5
32	**761 066 633**	10	0.017	41	50	25	5
40	**761 066 634**	10	0.026	50	61	27	5
50	**761 066 635**	10	0.039	61	73	30	5
63	**761 066 636**	2	0.063	76	90	33	5
75	**761 066 637**	2	0.093	90	106	35	4
90	**761 066 638**	2	0.140	109	125	42	6
110	**761 066 639**	2	0.230	131	150	49	7



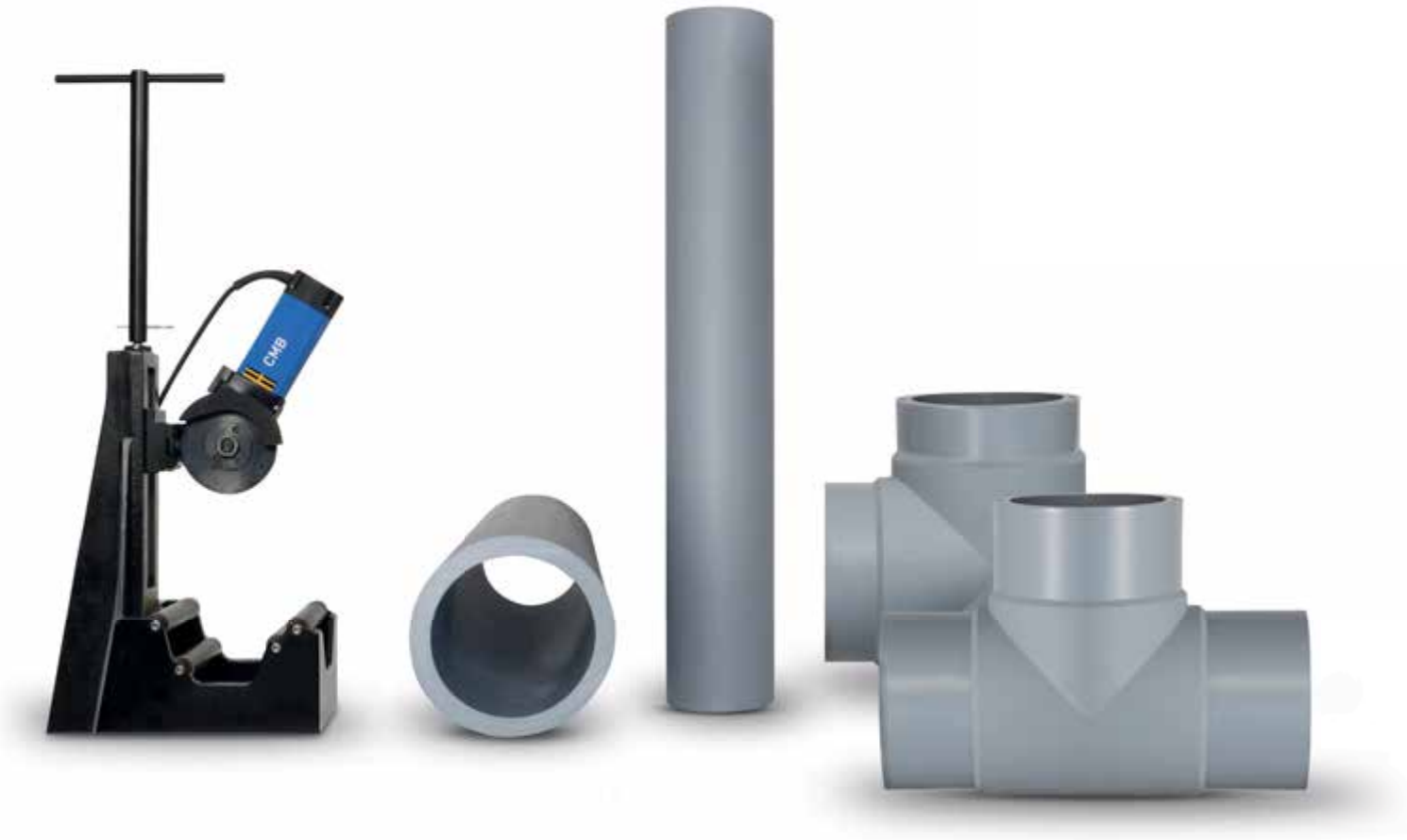
Flange adaptor with groove

Suitable for flange or union nut
Including EPDM O-Ring, quality suitable for potable water

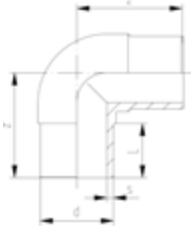
d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	L (mm)	z (mm)
16	**761 066 640**	10	0.006	22	29	23	8
20	**761 066 641**	10	0.008	27	34	23	8
25	**761 066 642**	10	0.012	33	41	26	8
32	**761 066 643**	10	0.021	41	50	28	8
40	**761 066 644**	10	0.034	50	61	32	10
50	**761 066 645**	10	0.049	61	73	35	10
63	**761 066 646**	2	0.077	76	90	38	10
75	**761 066 647**	2	0.111	90	106	40	9
90	**761 066 648**	2	0.179	109	125	47	11
110	**761 066 649**	2	0.292	131	150	55	13

INSTAFLEX

Butt fusion



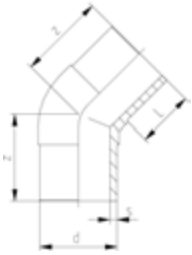
Butt fusion fittings



Elbow 90°

- Material: PB

d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 258**	1	1.615	93	182
160	**761 065 259**	1	3.077	104	213
225	**761 065 260**	1	7.588	122	270
315	**761 065 321**	1	20.990	152	522



Elbow 45°

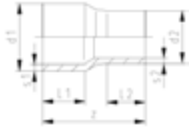
- Material: PB

d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 261**	1	1.246	92	140
160	**761 065 262**	1	2.379	102	162
225	**761 065 263**	1	6.065	122	200
315	**761 065 325**	20	6.065	420	245

Tee 90° - equal

- Material: PB

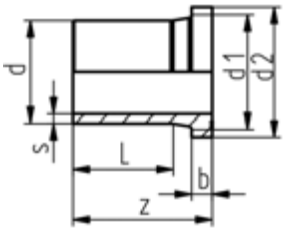
d (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
125	**761 065 255**	1	2.397	93	183
160	**761 065 256**	1	4.312	102	210
225	**761 065 257**	1	11.984	122	270
315	**761 065 320**	1	20.105	569	280



Reducer

- Material: PB

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	z (mm)
125	110	**761 065 267**	1	0.729	92	85	215
160	125	**761 065 268**	1	1.263	102	92	245
225	160	**761 065 269**	1	2.800	122	102	280
315	225	**761 065 322**	1	7.933	502	155	158



Flange adaptor - flat

- Material: PB

d (mm)	Code	SP	Weight (kg)	d1 (mm)	d2 (mm)	L (mm)	b (mm)	z (mm)
125	**761 065 264**	1	0.864	132	162	123	25	170
160	**761 065 265**	1	1.667	176	218	147	25	200
225	**761 065 266**	1	3.003	236	274	122	32	200
315	**761 065 323**	1	5.227	336	371	170	36	291

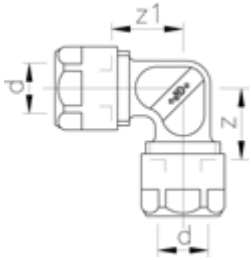
Back-up ring

d (mm)	di (mm)	L (mm)	SDR	Code	SP	Weight (kg)
125	102.2			**761 065 283**	1	0.300
		225	11	**709 026 106**	0	1.520

INSTAFLEX

Compression jointing

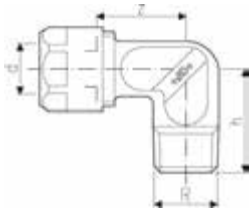
Compression joint fittings



Elbow 90°

Brass: UBA conform

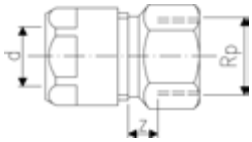
d (mm)	Code	SP	Weight (kg)	z (mm)	z1 (mm)
16	**760 857 047**	5	0.206	22	22
20	**760 857 048**	5	0.280	24	24



Transition elbow 90° - male thread

Brass: UBA conform

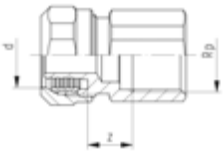
d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)	z (mm)
16	½	**760 857 049**	5	0.171	35	27
20	¾	**760 857 052**	5	0.208	35	29
25	¾	**760 857 053**	2	0.236	44	34
20	½	**760 857 051**	5	0.207	35	29
16	¾	**760 857 050**	2	0.188	35	27



Transition - female thread

Brass: UBA conform

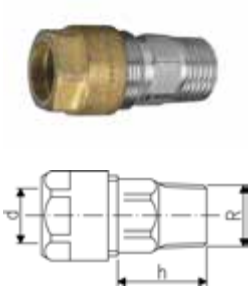
d (mm)	Rp (inch)	Code	SP	Weight (kg)	z (mm)
16	½	**760 857 019**	5	0.078	12
16	¾	**760 857 020**	5	0.144	15
20	½	**760 857 021**	5	0.204	14
20	¾	**760 857 022**	5	0.174	15



Transition - female thread

Brass: UBA conform
* on request

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	z (mm)	Remarks
	25	¾	**760 857 023**	1	0.124	7	
	25	1	**760 857 024**	10	0.202	13	
	32	1	**760 857 025**	10	0.261	7	
	40	1 ¼	**760 857 026**	1	0.364	7	
	50	1 ½	**760 857 027**	1	0.506	7	
	63	2	**760 857 028**	1	1.896	9	
	75	2 ½	**760 857 029**	1	1.907	10	without approval
*	90	3	**760 857 030**	1	0.800	9	without approval
*	110	4	**760 857 031**	1	5.800	38	without approval



Transition - male thread

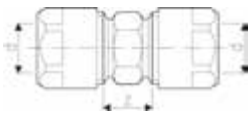
Brass: UBA conform

d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)
16	½	**760 857 032**	5	0.111	30
16	¾	**760 857 033**	5	0.156	34
20	½	**760 857 034**	5	0.148	38
20	¾	**760 857 035**	5	0.230	36

Transition - male thread

Brass: UBA conform
* on request

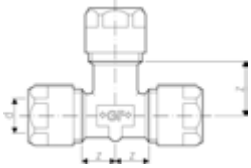
	d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)	Remarks
	25	¾	**760 857 036**	1	0.144	35	
	25	1	**760 857 037**	10	0.177	41	
	32	1	**760 857 038**	1	0.293	42	
	40	1 ¼	**760 857 039**	1	0.409	44	
	50	1 ½	**760 857 040**	1	0.576	47	
	63	2	**760 857 041**	1	1.736	32	
	75	2 ½	**760 857 042**	1	2.093	37	without approval
*	90	3	**760 857 043**	1	2.806	32	without approval
*	110	4	**760 857 044**	1	3.429	38	without approval



Socket

Brass: UBA conform

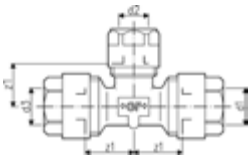
d (mm)	Code	SP	Weight (kg)	z (mm)
16	**760 857 045**	2	0.156	26
20	**760 857 046**	2	0.300	28



T-piece 90° - equal

Brass: UBA conform

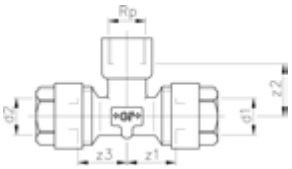
d (mm)	Code	SP	Weight (kg)	z (mm)
16	**760 857 054**	2	0.275	22
20	**760 857 055**	2	0.416	24



T-piece 90° - reduced

Brass: UBA conform

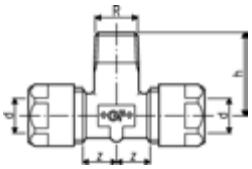
d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	z1 (mm)	z2 (mm)	z3 (mm)
20	16	20	**760 857 056**	2	0.380	24	23	23
20	16	16	**760 857 057**	2	0.342	24	23	23
20	20	16	**760 857 058**	2	0.375	24	24	23



Transition T-piece - female thread

Brass: UBA conform

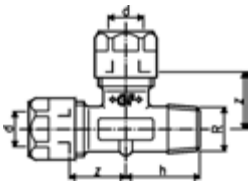
d (mm)	Rp (inch)	Code	SP	Weight (kg)	z1 (mm)	z2 (mm)	z3 (mm)
20	½	**760 857 059**	5	0.340	24	22	24



Transition T-piece - male thread

Not UBA conform
* as long as stock last

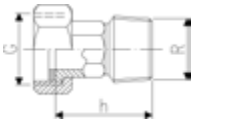
	d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)	z (mm)
*	16	½	**760 854 711**	2	0.225	38	19



Transition T-piece - male thread

* as long as stock last

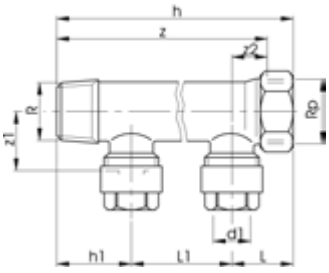
	d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)	z (mm)
*	16	½	**760 869 987**	2	0.209	30	22



Transition union flat seal - male thread

Including gasket, tesnit blue free of asbestos, according to DIN 3754

G (inch)	R (inch)	Code	SP	Weight (kg)	h (mm)
¾	¾	**760 854 716**	2	0.109	37

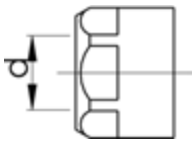


Manifold 90° - 3/4" (DN 20)

DZR brass suitable for portable water

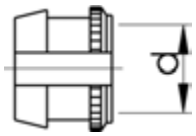
	d (mm)	R (inch)	Rp (inch)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	h (mm)	h1 (mm)	z (mm)	z1 (mm)	z2 (mm)
1-fold	16	¾	¾	**760 853 189**	5	0.220	28	0	59	31	45	24	14
1-fold	20	¾	¾	**760 853 190**	5	0.283	33	0	69	36	55	26	19
2-fold	16	¾	¾	**760 853 180**	5	0.391	28	45	104	31	90	24	14
3-fold	16	¾	¾	**760 853 181**	5	0.561	28	45	149	31	135	24	14
4-fold	16	¾	¾	**760 853 182**	5	0.470	28	45	194	31	180	24	14

Accessories for compression joint fittings



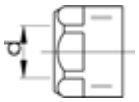
Union nut

d (mm)	Code	SP	Weight (kg)
16	**760 853 018**	5	0.034
20	**760 853 071**	2	0.047



Clamping ring

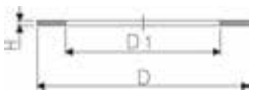
d (mm)	Code	SP	Weight (kg)
16	**760 853 019**	5	0.011
20	**760 853 072**	2	0.016



Cap

Including seal

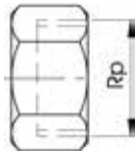
d (mm)	Code	SP	Weight (kg)
16	**760 857 072**	5	0.051
20	**760 857 073**	5	0.094



