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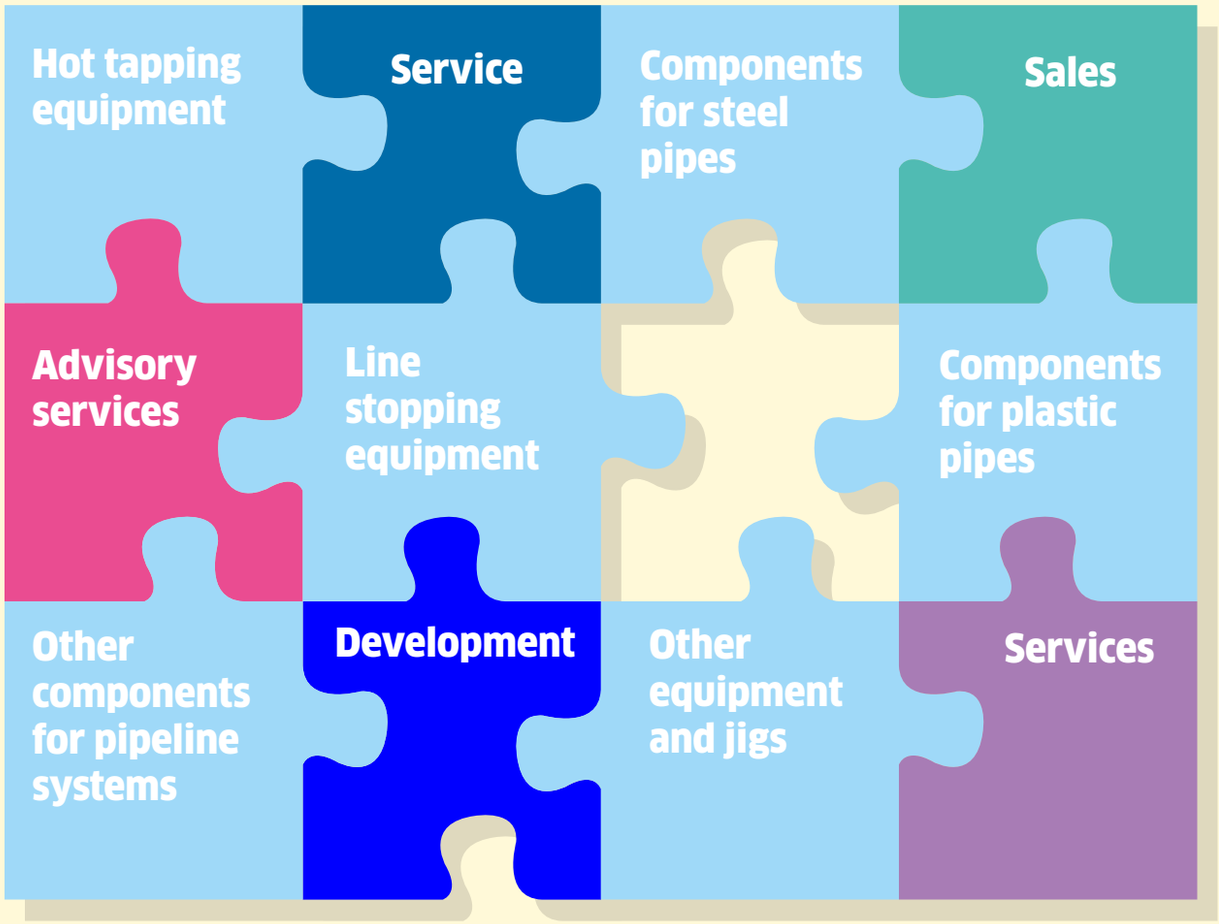
PIPE SYSTEM SERVICE SPECIALIST



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Comp. Reg. No. (IČO): 44678118

Dear business friends,

You are just reading the front page of our product catalogue, which will provide you with some basic information.

The catalogue contains an overview and basic information not only about our products and our equipment, but also about other products and components needed for service activities carried out on pipelines.

As this is a relatively extensive product range, we have divided the catalog into several categories and subcategories for better navigation. They are compiled according to technological and thematic groups.

The introductory page of each category contains a list of subcategories with their full content. Detailed content of the r elevant subcategory is contained in its introductory page.

The introductory pages of the individual categories, just like the introductory pages of the subcategories, are equipped with tabs.