Seal for cap

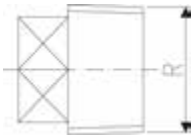
Material: Tesnit UNI blue, free of asbestos according to DIN 3754

d-d (mm)	Code	SP	Weight (kg)	D (mm)	D1 (mm)	H (mm)
16 - 20	**760 853 021**	5	0.002	15	6	3



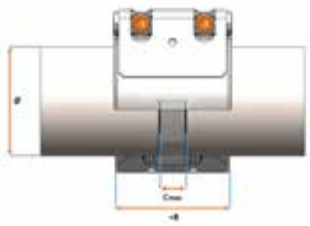
End cap

Rp (inch)	Code	SP	Weight (kg)
¾	**760 857 074**	5	0.089
1	**760 857 075**	5	0.135



Plug

R (inch)	Code	SP	Weight (kg)
¾	**760 857 076**	5	0.058
1	**768 291 006**	10	0.115



UNI-Flex L PN16

Model:

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

Temperature/Pressure:

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

Option:

- Sealing type Viton on request

Remark:

- **For safe installation on pipes insert stiffeners are mandatory**

OD nominal (mm) (mm)	EPDM Code	SP	Weight (kg)	NBR Code	SP
21.3 - 21.6	**779 812 001**	0	0.2	**779 809 001**	0
26.9 - 28.0	**779 812 002**	0	0.2	**779 809 002**	0
30.0	**779 812 003**	0	0.2	**779 809 003**	0
33.7 - 35.0	**779 812 004**	0	0.2	**779 809 004**	0
38.0	**779 812 005**	0	0.4	**779 809 005**	0
42.4	**779 812 006**	0	0.4	**779 809 006**	0
44.5	**779 812 007**	0	0.4	**779 809 007**	0
48.3	**779 812 008**	0	0.4	**779 809 008**	0
54.0 - 57.0	**779 812 009**	0	0.6	**779 809 009**	0
60.3 - 63.0	**779 812 010**	0	0.6	**779 809 010**	0
66.6 - 70.0	**779 812 011**	0	1.0	**779 809 011**	0
73.0 - 79.5	**779 812 012**	0	1.0	**779 809 012**	0
84.0	**779 812 013**	0	1.0	**779 809 013**	0
88.9	**779 812 014**	0	1.0	**779 809 014**	0
98.0 - 104.0	**779 812 015**	0	1.1	**779 809 015**	0
104.8 - 110.0	**779 812 016**	0	1.1	**779 809 016**	0
114.3 - 118.0	**779 812 017**	0	1.2	**779 809 017**	0
125.0 - 129.0	**779 812 018**	0	1.2	**779 809 018**	0
130.2 - 133.0	**779 812 019**	0	2.1	**779 809 019**	0
139.7 - 141.6	**779 812 020**	0	2.2	**779 809 020**	0
154.0 - 155.0	**779 812 021**	0	2.3	**779 809 021**	0
159.0	**779 812 022**	0	2.3	**779 809 022**	0
165.0 - 168.3	**779 812 023**	0	2.4	**779 809 023**	0

OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
21.3 - 21.6	M6	16	25	10	21.0	24.0	46	45	76	3.0
26.9 - 28.0	M6	16	25	10	26.0	29.0	46	45	76	3.0
30.0	M6	16	25	10	29.0	32.0	54	45	84	3.0
33.7 - 35.0	M6	16	25	10	33.0	36.0	54	45	84	3.0
38.0	M8	16	25	15	36.0	39.0	66	60	104	5.0
42.4	M8	16	25	15	39.0	43.0	66	60	104	5.0
44.5	M8	16	25	15	43.0	47.5	74	60	112	5.0
48.3	M8	16	25	15	47.5	52.5	74	60	112	5.0
54.0 - 57.0	M8	16	25	25	52.5	58.0	85	75	125	5.0

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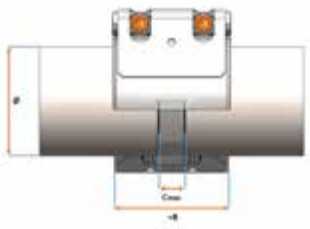


OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
60.3 - 63.0	M8	16	25	25	58.0	64.0	85	75	125	5.0
66.6 - 70.0	M10	16	25	30	64.0	72.0	108	95	164	10.0
73.0 - 79.5	M10	16	25	30	72.0	80.0	108	95	164	10.0
84.0	M10	16	25	30	80.0	88.0	124	95	170	10.0
88.9	M10	16	25	30	88.0	96.0	124	95	170	10.0
98.0 - 104.0	M10	16	25	30	97.0	105.0	141	95	187	10.0
104.8 - 110.0	M10	16	25	30	104.0	112.0	141	95	187	10.0
114.3 - 118.0	M10	16	25	30	112.0	120.0	158	95	202	12.5
125.0 - 129.0	M10	16	25	30	122.0	130.0	158	95	202	12.5
130.2 - 133.0	M12	16	25	40	129.0	137.0	178	110	230	20.0
139.7 - 141.6	M12	16	25	40	137.0	145.0	186	110	238	25.0
154.0 - 155.0	M12	16	25	40	149.0	157.0	197	110	249	30.0
159.0	M12	16	25	40	157.0	165.0	205	110	255	30.0
165.0 - 168.3	M12	16	25	40	164.0	172.0	212	110	262	30.0

UNI-Flex S PN16

Model:

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

Temperature/Pressure:

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

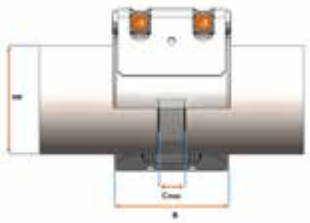
Option:

- Sealing type Viton on request

Remark:

- **For safe installation on pipes insert stiffeners are mandatory**

OD nominal (mm) (mm)	EPDM Code	SP	Weight (kg)	NBR Code	SP
211.0 - 222.0	**779 864 026**	0	5.3	**779 862 026**	0
224.0 - 234.0	**779 864 027**	0	5.5	**779 862 027**	0
315.0 - 327.0	**779 864 034**	0	8.2	**779 862 034**	0



OD nominal (mm) (mm)	M	PN (bar)	WP (bar)	C max. (mm)	OD min (mm)	OD max. (mm)	d (mm)	B (mm)	H (mm)	Torque (N/m)
211.0 - 222.0	M12	16	25	40	213	223	261	140	287	30
224.0 - 234.0	M12	16	25	40	224	234	272	140	298	30
315.0 - 327.0	M16	16	25	40	318	328	366	142	392	30

Insert stiffener Economy for UNI-Coupling - VG-D

Model:

- Suitable for PE, PP and PB pipes
- Stainless steel A2 quality (AISI 304)
- For pipe sizes > d355 use an insert stiffener with wedge
- Other dimensions available on request

d x e (mm)	SDR	Code	SP	Weight (kg)	L (mm)
40 x 3,7	11.0	**709 026 391**	0	0.200	100
40 x 2,3	17.6 / 17.0	**709 026 392**	0	0.200	100
50 x 4,6	11.0	**709 026 203**	0	0.095	100
50 x 2,9	17.6 / 17.0	**709 026 206**	0	0.102	100
63 x 5,8	11.0	**709 026 211**	0	0.121	100
63 x 3,6	17.6 / 17.0	**709 026 214**	0	0.132	100
75 x 6,8	11.0	**709 026 220**	0	0.152	100
75 x 4,3	17.6 / 17.0	**709 026 223**	0	0.158	100
90 x 8,2	11.0	**709 026 230**	0	0.210	120
90 x 5,2	17.6 / 17.0	**709 026 233**	0	0.227	120
110 x 10,0	11.0	**709 026 242**	0	0.257	120
110 x 6,3	17.6 / 17.0	**709 026 245**	0	0.279	120
125 x 11,4	11.0	**709 026 254**	0	0.293	120
125 x 7,2	17.6 / 17.0	**709 026 257**	0	0.317	120
140 x 12,7	11.0	**709 026 266**	0	0.383	140
140 x 8,0	17.6 / 17.0	**709 026 269**	0	0.416	140
160 x 14,6	11.0	**709 026 278**	0	0.655	140
160 x 9,1	17.6 / 17.0	**709 026 281**	0	0.711	140
180 x 16,4	11.0	**709 026 290**	0	0.739	140
180 x 10,7	17.0	**709 026 408**	0	0.801	140
180 x 10,3	17.6	**709 026 293**	0	0.804	140
200 x 18,2	11.0	**709 026 302**	0	0.940	160
200 x 11,9	17.0	**709 026 409**	0	1.018	160
200 x 11,4	17.6	**709 026 305**	0	1.024	160
225 x 20,5	11.0	**709 026 314**	0	1.060	160
225 x 13,4	17.0	**709 026 410**	0	1.146	160
225 x 12,8	17.6	**709 026 317**	0	1.155	160
250 x 22,8	11.0	**709 026 326**	0	1.567	160
250 x 14,8	17.0	**709 026 411**	0	1.697	160
250 x 14,3	17.6	**709 026 329**	0	1.705	160
280 x 25,5	11.0	**709 026 338**	0	1.760	160
280 x 16,6	17.0	**709 026 340**	0	1.904	160
280 x 16,0	17.6	**709 026 341**	0	1.914	160
315 x 28,7	11.0	**709 026 350**	0	1.979	160
315 x 18,7	17.0	**709 026 413**	0	2.144	160
315 x 17,9	17.6	**709 026 353**	0	2.157	160
355 x 32,3	11.0	**709 026 362**	0	2.324	160
355 x 21,1	17.0	**709 026 414**	0	2.416	160
355 x 20,2	17.6	**709 026 365**	0	2.431	160

INSTAFLEX

Machines and tools

Electro fusion control unit-Type HWSG-3

Technical data: Voltage 230V, Power max 1400W, Frequency 50/60Hz, Protection class IP 54, Main connection (3m) with EU-Standard plug
* only for CH / swiss plug

	d-d (mm)	Code	SP	Weight (kg)	Dimensions (mm)	Size (inch)
	16 - 110	**761 069 021**	1	4.142	294	324
*	16 - 110	**761 069 020**	1	4.047	294	324

Electro fusion control unit-Type HWSG-3 - 110V

Including welding cable for fittings without tool case, primary cable 110V, primary cable 230V
Primary cable (3m) with Euro standard plug EU-Standard plug
Technical data: voltage 110V and 230V variable, power output max. 1500W
Technical specifications: frequency 47/65Hz, protection rate IP54, incl. power-supply cable 110V and 230V (3m) with EU-Standard plug
* on request

	d-d (mm)	Code	SP	Weight (kg)	Dimensions (mm)	Size (inch)
*	16 - 110	**761 069 015**	1	11.500	294	324

Primary cable 110V

* on request

	Code	SP	Weight (kg)	Length (m)
*	**761 069 012**	1	0.400	3

Primary cable 230V

* on request

	Code	SP	Weight (kg)	Length (m)
*	**761 069 013**	1	0.380	3

Welding cable angle PUR - HWSG-3 - 110V

Matches to HWSG-3 - 110V
* on request

	d (mm)	Code	SP	Weight (kg)	Length (m)
*	16 - 110	**761 069 016**	1	0.264	3

Welding cable angle - HWSG-3 - 230V

Matches to HWSG-3 - 230V

d (mm)	Code	SP	Weight (kg)	Length (m)
16 - 110	**761 069 006**	1	0.246	3

Welding cable straight - HWSG-3 - 230V

Matches to HWSG-3 - 230V

d (mm)	Code	SP	Weight (kg)	Length (m)
16 - 110	**761 069 001**	1	0.255	3

Welding cable triple 8 m - HWSG-3 - 230V

Matches to HWSG-3 - 230V
2 pcs. with cable straight
1 pc. with cable angle
* on request

	Code	SP	Weight (kg)	Length (m)
*	**761 069 008**	1	1.753	8

MSA 2 MULTI Automatic Electrofusion Unit for PE/PP/PVDF/PB

The MSA 2 MULTI automatic electro fusion unit combines light weight and high efficiency, thanks to its inverter technology. The unit is suitable for welding PE, PP, INSTAFLEX PB d125-225, Fuseal d1 1/2"-12" and PPro-Seal 1/2"-3".
It is robust, safe and ergonomic.
All is meant to simplify the job: the barcode scanner, for long distance reading, the cooling system to joint in series, the icon system, to keep the interaction between user and machine intuitive.
The entire welding process is controlled and regulated with energy output compensation depending on ambient temperature and the indication of cooling time.
The unit has 500 protocols permanently stored in the internal memory. The user can copy the fusion reports in an USB stick to print them out in PDF format.
Scope of delivery includes: 1 pair of angle adapter clips 4.0 mm, operating instructions, START/STOP badge, USB memory stick and robust transport case

Technical Data:

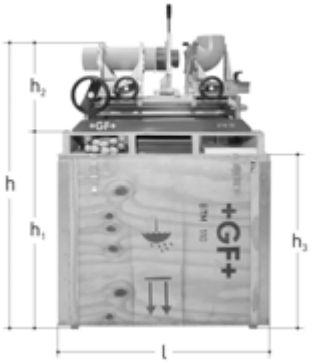
- Operating temperature: -20°C to +50°C
- Fusion data input mode: bar code, manual
- Mains voltage: 230V (190V - 265V)
- Mains frequency: 50-60 Hz
- Fittings range: d16-630 mm , 1/2"-12"
- Fusion voltage: 3.6-40 V
- Fusion current: 90 A (max)
- Suggested power generators: 3.5 kVA
- USB Port: Type A
- Protection factor: Class 1 / IP 65
- Mains cable: 4 m
- Fusion cable: 3 m
- Weight: ca. 11.9 kg
- Display: Graphical LCD, adjustable contrast

Type	Code	SP	Weight (kg)
Full package plus mini Welding Book, SeaDrain adapters and barcodes	**790 156 022**	1	20.000

Socket fusion machine BTM 110

Packed in a wooden case, usable as working table, prism clamp device for pipes, round clamping units for fittings d16-d110, pipe support adjustable. Without heating element. Requires heating element catalogue number 761 066 895

l (mm)	h (mm)	Code	SP	Weight (kg)	h1 (mm)	h2 (mm)	h3 (mm)
867	1191	**761 066 894**	0	95.000	787	404	728



Accessories for socket fusion machine BTM 110

Toolbox (included in delivery code 761 066 895) heating element with electronic temperature regulation, voltage 230V, power 800W, heating bushes d16-d110, tempil sticks 253°C and 274°C, timer, gtemplate, gloves, support, grip, pipe shears, pipe cutter d32-d110, chamfering tool

Code	SP	Weight (kg)
761 066 895	1	10.000

Heating element 230V

Scope of delivery: elctronic temperature regulation, Voltage 230V, Power 800W, Instruction for the socket fusion jointing
* only for CH / swiss plug

	d-d (mm)	Code	SP	Weight (kg)
	16 - 63	**761 066 804**	1	1.639
*	16 - 63	**761 066 751**	1	1.646

Heating element 30° - 230V

Special for weld-in-saddle
With Schuko-Plug CEE
* on request

	D (mm)	Code	SP	Weight (kg)
*	16 - 50	**761 066 877**	1	1.550

Support

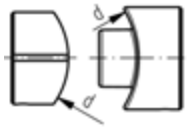
As a storage possibility for Handheld heating element

Code	SP	Weight (kg)
761 066 801	1	0.986

Heating bushes

Heating bushes for the entire INSTAFLEX socket fusion range (in conjunction with the BTM 110 fusion machine)

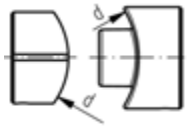
d (mm)	Code	SP	Weight (kg)
16	**761 066 756**	1	0.189
20	**761 066 757**	1	0.284
25	**761 066 758**	1	0.366
32	**761 066 759**	1	0.369
40	**761 066 760**	1	0.321
50	**761 066 761**	1	0.460
63	**761 066 762**	1	0.609
75	**761 066 881**	1	1.108
90	**761 066 882**	1	1.740
110	**761 066 883**	1	2.450



Heating bushes for weld-in saddle PB

d = Pipe dim.

d (mm)	Code	SP	Weight (kg)	Remarks
40	**761 068 027**	1	0.129	Drill bitt d20-d32
50	**761 068 028**	1	0.156	Drill bitt d20-d32
63	**761 068 029**	1	0.199	Drill bitt d20-d32
75	**761 068 030**	1	0.216	Drill bitt d20-d32
90	**761 068 031**	1	0.272	Drill bitt d20-d32
110	**761 068 032**	1	0.298	Drill bitt d20-d32



Heating bushes for weld-in saddle PB

For heating element straight
d = Pipe dim.

d (mm)	Code	SP	Weight (kg)	Remarks
125	**761 068 033**	1	0.376	Drill bitt d20-d32
125	**761 068 034**	1	0.510	Drill bitt d40-d50
160	**761 068 035**	1	0.568	Drill bitt d20-d32
160	**761 068 036**	1	0.658	Drill bitt d40-d50
225	**761 068 037**	1	1.013	Drill bitt d20-d32
225	**761 068 038**	1	1.019	Drill bitt d40-d50

Drill bit for weld-in saddle

d (mm)	Code	SP	Weight (kg)
20 - 32	**761 068 039**	1	0.132
40 - 50	**761 068 040**	1	0.232

Fuseal-Template - electro fusion jointing

Dimension (mm)	Code	SP	Weight (kg)
1 1/2"- 6"	**761 069 622**	1	0.010

Heating element - complete 230V

Scope of delivery: Metal case, Heating element with electronic temperature regulation Voltage 230V, Power 800W, Heating bushes d16-d63, Tempil sticks 253°C and 274°C, Timer, Template, Gloves, Support, Grip, Pipe shears, Pipe cutter d32-d63, Chamfering tool
* only for CH / swiss plug

	d-d (mm)	Code	SP	Weight (kg)
	16 - 63	**761 066 802**	1	11.679
*	16 - 63	**761 066 750**	1	11.735

Pipe cutting machine CMB 225

State-of-the art cutting machine for polyolefin pipes in diameter d110-d230.
Scope of delivery: Cutting machine CMB 225 (1 pcs.), Machines cutter CW 225 (3 pcs.), Pipe brackets PS 225 (4 pcs.), Wrench for cutter-change (1 pcs.)

Voltage	Code	SP	Weight (kg)
110V	**761 070 322**	0	38.000
220V	**761 070 319**	0	38.000

Cutting insert for CMB 225

d (mm)	Code	SP	Weight (kg)
50 - 110	**761 070 323**	0	2.000

Replacement cutting wheels

For plastic pipe cutter

d-d (mm)	Article	Code	SP	Weight (kg)
10 - 63	SR 63 max. s=7,2 mm	**790 109 011**	1	0.004
50 - 110	SR 110/160 max. s=12,7 mm	**790 109 012**	1	0.015
110 - 160	SR 160 max. s=19,0 mm	**790 109 013**	1	0.023

Machines cutter CW 225

Replacement cutting wheel for cutting machine CMB 225

Cutting depth (mm)	Code	SP	Weight (kg)
26	**761 070 320**	1	0.240

Pipe shears

d-d (mm)	Code	SP	Weight (kg)
16 - 25	**760 853 279**	1	0.295

Multi-purpose cutter

- Material: steel, plastic

d-d-d (mm)	GF Code	SP	Weight (kg)	b (mm)	l (mm)
12 - 16 - 20	**355 632 424**	1	0.150	45	200

PPC Plastic pipe cutter

For cutting plastic pipes d10 - d160

d-d (mm)	Article	Code	SP	Weight (kg)
10 - 63	PPC 63, s max. = 7.2mm	**790 109 001**	1	0.865
50 - 110	PPC 110, s max. = 12.7mm	**790 109 002**	1	1.624
110 - 160	PPC 160, s max. = 19.0mm	**790 109 003**	1	2.212

Pipe support

Pipe support for cutting machine CMB 225

d (mm)	Code	SP	Weight (kg)	Type
110 - 225	**761 070 321**	1	1.500	PS 225
50 - 110	**761 070 324**	0	1.400	PS 110

Chamfering tool

d-d (mm)	Code	SP	Weight (kg)
25 - 110	**761 066 836**	1	0.830

Spare blades for Chamfering tool

d-d (mm)	Code	SP	Weight (kg)
25 - 110	**761 066 795**	1	0.016

Rotary Peeler RS

Note:
This innovative Rotary Peeler RS is designed to use for universal peeling at the pipe end, for electrofusion couplings, tees and elbows and as well as for electrofusion saddles.Suitable for peeling of pipes made out of PE 80, PE 100, PEX, PP.

Article	d (mm)	Code	SP	Weight (kg)
RS 125	125	**790 136 007**	1	1.730
RS 225	225	**790 136 012**	1	2.030
RS 315	315	**790 136 015**	1	2.440

Template for fusion joints

To mark the coupler

d-d (mm)	Code	SP	Weight (kg)
16 - 63	**761 066 800**	1	0.014

Tangit KS Cleaner

- Special cleaner for plastic fusion connections in the materialof PP, PE, PVDF and PB
- Suitable for Tangit Rapid. Must not be used for solvent cementing
- DVGW approved
- DW 5290 BR 0464

Size	Code	SP	Weight (kg)
1 liter	**799 298 023**	8	0.872

Tangit KS-Cleaning Tissues

- Special cleaner for plastic fusion connections in the materialof PP, PE, PVDF and PB
- DVGW approved
- DW 5290 BR 0464

Contents	Code	SP	Weight (kg)
1 dispenser with 100 tissues	**799 298 024**	8	0.333

IM 315
Butt fusion machine for industrial applications

- Butt fusion machine for PP, PE, PB and PVDF pipes and fittings for industrial applications with pressure piping systems.
- Extremely sturdy design for use in the workshop and on job sites.
- Designed to provide the highest flexibility to adapt to different sizes or shapes of fittings.
- Angular jointing provided up to 30° (2x15°) for prefabrication of segmented fittings.
- Dimensional range: d90-315 mm, from SDR 41 up to SDR 11 with PE,PP d315 mm
- 115 V on request!
- **BASE MACHINE**
- High precision, distortion-free and robust machine base
- Integrated swivel tables for angular jointing up to 30° (2x15°)
- Handwheel for easy moving of machine carriage
- Exact pressure adjustment via direct spring load transfer
- Fusion pressure is maintained with a user friendly fast-locking handle
- Inner left and right clamping elements, for picking up reduction clamping inserts d 90-315 mm, with fast-locking handle
- Optional outer, horizontally removable clamping devices available
- Weight (including planer and heater): 169 kg
- **PLANER**
- Optimized cutting geometry for even and chatter-free planing
- Swivel mounted for ergonomic handling
- Mechanical stop to provide single sided planing and defined facing depth
- Integrated safety switch to prevent unintentional start-up
- Self-locking mechanism in working position
- **HEATER**
- High-performance and precision heater with electronic temperature control (2500W)
- High accuracy of +/- 4°C over the entire heating surface
- High quality, non-stick PTFE coating
- Pull-off mechanism to automatically detach the heating plate from pipe ends
- Metal sheet cover to protect the heating plate in idle position
- Integrated thermometer for fast visual check of plate temperature
- **ADDITIONAL STANDARD EQUIPMENT**
- Reduction clamping inserts set d 90-315 mm
- Pipe supports for picking up reduction supporting inserts d 90-315 mm
- Reduction pipe supporting inserts set d 90-315 mm
- Timer to clock fusion times
- Machine specific tool set

d-d (mm)	Performance	Description	Code	SP	Weight (kg)
90 - 315	230 V / 3500 W	Without transport crate	**790 143 005**	0	229.000
90 - 315	230 V / 3500 W	With standard transport crate	**790 143 001**	0	269.000
90 - 315	230 V / 3500 W	With special transport crate	**790 143 003**	0	366.000

TOP 2.0 400 - 500 - 630
Butt fusion machine for construction site

Butt Fusion machine to joint PE, PP, PB pipes and fittings for pressure piping systems on building sites and in trenches.
Hydraulically operated with manual control unit.
TOP hydraulic unit with integrated control panel and power outlets.
Including transport packaging (wooden crate); reduction clamping inserts and other accessories to be ordered separately.

- **BASE MACHINE**
- High precision design, distortion-free and sturdy machine frame
- Good accessibility thanks to 45° inclination
- The movable (sliding) 3rd clamp allows easy and time-saving fixation of bends or tees without need of additional tools
- Double-sided heating element pull-off mechanism to optimise the change-over phase
- Weight: Type 400 = 80 kg, Type 500 = 157 kg, Type 630 = 222 kg
- **HYDRAULIC UNIT**
- Compact aluminium case with innovative design
- Intuitive control panel provided with digital indication of hydraulic pressure, electronic heating element temperature controller, 2-channel welding timer
- Automatic pressure control during the cooling time
- Precise pressure setting and fine adjusting
- Push-button operation of machine carriage
- Integrated power outlets for planer, heating element
- Accumulator for pressure equalization during the cooling phase
- Integrated interface for welding recorder
- Max operating pressure: Type 400 = 160 bar, Type 500 - 630 = 200 bar
- Weight: 34 kg
- **PLANER**
- Powerful parallel planer for single or double-sided facing of pipe ends
- Ergonomic, weight-balanced handling
- Self-locking mechanism in working position
- Safety microswitch to prevent undesired start-up
- Weight: Type 400 = 47 kg, Type 500 = 58 kg, Type 630 = 99 kg
- For Type 500 a special version is available, with enhanced performance to work with PP pipes and fittings up to d 500 mm SDR 11
- **HEATING ELEMENT**
- High performance, electronically controlled heating element
- High-quality, non-stick PTFE-coating with long service life
- Temperature indicator integrated into the handle
- Weight: Type 400 = 16 kg, Type 500 = 26 kg, Type 630 = 39 kg
- Input power: Type 400 = 3.5 kW, Type 500= 4.0 kW, Type 630 = 8.0 kW
- **CASE**
- For safe storage of planer and heating element
- Weight: Type 400 = 30 kg, Type 500 = 38 kg, Type 630 = 62 kg

Type	d-d (mm)	Performance	Code	SP	Weight (kg)
TOP 2.0 400	125 - 400	400 V/5700 W	**790 153 011**	1	310.000
TOP 2.0 500	200 - 500	400 V/6300 W	**790 154 011**	1	448.000
TOP 2.0 630	315 - 630	400 V/11000 W	**790 155 011**	1	588.000

Type 400 Reduction clamping inserts

- d 125-355 mm
- Each code number represents 1 piece of reduction clamping insert. Per machine and dimension maximum 8 narrow or wide reduction clamping inserts are needed.
- We recommend 4 wide and 4 narrow half shells.
- Reductions in inch sizes or special diameters upon request

In order to mount the inserts d 125/d 140/d 160/d 180/d 200/d 225/d 250/d 280, the reduction clamping insert d 315 mm, code 790 127 101, must also be used

d (mm)	narrow Code	SP	Weight (kg)	wide Code	SP	Weight (kg)
125	**790 112 100**	0	1.215	**790 112 090**	0	0.957
140	**790 112 101**	0	1.139	**790 112 091**	0	0.950
160	**790 112 102**	0	1.080	**790 112 092**	0	0.980
180	**790 112 103**	0	1.006	**790 112 093**	0	0.931
200	**790 112 104**	0	0.945	**790 112 094**	0	0.880
225	**790 112 105**	0	0.833	**790 112 095**	0	0.940
250	**790 112 106**	0	0.712	**790 112 096**	0	0.754
280	**790 112 107**	0	0.562	**790 112 097**	0	0.750
315	**790 127 111**	0	1.830	**790 127 101**	0	1.830
355	**790 127 112**	0	1.830	**790 127 102**	0	1.830

Set of replacement blades for planer

- Blade has 2 cutting edges (1 set = 2 blades)

d (mm)	Code	SP	Weight (kg)
400	**790 112 110**	0	0.129
500	**790 340 045**	0	0.157
630	**790 117 041**	0	0.229

Tools for compression joints

Assembly tongs

d (mm)	Code	SP	Weight (kg)
16 - 20	**760 853 743**	1	0.503
25	**760 869 950**	1	0.418

Ratched spanner

For tightening and loosening of compression fittings d16 and d20

d (mm)	SW (mm)	Code	SP	Weight (kg)
16	24	**760 854 916**	1	0.280
20	27	**760 854 917**	1	0.321

Ball-head socket wrench - crossbar handle

d-d (mm)	Code	SP	Weight (kg)	SW (mm)
16 - 63	**761 066 843**	2	0.038	3
75 - 110	**761 066 844**	2	0.038	4

Spanner

Tool to change the heating bushes

SW (mm)	Code	SP	Weight (kg)
6	**760 854 906**	1	0.038

1/4" screwdriver bit - ball-head

d-d (mm)	Code	SP	Weight (kg)	SW (mm)
16 - 63	**761 066 845**	5	0.007	3
75 - 110	**761 066 846**	5	0.007	4

Template, Electrofusion - HWS

d-d (mm)	Code	SP	Weight (kg)
16 - 110	**761 069 602**	1	0.065

Tempil sticks

Temperature (°C)	Code	SP	Weight (kg)	Color
253	**761 066 796**	1	0.012	yellow
274	**761 066 797**	1	0.014	red

Marker

For plastic pipes and fittings

Type	Code	SP	Weight (kg)
Black	**761 070 325**	10	0.010

Gloves

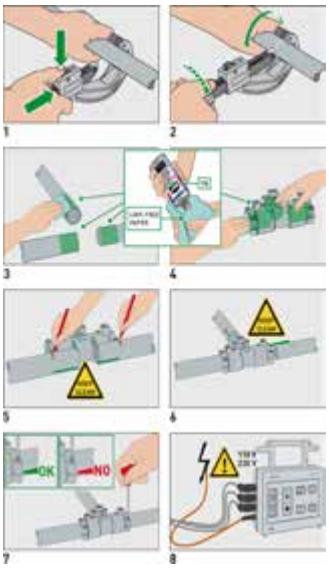
Code	SP	Weight (kg)
761 066 799	1	0.115

Timer with 2 stop times

Code	SP	Weight (kg)
790 114 028	1	0.088

GF Piping Systems

Training documents



Technical manuals jointing technologies

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For high resolution pictures for your seminar or your presentation, please ask your local sales agent

Description	Code	SP	d (mm)	Size
Electro fusion HWS	**760 809 081**	10	16-110	DIN A5
Electro fusion	**760 809 084**	1200	125, 160, 225	DIN A5
Socket fusion HMS	**760 809 085**	10	16-110	DIN A5
System valve BTV 2	**760 809 086**	10	20-63	DIN A5

Current product range INSTAFLEX / iFIT

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Size	Code	SP
DIN A4	**760 809 100**	10

Jointing technology sample

Compression joint / electro fusion / socket fusion

d (mm)	Code	SP	Weight (kg)
16 - 40	**760 854 994**	1	0.823

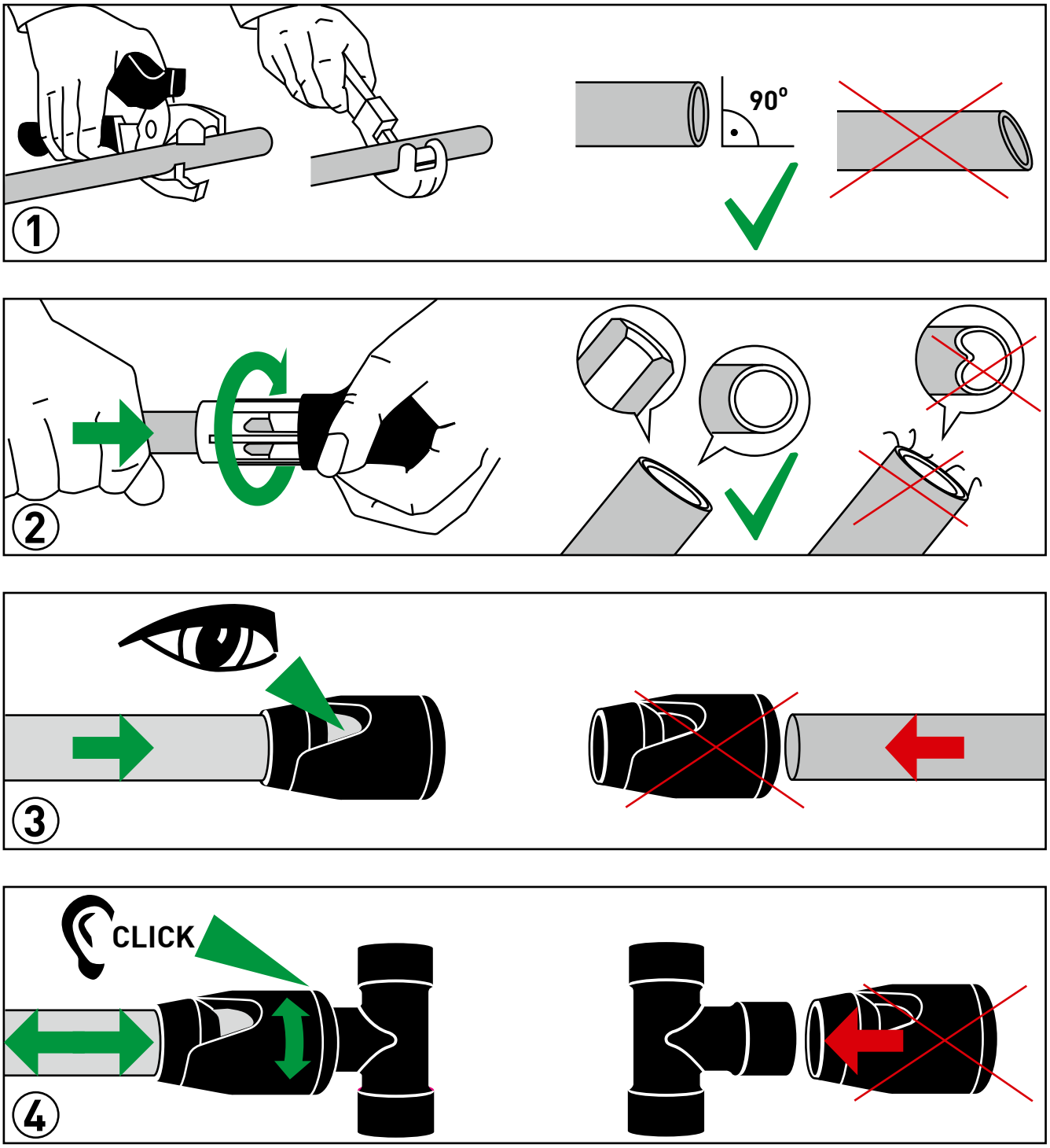
Notes:

iFIT

System overview iFIT

iFIT – the innovative push fit jointing system for heating and plumbing with a safety check you can see and hear. Never before have polybuten and multilayer pipes been so easy, fast and safe to install in the dimensions 16, 20, 25 and 32.

Working with iFIT



Approvals iFIT

LAND-BASED

AENOR
Spanish Association for Standardisation and Certification

001/005182
001/005183
001/006239

ÖVGW
Östereichische Vereinigung für das Gas- und Wasserfach, Austria

W 4.425
W 1.424

aTg (BCCA)
Belgian Construction Certification Association

13/ 2723

SVGW
Schweizerische Verein des Gas- und Wasserfaches, Switzerland

W 0406 - 4834

DVGW
Deutscher Verein des Gas- und Wasserfaches e.V., Germany

DW-850BP0047
DW-8501BP0059

VKF
Vereinigung Kantonaler Feuer-versicherungen, Switzerland

24759
24757

kiwa
Kiwa N.V., Netherlands

K48947/01
K44842/02
K44843/02
K44872/02

SP (SITAC)
Sveriges Tekniska Forskningsinstitut, Sweden

0070/05

KOMO
KOMO N. V., Netherlands Postbus 70
2280 AB Rijswijk

K44871/02
K44872/02

WRAS
Water Regulation Advisory Scheme, England

1312518
1403329

Approvals iFIT

MARINE

ABS
American Bureau of Shipping

14-GD1218536-PDA

RINA
Royal Institution of Naval Architects, England

MAC375614CS

DNV-GL
Det Norske Veritas- Germanischer Lloyd, Norway

74455-96HH

BV
Bureau Veritas, France

35855/AO BV

LR
Lloyd's Register, England

12/00071(E3)

CCS
China Classification Society

SH13G00019
SH13G00020

Class NK
Nippon Kaiki Kypokai, Japan

13008H

RMROS
Russian Maritime Register of Shipping

15.40030.250

Technical Data

Pressure loss chart iFIT (10 °C)

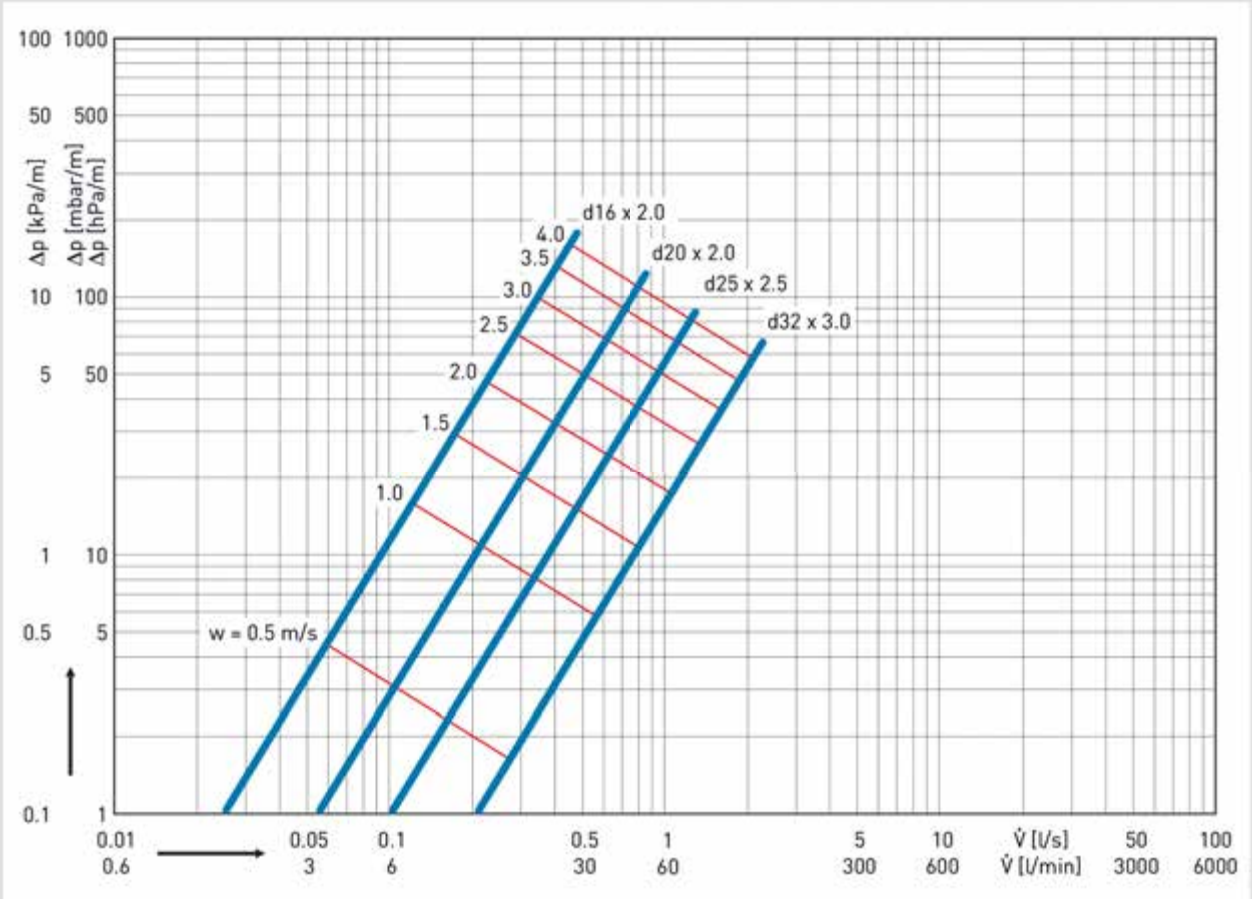
Pressure loss chart for iFIT PB- and ML pipes:

Pipe friction loss in relation to flow rate

Basis of calculation:	
Water temperature	= 10°C
Surface roughness k	= 0.007 mm
Viscosity	= 0.00131 Pa·s
Density ρ	= 999.70 kg/m³

Recommended flow velocity according SVGW guideline W3/2013:

max. 4.0 m/s for single outlet lines
max. 3.0 m/s for apparatus lines
max. 3.0 m/s for floor distribution lines
max. 2.0 m/s for distribution lines



Technical Data

Pressure loss chart iFIT (60 °C)

Pressure loss chart for iFIT PB- and ML pipes:

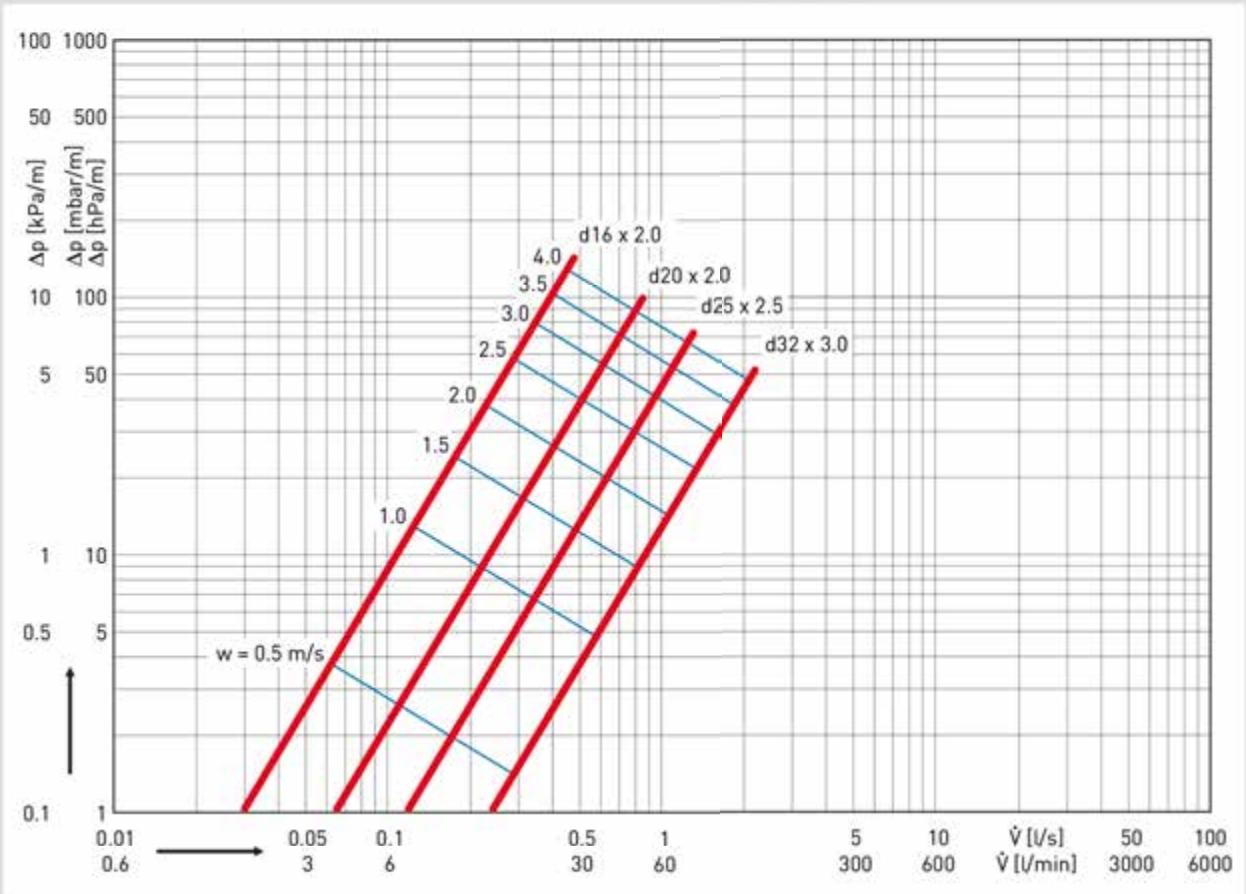
Pipe friction loss in relation to flow rate

Basis of calculation:

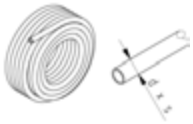
Water temperature	= 60°C
Surface roughness k	= 0.007 mm
Viscosity	= 0.00013 Pa-s
Density ρ	= 983.19 kg/m³

Recommended flow velocity according SVGW guideline W3/2013:

max. 4.0 m/s for single outlet lines
max. 3.0 m/s for apparatus lines
max. 3.0 m/s for floor distribution lines
max. 2.0 m/s for distribution lines



Pipes



Polybutene pipe (coiled)

Packed in cardboard boxes
PB pipe in coils without protective pipe
Without oxygen barrier

d (mm)	s (mm)	Code	SP	Weight (kg)
16	2.0	**762 101 126**	60	0.088
16	2.0	**762 101 201**	420	0.088
20	2.0	**762 101 127**	60	0.115
25	2.5	**762 101 128**	30	0.178

Polybutene pipe in protective pipe (coiled)

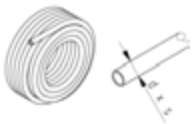
Packed in cardboard boxes
PB pipe in coils in protective pipe
Without oxygen barrier

d (mm)	s (mm)	Code	SP	Weight (kg)	D (mm)
16	2.0	**762 101 012**	60	0.164	25
20	2.0	**762 101 013**	60	0.207	30
25	2.5	**762 101 011**	30	0.286	34

Polybutene pipe 5,0 m (bars)

Packed in cardboard boxes
Without oxygen barrier
* on request

	s (mm)	d (mm)	Code	SP	Weight (kg)
*	2	16	**762 101 160**	45	0.088
*	2	20	**762 101 161**	45	0.115
*	3	25	**762 101 162**	50	0.178
*	3	32	**762 101 163**	20	0.272



Multilayer pipe (coiled)

Packed in cardboard boxes
Multilayer pipe in coils without protective pipe

d (mm)	s (mm)	Code	SP	Weight (kg)
16	2.0	**762 101 000**	100	0.119
16	2.0	**762 101 014**	200	0.118
20	2.0	**762 101 001**	50	0.154
25	2.5	**762 101 130**	50	0.289
32	3.0	**762 101 131**	50	0.354

Multilayer pipe in protective pipe (coiled)

Packed in cardboard boxes
Multilayer pipe in coils in protective pipe

d (mm)	s (mm)	Code	SP	Weight (kg)	D (mm)
16	2.0	**762 101 003**	75	0.194	25
16	2.0	**762 101 194**	75	0.194	25
20	2.0	**762 101 004**	50	0.246	30
20	2.0	**762 101 195**	50	0.246	30

Multilayer pipe 5,0 m (bars)

Packed in cardboard boxes

d (mm)	s (mm)	Code	SP	Weight (kg)
16	2.0	**762 101 005**	45	0.118
20	2.0	**762 101 006**	45	0.154
25	2.5	**762 101 007**	50	0.284
32	3.0	**762 101 008**	20	0.354

Multilayer pipe insulated 6 mm (coiled)

Packed in protective wrap
Multilayer pipe in coils

d (mm)	s (mm)	Code	SP	Weight (kg)	d1 (mm)	s1 (mm)
16	2.0	**762 101 024**	50	0.150	28	6
20	2.0	**762 101 032**	50	0.200	32	6
25	2.5	**762 101 043**	25	0.400	37	6

Multilayer pipe insulated 9 mm (coiled)

Packed in protective wrap
Multilayer pipe in coils

d (mm)	s (mm)	Code	SP	Weight (kg)	d1 (mm)	s1 (mm)
16	2.0	**762 101 076**	50	0.230	34	9
20	2.0	**762 101 078**	50	0.188	38	9
25	2.5	**762 101 082**	25	0.450	43	9

Multilayer pipe insulated 13 mm (coiled)

Packed in protective wrap
Multilayer pipe in coils
* on request

	s (mm)	d (mm)	Code	SP	Weight (kg)	d1 (mm)
*	13	16	**762 101 086**	50	0.300	42
*	13	20	**762 101 090**	50	0.400	46
*	13	25	**762 101 104**	25	0.500	51

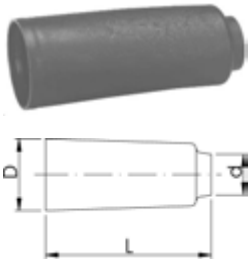
Accessories for pipes

Wall inlet plug

d (mm)	Code	SP	Weight (kg)
16	**762 101 150**	1	0.253
20	**762 101 151**	1	0.257
25	**762 101 152**	1	0.223
32	**762 101 153**	1	0.380

Pipe draw coupling

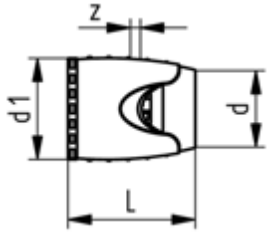
d (mm)	Code	SP	Weight (kg)
16	**762 101 154**	1	0.044
20	**762 101 155**	1	0.090



Cap for protective pipe

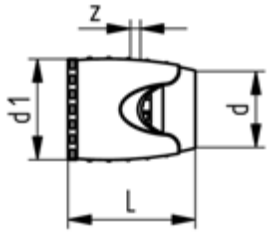
d (mm)	Colors	Code	SP	Weight (kg)	D (mm)	L (mm)
16	red	**762 101 234**	10	0.006	25	70
16	blue	**762 101 235**	10	0.005	25	70
20	red	**762 101 236**	10	0.006	30	70
20	blue	**762 101 237**	10	0.005	30	70

Adapters



Adaptor

d (mm)	d1 (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)
16	30	**762 101 030**	10	0.024	48	5
20	34	**762 101 031**	10	0.028	49	5
25	45	**762 101 034**	5	0.067	62	8
32	52	**762 101 035**	5	0.085	63	8



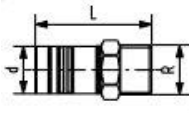
iFIT-FLEXALINO special adaptor

* on request

	d (mm)	d1 (mm)	Code	SP	Weight (kg)	z (mm)	l (mm)
*	16	30	**762 101 050**	10	0.048	5	48

Cap for adaptor

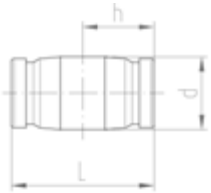
d (mm)	s (mm)	Code	SP	Weight (kg)
16	2.0	**762 101 017**	5	0.004
25	2.5	**762 101 027**	5	0.009



Male thread adaptor 1/2" - pipe outline

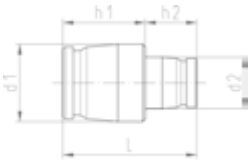
d (mm)	Code	SP	Weight (kg)	L (mm)	R (inch)
20	**762 101 238**	2	0.064	49	½

Modules



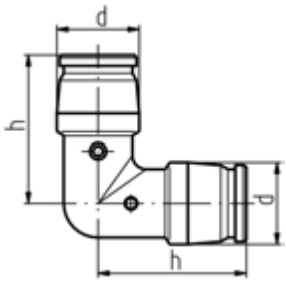
Coupler/reducing module

d (mm)	Code	SP	Weight (kg)	L (mm)	h (mm)
16 - 20	**762 101 044**	10	0.008	43	22
25 - 32	**762 101 175**	5	0.023	56	28



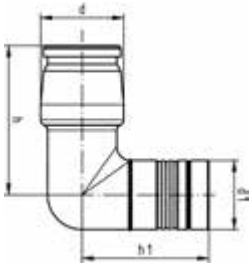
Reducing module

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	L (mm)	h1 (mm)	h2 (mm)
25 - 32	16 - 20	**762 101 177**	2	0.018	52	32	20



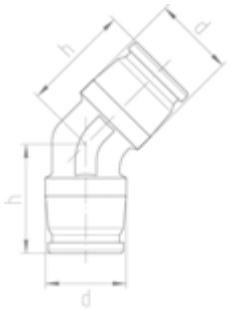
Elbow module 90°

d (mm)	Code	SP	Weight (kg)	h (mm)
16 - 20	**762 101 046**	10	0.013	36
25 - 32	**762 101 179**	5	0.042	54



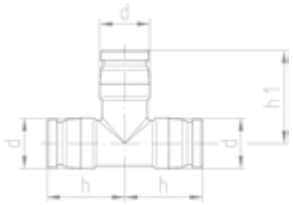
Elbow module 90° - pipe outline

d (mm)	Code	SP	Weight (kg)	d1 (mm)	h1 (mm)	h (mm)
16 - 20	**762 101 202**	5	0.013	20	40	36
25 - 32	**762 101 203**	2	0.030	25	46	54



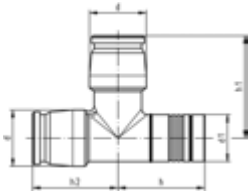
Elbow module 45°

d (mm)	Code	SP	Weight (kg)	h (mm)
25 - 32	**762 101 180**	5	0.033	40



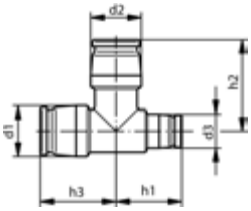
T-piece module

d (mm)	Code	SP	Weight (kg)	h (mm)	h1 (mm)
16 - 20	**762 101 042**	10	0.017	31	37
25 - 32	**762 101 181**	5	0.053	45	54



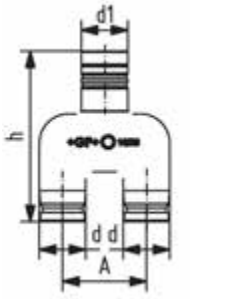
T-piece module - pipe outline

d (mm)	Code	SP	Weight (kg)	d1 (mm)	h (mm)	h1 (mm)	h2 (mm)
16 - 20	**762 101 204**	5	0.017	20	41	37	32
25 - 32	**762 101 205**	2	0.044	25	46	54	45



T- piece module - reduced

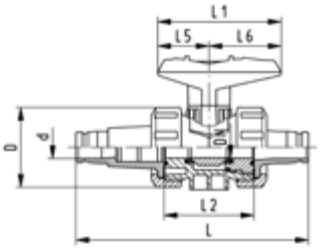
d1 (mm)	d2 (mm)	d3 (mm)	Code	SP	Weight (kg)	H1 (mm)	H2 (mm)	H3 (mm)
25 - 32	25 - 32	16 - 20	**762 101 183**	2	0.045	45	54	39
25 - 32	16 - 20	25 - 32	**762 101 185**	2	0.044	45	48	45
25 - 32	16 - 20	16 - 20	**762 101 187**	2	0.036	45	48	39

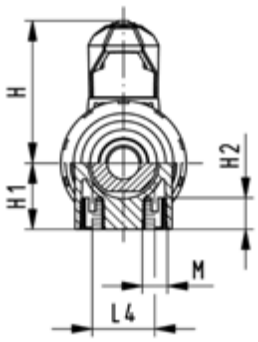


Y-Module

d (mm)	Code	SP	Weight (kg)	d1 (mm)	h (mm)	A (mm)
16 - 20	**762 101 233**	5	0.032	20	74	36

Valves





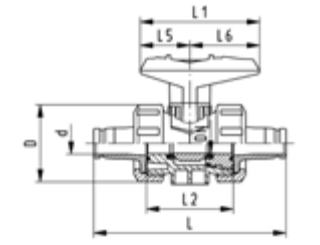
PROGEF Standard
Shipbuilding ball valve type 547
With iFIT connection

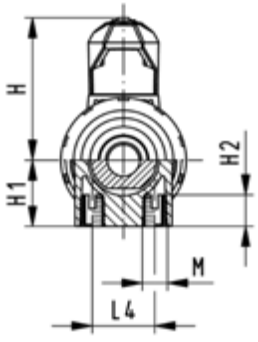
Model:

- Material: PP-H
- iFIT connection for d16/20
- iFIT connector with integrated check valve and filter
- For easy installation and removal
- Ball seals PTFE
- Integrated stainless steel mounting inserts

d (mm)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
20	15	10	40	**167 547 012**	2	0.245

d (mm)	D (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	M (mm)
20	50	57	27	12	146	77	56	25	32	45	6





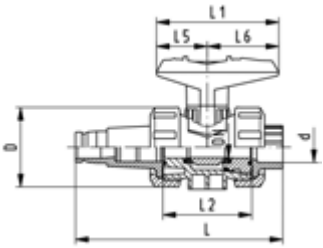
PROGEF Standard
Shipbuilding ball valve type 547
With iFIT connection

Model:

- Material: PP-H
- iFIT connection for d16/20
- For easy installation and removal
- Ball seals PTFE
- Integrated stainless steel mounting inserts

d (mm)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
20	15	10	185	**167 547 812**	2	0.152

d (mm)	D (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	M (mm)
20	50	57	27	12	126	77	56	25	32	45	6

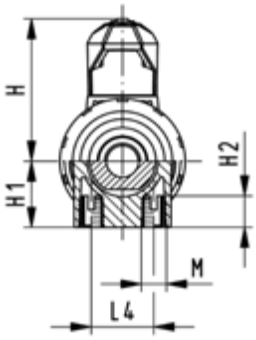


PROGEF Standard
Shipbuilding ball valve type 547
With iFIT connection and fusion socket PB

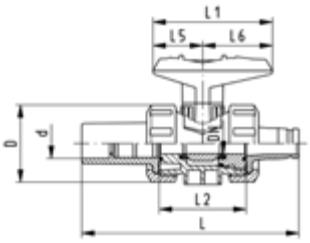
Model:

- Material: PP-H
- iFIT connection for d16/20
- iFIT connection with integrated check valve and filter
- For easy installation and removal
- Ball seals PTFE
- Integrated stainless steel mounting inserts

d (mm)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
16	10	10	40	**167 547 041**	2	0.244
20	15	10	40	**167 547 042**	2	0.242



d (mm)	D (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	M (mm)
16	50	57	27	12	130	77	56	25	32	45	6
20	50	57	27	12	131	77	56	25	32	45	6

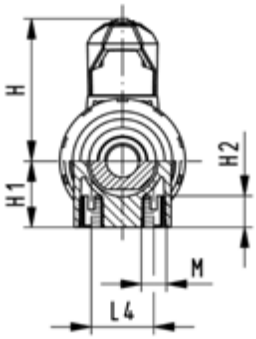


PROGEF Standard
Shipbuilding ball valve type 547
With fusion socket PB and iFIT connection

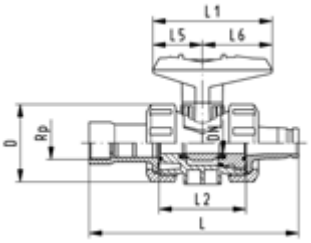
Model:

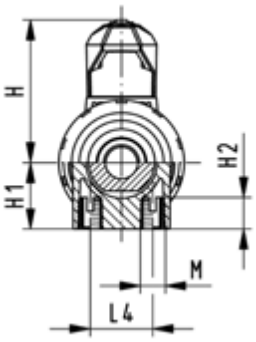
- Material: PP-H
- iFIT connection for d16/20
- For easy installation and removal
- Ball seals PTFE
- Integrated stainless steel mounting inserts
- Fusion socket PB with integrated check valve and filter

d (mm)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
16	10	10	40	**167 547 311**	2	0.303
20	15	10	40	**167 547 312**	2	0.303



d (mm)	D (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	M (mm)
16	50	57	27	12	141	77	56	25	32	45	6
20	50	57	27	12	141	77	56	25	32	45	6





PROGEF Standard
Shipbuilding ball valve type 547
With threaded socket Rp brass and iFIT connection

Model:

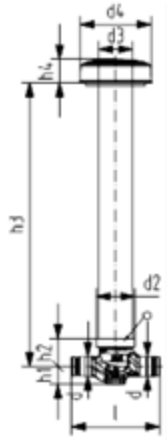
- Material: PP-H
- iFIT connection for d16/20
- Threaded socket Rp brass with integrated check valve and filter
- For easy installation and removal
- Ball seals PTFE
- Integrated stainless steel mounting inserts

Rp (inch)	DN (mm)	PN (bar)	kv-value (Δp=1 bar) (l/min)	EPDM Code	SP	Weight (kg)
½	15	10	40	**167 547 512**	2	0.327

Rp (inch)	D (mm)	H (mm)	H1 (mm)	H2 (mm)	L (mm)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	M (mm)
½	50	57	27	12	136	77	56	25	32	45	6

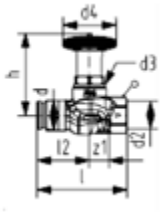
Service housing end connector kit with iFIT connector

d (mm)	Size (inch)	DN (mm)	Code	SP
20	½	15	**167 547 902**	1



Concealed shut-off valve

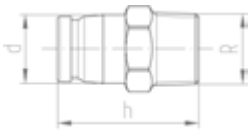
d (mm)	Code	SP	Weight (kg)	d2 (mm)	d3 (mm)	d4 (mm)	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	l (mm)
16 - 20	**762 101 227**	1	0.300	39	34	71	18	28	43 - 270	24	88
25 - 32	**762 101 228**	1	0.500	39	34	71	27	28	43 - 270	24	112



Manifold shut-off valve

d (mm)	Code	SP	Weight (kg)	d2 Rp (inch)	d3 G (inch)	d4 (mm)	l (mm)	l2 (mm)	h (mm)	z1 (mm)
25 - 32	**762 101 229**	1	0.440	¾	¾	53	90	52	82	23

Transition modules



Transition module - male thread

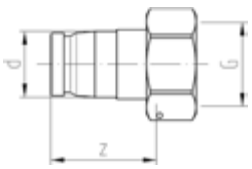
* low lead

	d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)
	16 - 20	½	**762 101 038**	10	0.061	42
	16 - 20	¾	**762 101 039**	10	0.078	43
	25 - 32	¾	**762 101 091**	2	0.144	51
	25 - 32	1	**762 101 092**	2	0.189	55
*	16 - 20	½	**762 101 265**	10	0.060	42
*	16 - 20	¾	**762 101 266**	10	0.071	43
*	25 - 32	¾	**762 101 277**	2	0.135	51
*	25 - 32	1	**762 101 278**	2	0.175	55

Transition module - female thread

* low lead

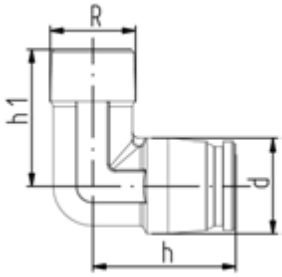
	d (mm)	Rp (inch)	Code	SP	Weight (kg)	h (mm)	z (mm)
	16 - 20	½	**762 101 040**	10	0.067	36	23
	16 - 20	¾	**762 101 041**	10	0.087	39	24
	25 - 32	¾	**762 101 093**	2	0.131	45	31
	25 - 32	1	**762 101 094**	2	0.163	49	32
*	16 - 20	½	**762 101 267**	10	0.065	36	23
*	16 - 20	¾	**762 101 268**	10	0.085	39	24
*	25 - 32	¾	**762 101 279**	2	0.127	45	31
*	25 - 32	1	**762 101 280**	2	0.175	49	32



Transition union module - flat sealed

Supplied with sealing
** on request
* low lead

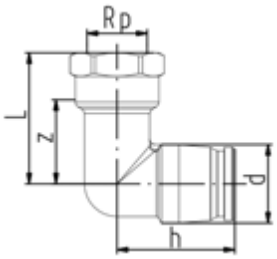
	d (mm)	G (inch)	Code	SP	Weight (kg)	z (mm)
**	16 - 20	½	**762 101 088**	2	0.080	41
	16 - 20	¾	**762 101 056**	2	0.085	35
	25 - 32	¾	**762 101 095**	2	0.170	48
	25 - 32	1	**762 101 096**	2	0.233	55
	25 - 32	1 ¼	**762 101 097**	2	0.266	48
	25 - 32	1 ½	**762 101 098**	2	0.339	50
*,**	16 - 20	½	**762 101 276**	2	0.695	41
*	16 - 20	¾	**762 101 273**	5	0.075	35
*	25 - 32	¾	**762 101 281**	2	0.155	48
*	25 - 32	1	**762 101 282**	2	0.180	55
*	25 - 32	1 ¼	**762 101 283**	2	0.252	48
*	25 - 32	1 ½	**762 101 284**	2	0.357	50



Transition elbow module - male thread

* low lead

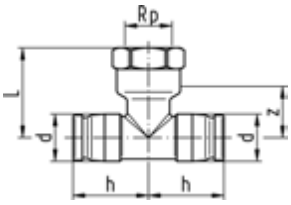
	d (mm)	R (inch)	Code	SP	Weight (kg)	h (mm)	h1 (mm)
	16 - 20	½	**762 101 051**	10	0.071	30	34
	16 - 20	¾	**762 101 052**	10	0.076	30	35
	25 - 32	¾	**762 101 099**	2	0.189	45	43
	25 - 32	1	**762 101 100**	2	0.214	45	45
*	16 - 20	½	**762 101 270**	10	0.071	30	34
*	16 - 20	¾	**762 101 271**	10	0.076	30	35
*	25 - 32	¾	**762 101 285**	2	0.189	45	43
*	25 - 32	1	**762 101 286**	2	0.214	45	45



Transition elbow module - female thread

* low lead

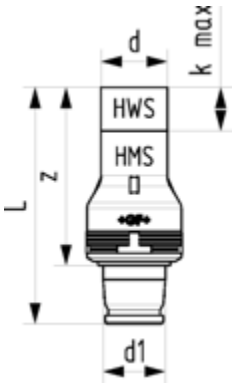
	d (mm)	Rp (inch)	Code	SP	Weight (kg)	L (mm)	h (mm)	z (mm)
	16 - 20	½	**762 101 101**	10	0.102	38	32	25
	16 - 20	¾	**762 101 105**	10	0.120	40	36	22
	25 - 32	¾	**762 101 102**	5	0.211	50	45	33
*	16 - 20	½	**762 101 287**	10	0.102	38	32	25
*	16 - 20	¾	**762 101 290**	10	0.120	40	36	22
*	25 - 32	¾	**762 101 288**	5	0.211	50	45	33



Transition Tee module - female thread

* low lead

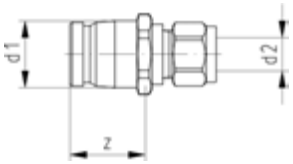
	d (mm)	Rp (inch)	Code	SP	Weight (kg)	L (mm)	h (mm)	z (mm)
	16 - 20	½	**762 101 055**	5	0.129	38	32	25
	25 - 32	¾	**762 101 103**	2	0.291	50	43	35
*	16 - 20	½	**762 101 272**	5	0.129	38	32	25
*	25 - 32	¾	**762 101 289**	2	0.291	50	43	35



Transition module iFIT-INSTAFLEX

Socket fusion transition to iFIT
Thread in DZR brass, UBA (Umwelt Bundesamt, Germany) conform
EPDM sealing hot and cold water approved

d (mm)	d1 (mm)	Code	SP	Weight (kg)	L (mm)	z (mm)	k max. (mm)
16	16 - 20	**762 101 253**	1	0.075	93	73	22
20	16 - 20	**762 101 254**	1	0.088	96	76	23
25	16 - 20	**762 101 255**	1	0.110	103	83	23
25	25 - 32	**762 101 256**	1	0.164	108	83	23
32	25 - 32	**762 101 257**	1	0.213	144	86	21



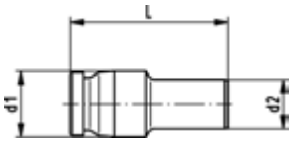
Transition module - iFIT/copper

** on request
* low lead

	d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	z (mm)
	16 - 20	10	**762 101 089**	10	0.070	22
	16 - 20	12	**762 101 210**	10	0.052	19
	16 - 20	15	**762 101 211**	10	0.064	22
*, **	16 - 20	12	**762 101 292**	10	0.050	19
*, **	16 - 20	15	**762 101 293**	10	0.060	22

Transition module - iFIT/JRG Sanipex MT

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	l (mm)
16 / 20	26	**762 101 323**	2	0.091	49
16 / 20	32	**762 101 324**	2	0.145	57
25 / 32	32	**762 101 325**	2	0.185	64



Transition module - iFIT/press

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	L (mm)
16 - 20	15	**762 101 190**	2	0.036	54
16 - 20	18	**762 101 191**	2	0.037	56
25 - 32	22	**762 101 192**	2	0.105	70
25 - 32	28	**762 101 193**	2	0.103	70

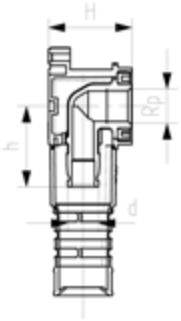
Accessories for modules

Plug module-side

With air-vent screw 1/2"

d (mm)	Code	SP	Weight (kg)
16 - 20	**762 101 207**	1	0.140
25 - 32	**762 101 208**	1	0.196

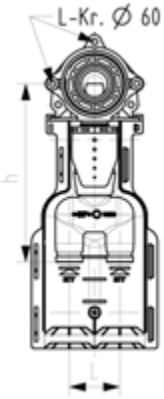
Outlet joints

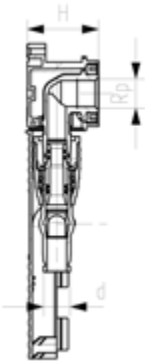


Single pipe outlet with box

Accessories from the JRG Sanipex product range.
Box brackets, distance plates and other accessories may be found under the catalogue numbers 5409 and 5741.

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	h (mm)
	16 - 20	½	**762 101 224**	10	0.205	51	50
	16 - 20	¾	**762 101 225**	10	0.213	51	50
*	16 - 20	½	**762 101 303**	10	0.205	51	50
*	16 - 20	¾	**762 101 304**	10	0.200	51	50

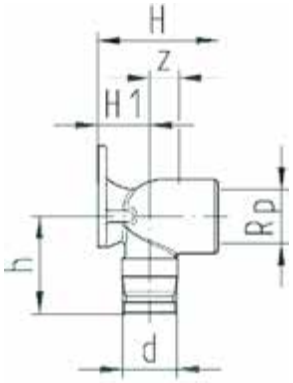


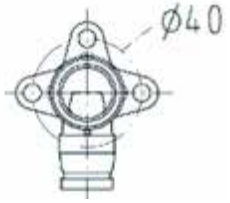


Dual pipe outlet with box

Accessories from the JRG Sanipex product range.
Box brackets, distance plates and other accessories may be found under the catalogue numbers 5409 and 5741.

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	h (mm)	L (mm)
	16 - 20	½	**762 101 226**	1	0.320	51	128	36
*	16 - 20	½	**762 101 305**	1	0.320	51	128	36





Single pipe outlet module

Applicable for light and wood construction
* low lead

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	H1 (mm)	h (mm)	z (mm)
	16 - 20	½	**762 101 018**	10	0.153	44	19	36	12
*	16 - 20	½	**762 101 259**	10	0.130	44	19	36	12
	16 - 20	½	**762 101 070**	5	0.188	64	19	36	32
*	16 - 20	½	**762 101 274**	5	0.188	64	19	36	32
	16 - 20	½	**762 101 242**	2	0.272	95	19	39	63
	16 - 20	¾	**762 101 019**	2	0.173	44	19	39	11
*	16 - 20	¾	**762 101 260**	2	0.173	44	19	39	11

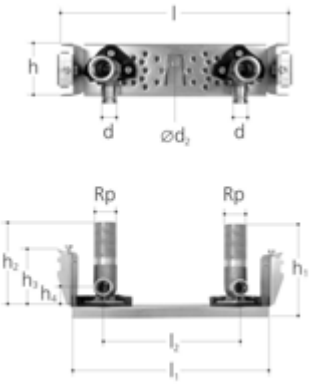


Plate for GIS profile with iFIT fitting connections

Made of galvanized steel, fitting connections with female thread, pressure plug made of plastic and fixing clip to washbasin, noise absorbing element and sealing gasket made of rubber, suitable for: Geberit system (GIS)

d (mm)	Rp (inch)	Code	SP	Weight (kg)	d2 (mm)	h (mm)	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	l (mm)	l1 (mm)	l2 (mm)
16 - 20	½	**762 101 240**	1	0.925	10	64	111	98	71	22	248	223	153

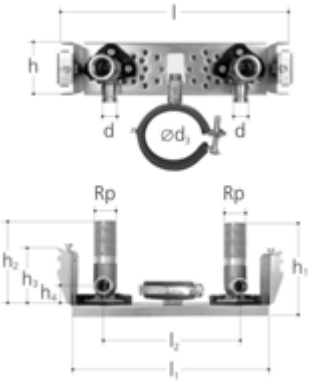
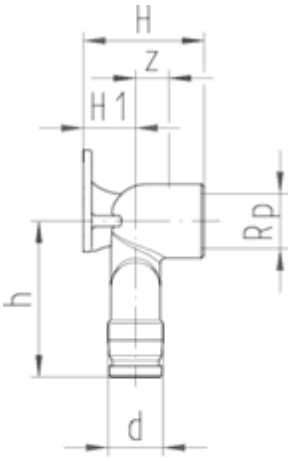


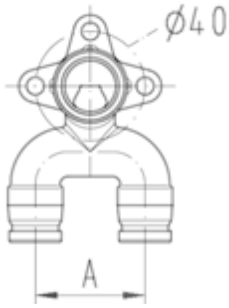
Plate for GIS profile with drain pipe clamp

Made of galvanized steel, drain pipe clamp, fitting connections with female thread, pressure plug made of plastic and fixing clip to washbasin, noise absorbing element and sealing gasket made of rubber, suitable for: Geberit system (GIS)

d (mm)	Rp (inch)	Code	SP	Weight (kg)
16 - 20	½	**762 101 241**	1	1.015

d (mm)	Rp (inch)	d2 (mm)	d3 (mm)	h (mm)	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	l (mm)	l1 (mm)	l2 (mm)
16 - 20	½	10	50 - 70	64	111	98	71	22	248	223	153

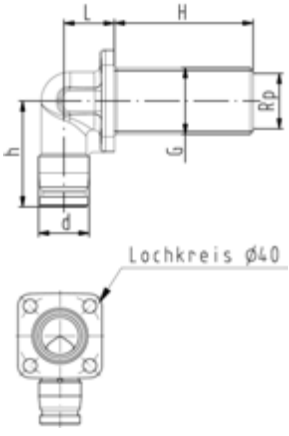




Dual pipe outlet module

Applicable for light and wood construction
* low lead

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	A (mm)	H (mm)	H1 (mm)	h (mm)	z (mm)
	16 - 20	½	**762 101 022**	60	0.240	40	44	19	57	12
	16 - 20	½	**762 101 071**	2	0.282	40	64	19	57	32
*	16 - 20	½	**762 101 261**	2	0.240	40	44	19	57	12
*	16 - 20	½	**762 101 275**	2	0.282	40	64	19	57	32

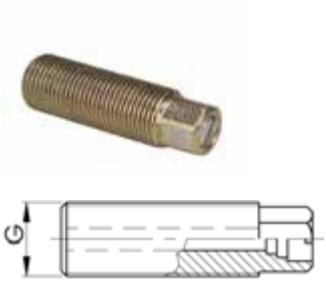


Single pipe outlet module 1/2" - 3/4"

* low lead

	d (mm)	Rp (inch)	Code	SP	Weight (kg)	H (mm)	h (mm)	G (inch)	L (mm)
	16 - 20	½	**762 101 047**	1	0.197	55	42	¾	20
*	16 - 20	½	**762 101 269**	1	0.197	55	42	¾	20

Accessories for outlet joints



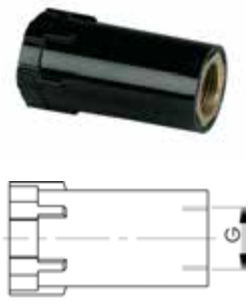
Mounting bolt

G (inch)	Code	SP	Weight (kg)
½	**760 853 291**	5	0.138

Wall inlet plug

*Replacement seal code no. 760 853 175, on request

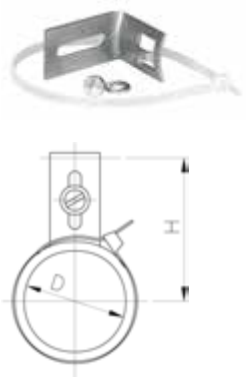
G (inch)	Code	SP	Weight (kg)
½	**760 853 297**	10	0.088



Fastening sleeve

From the INSTAFLEX range

Rp (inch)	Code	SP	Weight (kg)
½	**760 853 298**	10	0.050

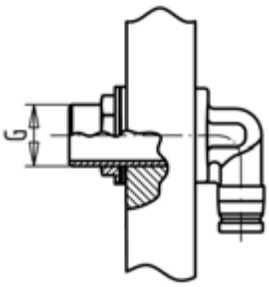


Bracket for waste pipe

D (mm)	Code	SP	Weight (kg)	H (mm)
56	**760 854 677**	1	0.032	65 - 80

Installation bar

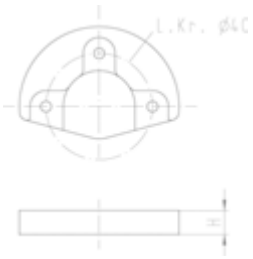
L (mm)	Code	SP	Weight (kg)
2000	**760 853 683**	5	2.840



Fastening set

Appropriate to outlet joint with male thread
Consists of: Union nut, washer, seal

Code	SP	Weight (kg)
760 854 699	10	0.031



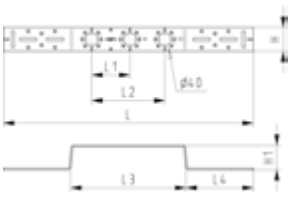
Sound proofing for pipe outlet

H (mm)	Code	SP	Weight (kg)
11	**762 101 033**	10	0.011

Sound proofing for pipe outlet

Single or double

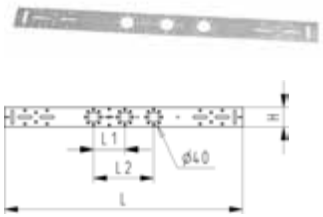
	Code	SP	Weight (kg)
Set double	**762 101 037**	2	0.123
Set single	**762 101 036**	5	0.077



Angular plate

With hole circle 40 and thread M 6
From the INSTAFLEX range
* suitable also for GIS

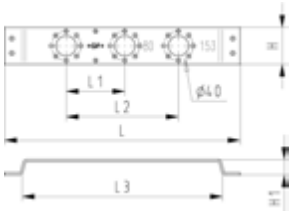
	L (mm)		Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	H1 (mm)
	370	single	**760 869 917**	5	0.461			80	145	50	51
	470	double	**760 869 916**	5	0.566	100		180	145	50	51
*	523	triple	**760 869 915**	5	0.601	80	153	233	145	50	51
*	523	double	**760 856 042**	5	0.600		153	233	145	50	51



Distance plate - flat

With hole circle 40 and thread M6
From the INSTAFLEX range

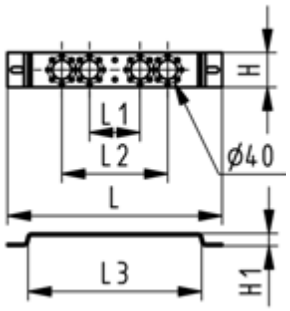
L (mm)		Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	H (mm)
452	single	**760 869 920**	5	0.464			50
552	double	**760 869 919**	5	0.564	100		50
605	triple	**760 869 918**	5	0.624	80	153	50



Distance plate for dry lined walls

Lightweight construction walls
With hole circle 40 and thread M6

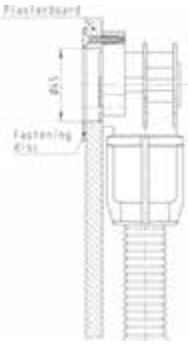
L (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	L3 (mm)	H (mm)	H1 (mm)
321	**760 869 921**	5	0.374	80	153	273	50	21

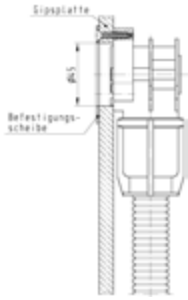


GIS distance plate for dry lined walls

With hole circle 40 and thread M6
From the INSTAFLEX range

L (mm)	Code	SP	Weight (kg)	L1 (mm)	L2 (mm)	L3 (mm)	H (mm)	H1 (mm)
310	**760 855 133**	0	0.292	80	153	250	50	21



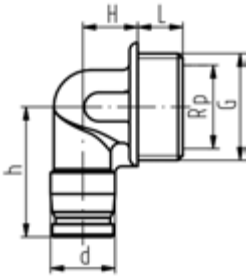


Fastening disc

For lightweight construction walls - single fitting connection/double fitting connection - 1/2" thread
Including screws
From the INSTAFLEX range

Code	SP	Weight (kg)
760 856 204	2	0.050

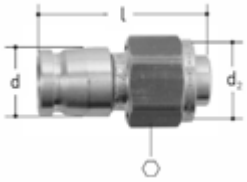
WC connection modules



WC connection module concealed

Incl. plastic union nut
* low lead

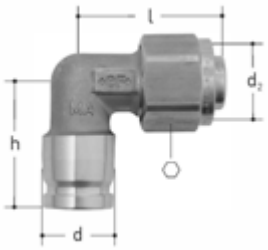
	d (mm)	Rp (inch)	Code	SP	Weight (kg)	G (inch)	L (mm)	H (mm)	h (mm)
	16 - 20	½	**762 101 023**	5	0.147	1	14	17	41
*	16 - 20	½	**762 101 262**	5	0.147	1	14	17	41



Pipe outlet module for MeplaFix

Incl. protection cap
* low lead

	d (mm)	d2 (inch)	Code	SP	Weight (kg)	L (mm)	⬡
	16 - 20	½	**762 101 026**	1	0.060	53	24
*	16 - 20	½	**762 101 264**	1	0.060	53	24

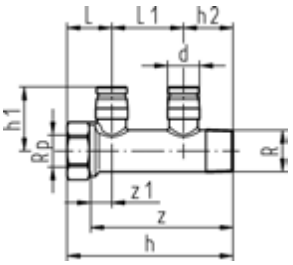


Pipe outlet elbow module for MeplaFix

Incl. protection cap
* low lead

	d (mm)	d2 (inch)	Code	SP	Weight (kg)	L (mm)	h (mm)	⬡
	16 - 20	½	**762 101 025**	5	0.085	45	34	24
*	16 - 20	½	**762 101 263**	5	0.085	45	34	24

Manifolds

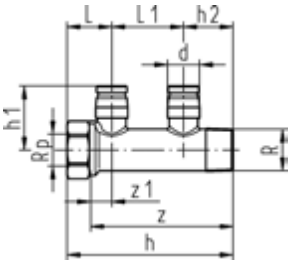


Manifold module

* low lead

	d (mm)	Rp (inch)	R (inch)	outlet	Code	SP	Weight (kg)
	16 - 20	¾	¾	2-fold	**762 101 230**	2	0.315
	16 - 20	¾	¾	3-fold	**762 101 231**	2	0.444
	16 - 20	¾	¾	4-fold	**762 101 232**	2	0.573
*	16 - 20	¾	¾	2-fold	**762 101 294**	2	0.315
*	16 - 20	¾	¾	3-fold	**762 101 295**	2	0.444
*	16 - 20	¾	¾	4-fold	**762 101 296**	2	0.573

	d (mm)	Rp (inch)	R (inch)	outlet	h (mm)	h1 (mm)	h2 (mm)	L (mm)	L1 (mm)	z (mm)	z1 (mm)
	16 - 20	¾	¾	2-fold	123	40	35	33	55	109	19
	16 - 20	¾	¾	3-fold	178	40	35	33	55	164	19
	16 - 20	¾	¾	4-fold	233	40	35	33	55	219	19
*	16 - 20	¾	¾	2-fold	123	40	35	33	55	109	19
*	16 - 20	¾	¾	3-fold	178	40	35	33	55	164	19
*	16 - 20	¾	¾	4-fold	233	40	35	33	55	219	19

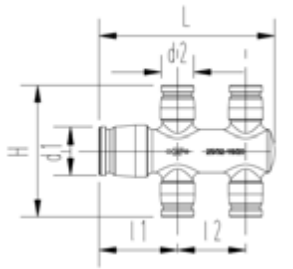


Manifold module
with center-to-center distance of 45 mm

* low lead
** on request

	outlet	d (mm)	Rp (inch)	R (inch)	Code	SP	Weight (kg)
**	2-fold	16 - 20	¾	¾	**762 101 048**	2	0.267
*,**	2-fold	16 - 20	1	1	**762 101 209**	50	0.436

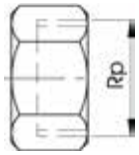
	L (mm)	L1 (mm)	h (mm)	h1 (mm)	h2 (mm)	z (mm)	z1 (mm)
**	28	45	104	40	31	90	14
*,**	37	60	131	45	34	120	26



Manifold module PPSU

d1 (mm)	d2 (mm)	outlet	Code	SP	Weight (kg)	L (mm)	l1 (mm)	l2 (mm)	H (mm)
25 - 32	16 - 20	3-fold	**762 101 213**	2	0.052	103	46	40	77
25 - 32	16 - 20	4-fold	**762 101 212**	2	0.056	103	46	40	77

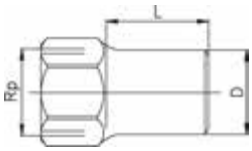
Accessories for manifolds



Cap

From the INSTAFLEX range

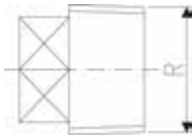
Rp (inch)	Code	SP	Weight (kg)
¾	**760 853 794**	5	0.084
1	**760 853 706**	5	0.135



Cap long

From the INSTAFLEX range

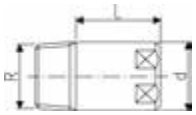
Rp (inch)	Code	SP	Weight (kg)	D (mm)	L (mm)
¾	**760 853 596**	5	0.162	27	34



Plug

From the INSTAFLEX range

R (inch)	Code	SP	Weight (kg)
¾	**760 853 792**	5	0.050
1	**760 853 793**	5	0.084



Plug long

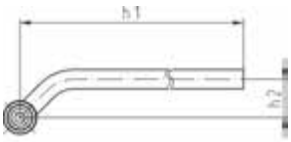
From the INSTAFLEX range

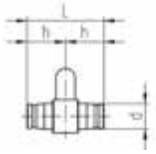
R (inch)	Code	SP	Weight (kg)	D (mm)	L (mm)
¾	**760 869 989**	5	0.150	27	52

Heating assortment

Connecting elbow module - single

d (mm)	Code	SP	Weight (kg)	h (mm)	h1 (mm)
16 - 20	**762 101 064**	5	0.174	330	84





Connecting elbow module - double

d1 (mm)	d2 (mm)	Code	SP	Weight (kg)	h (mm)	h1 (mm)	h2 (mm)	L (mm)
16 - 20	16 - 20	**762 101 065**	5	0.237	30	330	30	60

Cross Tee module

With isolation box

d (mm)	Code	SP	Weight (kg)	L (mm)	L1 (mm)	H (mm)	H1 (mm)	H2 (mm)
16 - 20	**762 101 068**	1	0.877	50	50	63	66	46

iFIT

Tools

Tool set for ML- and PB pipes

d16 / d20 with pipe scissor, d25 / d32 with pipe cutter

d (mm)	Code	SP	Weight (kg)
16 / 20	**762 101 122**	1	1.163
25 / 32	**762 101 133**	1	1.371

Chamfering tool for ML- and PB pipes

d (mm)	Code	SP	Weight (kg)
16	**762 101 116**	1	0.188
20	**762 101 120**	1	0.205
25	**762 101 125**	1	0.252
32	**762 101 132**	1	0.323

Pipe shears d16-d20 for ML- and PB pipes

Also for cutting of protective pipe

d (mm)	Code	SP	Weight (kg)
16 / 20	**762 101 108**	1	0.322
Spare blades	**762 101 109**	1	0.014

Pipe cutter d16-d32 for ML- and PB pipes

d (mm)	Code	SP	Weight (kg)
16 - 32	**762 101 117**	1	0.386
Spare blades	**762 101 118**	1	0.005

Outside pipe bending tool for ML pipes

d (mm)	Code	SP	Weight (kg)
16	**762 101 112**	1	0.442
20	**762 101 113**	1	0.541
25	**762 101 114**	1	0.636
32	**762 101 115**	1	0.798

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General Condition of Supply of Georg Fischer Piping Systems Limited, Schaffhausen

1 General

1.1 These General Conditions shall apply to all Products supplied by Georg Fischer Piping Systems Limited («Georg Fischer») to the Purchaser.
They shall also apply to all future business even when no express reference is made to them.

1.2 Any deviating or supplementary conditions especially Purchaser's general conditions of purchase and verbal agreements shall only be applicable if accepted in writing by Georg Fischer.

1.3 The written form shall be deemed to be fulfilled by all forms of transmission, evidenced in the form of text, such as telefax, e-mail, etc.

2 Tenders

Tenders shall only be binding if they contain a specifically stated period for acceptance.

3 Scope of Delivery

3.1 Georg Fischer's product range is subject to change.

3.2 The confirmation of order shall govern the scope and execution of the contract.

4 Data and Documents

4.1 Technical documents such as drawings, descriptions, illustrations and data on dimensions, performance and weight as well as the reference to standards are for information purposes only. They are not warranted characteristics and are subject to change.

4.2 All technical documents shall remain the exclusive property of Georg Fischer and may only be used for the agreed purposes or as Georg Fischer may consent.

5 Confidentiality, Protection of Personal Data

5.1 Each party shall keep in strict confidence all commercial or technical information relating to the business of the other party, of which it has gained knowledge in the course of its dealing with the other party. Such information shall neither be disclosed to third parties nor used for other purposes than those for which the information has been supplied.

5.2 In the context of the contractual relation with the Purchaser personal data may be processed. The Purchaser agrees to the disclosure of said data to third parties such as foreign subcontractors and suppliers etc .

6 Local Laws and Regulations, Export Controls

6.1 The Purchaser shall bring to the attention of Georg Fischer all local laws and regulations at the place of destination which bear connection with the execution of the contract and the adherence to relevant safety regulations and approval procedures.

6.2 In case of re-exports, Purchaser shall be responsible for compliance with pertinent export control regulations.

7 Price

7.1 Unless agreed otherwise, the prices shall be deemed quoted net ex works (according to Incoterms 2010 of the ICC, or latest version) including standard packing. All supplementary costs such as the cost of carriage, insurance, export-, transit- and import- licences etc. shall be borne by the Purchaser. The Purchaser shall also bear the costs of all taxes, fees, duties etc. connected with the contract.

7.2 If the costs of packing, carriage, insurance, fees and other supplementary costs are included in the tender price or contract price or are referred to specifically in the tender or confirmation of order, Georg Fischer reserve the right to revise their prices accordingly should any change occur in the relevant tariffs.

8 Terms of Payment

8.1 The Purchaser shall make payment in the manner agreed by the parties without any deductions such as discounts, costs, taxes or dues.

8.2 The Purchaser may only withhold or off-set payments due against counter claims which are either expressly acknowledged by Georg Fischer or finally awarded to the Purchaser.
In particular, payment shall still be made when unessential items are still outstanding provided that the Products already delivered are not rendered unusable as a result.

9 Retention of Title

9.1 The Products shall remain the property of Georg Fischer until the Purchaser shall have settled all claims, present and future, which Georg Fischer may have against him.

9.2 Should the Purchaser resell Products to which title is reserved, in the ordinary course of business, he shall hereby be deemed to have tacitly assigned to Georg Fischer the proceeds deriving from their sale together with all collateral rights, securities and reservations of title until all claims held by Georg Fischer shall have been settled. Until revoked by Georg Fischer, this assignment shall not preclude Purchaser's right to collect the assigned receivables.

9.3 To the extent the value of the Products to which title is reserved together with collateral securities exceeds Georg Fischer's claims against the Purchaser by more than 20%, Georg Fischer shall re-assign the above proceeds to Purchaser at his request.

10 Delivery

10.1 The term of delivery shall commence as soon as the contract has been entered into, all official formalities such as import and payment permits have been obtained and all essential technical issues have been settled. The term of delivery shall be deemed duly observed when, upon its expiry, the Products are ready for despatch.

10.2 Delivery is subject to the following conditions, i.e. the term of delivery shall be reasonably extended:

a) if Georg Fischer are not supplied in time with the information necessary for the execution of the contract or if subsequent changes causing delays are made by the Purchaser.

b) if Georg Fischer are prevented from performing the contract by force majeure. Force majeure shall equally be deemed to be any unforeseeable event beyond Georg Fischer's control which renders Georg Fischer's performance commercially unpractical or impossible, such as delayed or defective supplies from sub contractors labour disputes, governmental orders or regulations, shortages in materials or energy, serious disturbances in Georg Fischer's works, such as the total or partial destruction of plant and equipment or the breakdown of essential facilities, serious disruptions in transport facilities, e.g. impassable roads.
Should the effect of force majeure exceed a period of six (6) months, either party may cancel the contract forthwith.
Georg Fischer shall not be liable for any damage or loss of any kind whatsoever resulting the refrom, any suspension or cancellation being without prejudice to Georg Fischer's right to recover all sums due in respect of consignments delivered and costs incurred to date.

c) if the Purchaser is in delay with the fulfilment of his obligations under the contract, in particular, if he does not adhere to the agreed conditions of payment or if he has failed to timely provide the agreed securities.

10.3 If for reasons attributable to Georg Fischer the agreed term of delivery or a reasonable extension thereof is exceeded, Georg Fischer shall not be deemed in default until the Purchaser has granted to Georg Fischer in writing a reasonable extension thereof of not less than one (1) month which equally is not met.
The Purchaser shall then be entitled to the remedies provided at law, it being however understood that, subject to limitations of Art. 16, damage claims shall be limited to max. 10% of the price of the delayed delivery.

10.4 Part shipments shall be allowed and Georg Fischer shall be entitled to invoice for such partial deliveries.

10.5 If the Purchaser fails to take delivery within a reasonable time of Products notified as ready for despatch, Georg Fischer shall be entitled to store the Products at the Purchaser's expense and risk and to invoice them as delivered. If Purchaser fails to effect payment, Georg Fischer shall be entitled to dispose of the Products.

10.6 Should Purchaser cancel an order without justification and should Georg Fischer not insist on the performance of the contract, Georg Fischer shall be entitled to a penalty amounting to 10% of the contract price, Georg Fischer's right to prove and claim higher damages remaining reserved. Purchaser shall be entitled to prove, that Georg Fischer has suffered no or a considerably lower damage than the penalty forfeited.

11 Packing

If the Products are provided with additional packing over and above the standard packing, such packing shall be charged additionally.

12 Passing of Risk

12.1 The risk in the Products shall pass to the Purchaser as soon as they have left Georg Fischer's works (EX WORKS, Incoterms 2010 ICC, or latest version), even if delivery is made carriage-paid, under similar clauses or including installation or when carriage is organized and managed by Georg Fischer.

12.2 If delivery is delayed for reasons beyond Georg Fischer's control, the risk shall pass to the Purchaser when he is notified that the Products are ready for despatch.

13 Carriage and Insurance

13.1 Unless agreed otherwise, the Purchaser shall bear the cost of carriage.

13.2 The Purchaser shall be responsible for transport insurance against damage of whatever kind. Even when such insurance is arranged by Georg Fischer it shall be deemed taken out by the order of and for the account of the Purchaser and at his risk.

13.3 Special requests regarding carriage and insurance shall be communicated to Georg Fischer in due time. Otherwise carriage shall be arranged by Georg Fischer at their discretion, but without responsibility, by the quickest and cheapest method possible.
In case of carriage-paid delivery transport arrangements shall be made by Georg Fischer. If the Purchaser specifies particular requirements, any extra costs involved shall be borne by him.

13.4 In the event of damage or loss of the Products during carriage the Purchaser shall mark the delivery documents accordingly and immediately have the damage ascertained by the carrier. Not readily ascertainable damages sustained during carriage shall be notified to the carrier within six (6) days after receipt of the Products.

14 Inspection, Notification of Defects and Damages

14.1 The Products will be subject to normal inspection by Georg Fischer during manufacture. Additional tests required by the Purchaser shall be agreed upon in writing and shall be charged to the Purchaser.

14.2 It shall be a condition of Georg Fischer's obligation under the warranties stated hereinafter that Georg Fischer be notified in writing by the Purchaser of any purported defect immediately upon discovery. Notice concerning weight, numbers or apparent defects is to be given latest within 30 days from receipt of the Products, notice of other defects immediately latest within seven (7) working days after discovery, in any event within the agreed warranty period.

14.3 Purchaser shall not dispose of allegedly defective Products until all warranty and/or damage claims are finally settled. At its request, defective Products are to be placed at Georg Fischer's disposal.

14.4 At its request, Georg Fischer shall be given the opportunity to inspect the defect and/or damage, prior to commencement of remedial work, either itself or by third party experts.

15 Warranty

15.1 At the written request of the Purchaser, Georg Fischer undertakes to repair or replace at its discretion, as quickly as possible and free of charge, all Products supplied which demonstrably suffer from faulty design, materials or workmanship, from faulty operating or installation instructions or which become defective or unusable due to faulty advice.
In order to protect employees from toxic or radioactive substances which may have been transported through defective parts returned to Georg Fischer's sales organisation, said parts must be accompanied by a Material Safety Disclosure Form. The form may be obtained from Georg Fischer's local sales company or via www.piping.georgfischer.com.
Replaced parts shall become property of Georg Fischer, unless Georg Fischer waives such claim.

15.2 For Products which are manufactured to specifications, drawings or patterns supplied by the Purchaser, Georg Fischer's warranty shall be restricted to proper materials and workmanship.

15.3 The Purchaser shall be entitled to rescind the contract or to demand a reduction of the contract price if
- the repair or replacement of the defective Product is impossible
- the defective Product is not repaired or replaced within a reasonable period
- Georg Fischer refuses the repair or replacement or if for reasons attributable to Georg Fischer the repair or replacement is delayed.

15.4 For Products or essential components manufactured by a third party and supplied by Georg Fischer under this contract, Georg Fischer's warranty is limited to the warranty provided by said third party.

15.5 This warranty shall not apply to damage resulting from normal wear and tear, improper storage and maintenance, failure to observe the operating instructions, overstressing or overloading, unsuitable operating media, unsuitable construction work or unsuitable building ground, improper repairs or alterations by the Purchaser or third parties, the use of other than original spare parts and other reasons beyond Georg Fischer's control.

15.6 No action or claim may be brought by the Purchaser on account of any alleged breach of warranty or any other obligation of Georg Fischer after the expiration of twelve (12) months from receipt of the Products by the end user or at the latest within eighteen (18) months of the Products being despatched by Georg Fischer.

15.7 In case of Products for use in domestic installations or in utilities
- Georg Fischer will assume the costs of dismantling the defective Product and restoring the damaged object up to CHF 1'000'000 per occurrence.
- warranty or damage claims - contrary to Section 15.6 – are time-barred five (5) years from the date of installation or seven (7) years from the production date, whichever is earlier.

16 Limitation of Liability

The rights and remedies of the customer shall be exclusively governed by these General Conditions of Supply and shall be in lieu of any remedies at law. All further claims for damages, reduction of the purchase price, termination of or rescission of the contract are excluded.
In no case whatsoever shall the customer be entitled to claim damages other than compensation for costs of remedying defects in the supplies. This in particular refers, but shall not be limited, to loss of production, loss of use, loss of orders, loss of profit, third party recovery claims and other direct or indirect or consequential damages.
This limitation of liability equally applies to the extent Georg Fischer is liable for acts or omissions of its employees or third parties engaged for the performance of its obligations. It does not apply in case unlawful intent or gross negligence on the part of Georg Fischer's management and in case of Georg Fischer's statutory liability, in particular under applicable product liability laws.

17 Severability

Should any term or clause of these General Conditions in whole or in part be found to be unenforceable or void, all other provisions shall remain in full force and effect and the unenforceable or void provision shall be replaced by a valid provision, which comes closest to the original intention of the unenforceable or invalid provision.

18 Place of Performance and Jurisdiction

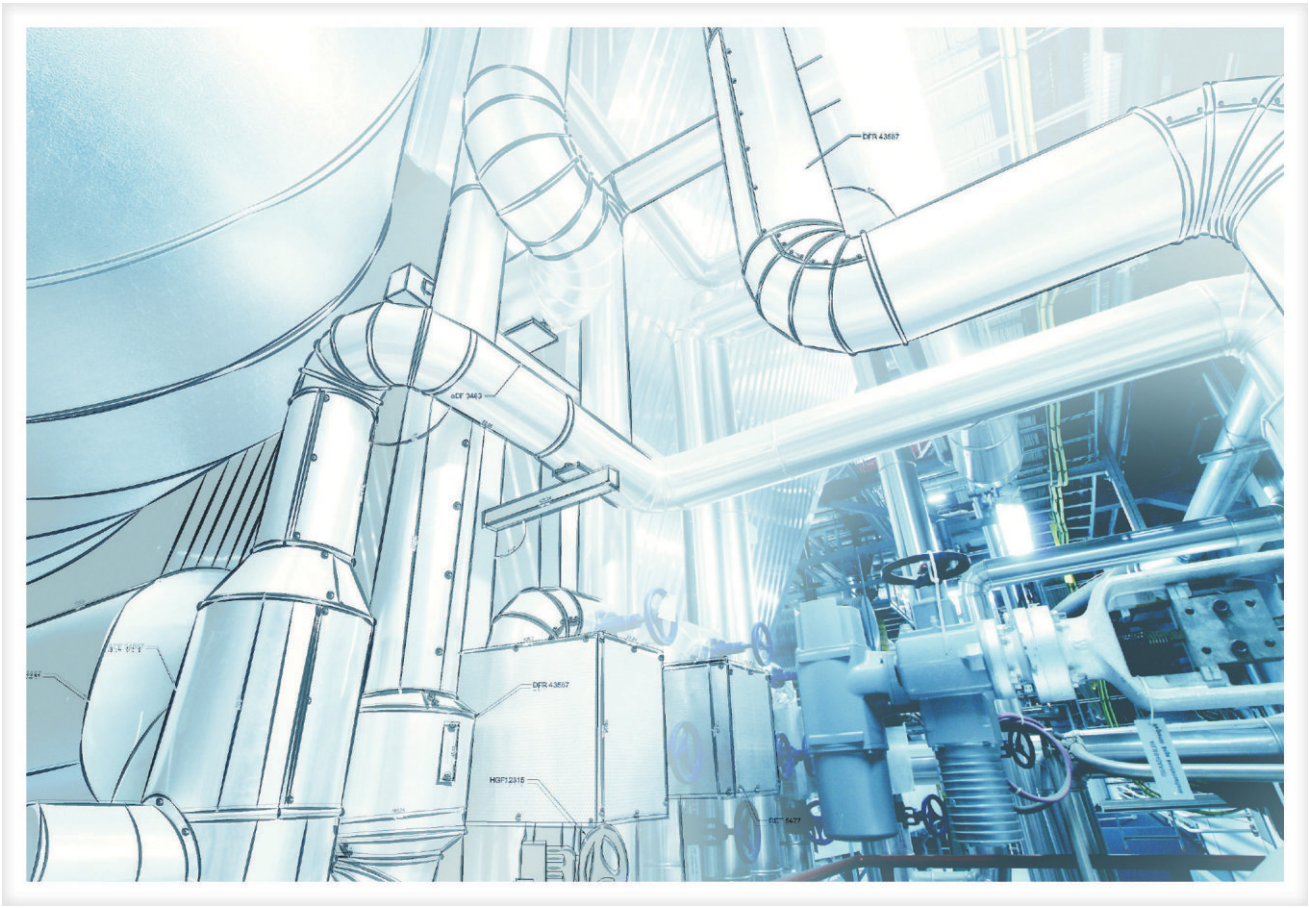
18.1 Place of performance for the Products shall be the Georg Fischer works from which the Products are despatched.

18.2 The contract shall be governed by Swiss law without regard to conflict of law provisions that would require the application of another law.

18.3 Any civil action based upon any alleged breach of this contract shall be filed and prosecuted exclusively in the courts of Schaffhausen, Switzerland.
Georg Fischer however reserves the right to file actions in any court having jurisdiction over controversies arising out of or in connection with the present contract.

03/2011

GF Africa



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