This product catalogue is published in both printed and electronic versions and it is continuously supplemented and updated.

The most up-to-date version can be viewed or downloaded on our website at www.fastra.cz.

Its electronic version update on a multimedia medium is not carried out automatically; the up-to-date version of the catalogue will be delivered to you upon request, or you can download it from our website at www.fastra.cz.

This catalogue does not list and describe the service work on pipelines (such as hot tapping and plugging of pipelines under pressure of a medium in potentially explosive atmospheres, pipeline cut-outs, joints, etc.) which our workers provide to our customers as part of our services. Due to the wide range of work performed, it is necessary to inform us about your specific needs during your request for quotation.

Although we tried to provide you with as much information as possible, while compiling the catalogue, some of the information may not be sufficient for you, or you may not have found what you are looking for. In this case, do not hesitate to contact our sales department or company office.

Wishing you much success

fastra.

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CONTENT

1. HOT TAPPING AND DRILLING DEVICES

HOT TAPPING AND DRILLING DEVICES

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DRILLING DEVICES

KNS-F1

Shaped fittings
and T- Piece Drilling

DESCRIPTION AND APPLICATION

The KNS-F1 devices are chamber drilling systems used for the drilling of openings into pipelines with inner media positive pressure including but not limited to the following applications:

- temporary ballooning set pipeline closing through a drilled-in adapting piece and a closing fitting
- temporary closing of the pipeline by manually inserted balloons
- branch line drilling using drilling T-pieces

The steel drilling rod gets through a chamber provided with sealing elements. Its working section is adapted for the fixing of the drilling bit and the centering bore and the control section provided with a square ending that makes it possible for manual or machine driven drilling. The thrust arm ensures the axial shift and guiding of the drilling rod and its safe retraction after the drilling of the opening.

The KNS-F1 device may be delivered as a standard supply in the below described customized sets as may be required by the customers.

APPLICATION RANGE

Pipeline drilled diameter: no limit

Drilled opening diameter:
8 - 57 mm for steel pipes
8 - 56 mm for PE pipes

Drilled pipe material:
This depends on the used drilling bit and drilled material properties
(metal, plastic, asbestos-concrete etc.)

Media: Natural gas, water, non-aggressive gases or liquids. Other media should be consulted with the manufacturer.

Maximal pressure in the drilled pipeline:
up to 16 bar *

Working temperature: - 50 to + 70 °C **

* The maximum permitted positive pressure when drilling based on the type and set outfit.

* The bottom limit may be limited depending on measures taken to prevent freezing of condensate in the air system when using a compressed air motor drive, the upper limit may be increased based on consultation with the manufacturer.

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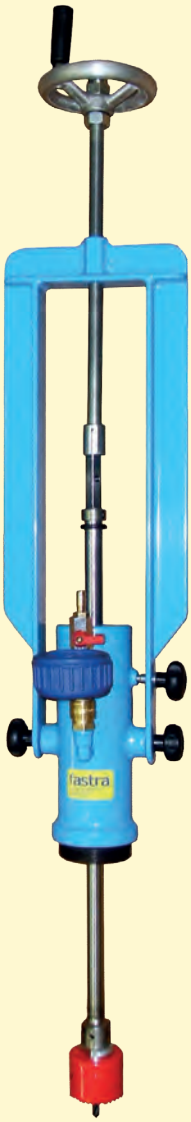
DRILLING DEVICES

1.1 Device KNS-F1

Set KNS-F1

The set is designated for the drilling of openings to pipelines made of steel or PE with internal positive media pressure using ballooning adapter with an outer thread 2 ½ " and ball closure. This set is configured as an accessory system to ballooning sets and therefore, the ball closure is not included. The set is supplied with basic accessories as specified below in the set content description.



RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening:
56 mm for PE pipeline
57 mm for steel pipeline

Drilled pipeline material:
Steel, PE, other material should be consulted with the manufacturer

Media:
Natural gas, water, non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline:*
Up to 6 bar

Working temperature:
Following the sheet 1.1

* The range may be modified using optional accessories (Following the sheet 1.1-2) to values specified in 1.1

TECHNICAL PARAMETERS

Connection thread dimension:
G2 ½ outer diameter to EN 228-1:2003

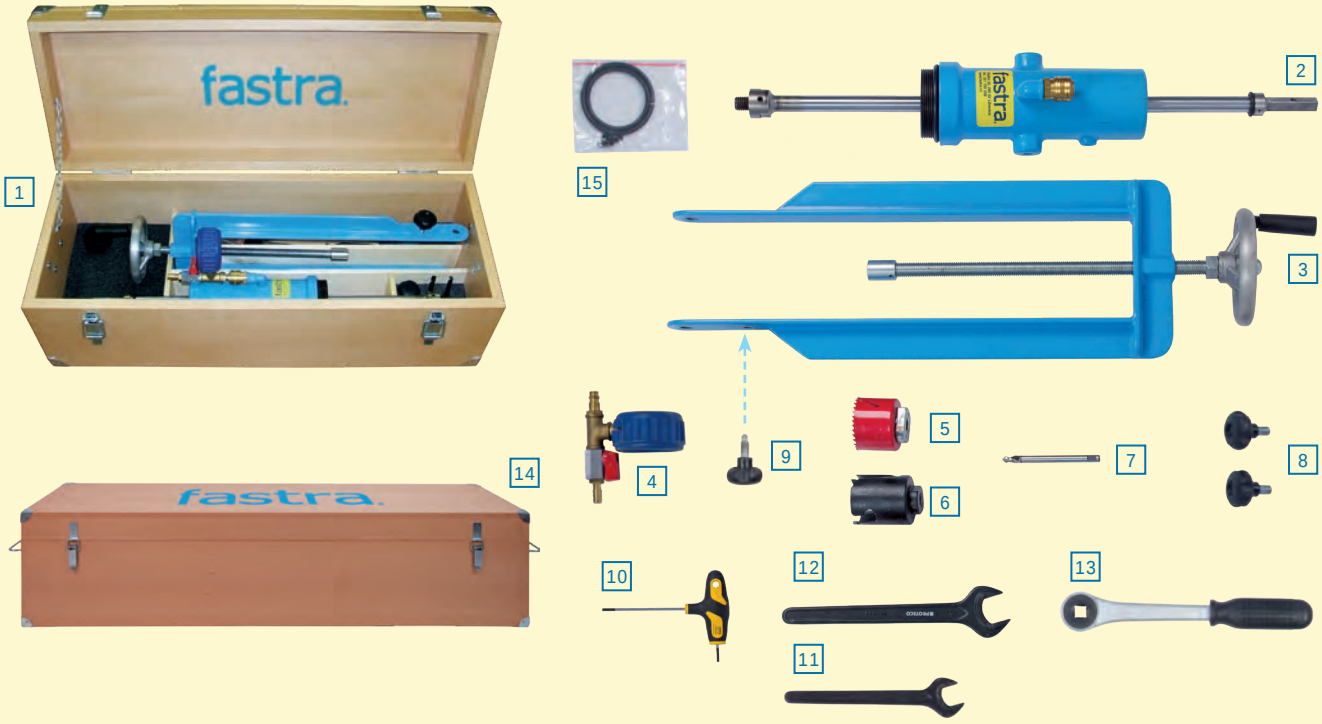
Overall length with rod fully retracted (measured from the contact end of connecting thread):
970 mm

Maximum drilling rod protrusion (measured from the contact end of connecting thread):
340 mm

Pressure arm width: 200 mm

Weight of assembled set / weight including transport box:
9 / 21 kg

Set KNS-F1



Item No.	Name	Catalogue No.	No. of units
1.	**Set KNS-F1**	**111-1100-001**	
	The set contains:		
2.	Chamber KNS-F1 with drilling rod	112-1100-001	1
3.	Support frame KNS F1	112-1100-003	1
4.	Pressure gauge with fitting 0-6 bar	142-2404-600	1
5.	Hole saw FKS 57	142-2200-057	2
6.	Hole saw FKPE 56	142-2207-056	1
7.	Centering drilling bit 8/100	142-2403-002	1
8.	Locking screw KNS-F1	112-1100-004	2
9.	Locking screw a KNS-F1	112-1100-005	1
10.	Allen wrench No. 3	142-2103-003	1
11.	Side wrench No. 22	142-2104-022	1
12.	Side wrench No. 27	142-2104-027	1
13.	Ratchet ½“	142-2103-001	1
14.	Transport box KNS-F1	112-1100-002	1
15.	Spare parts set KNS-F1	112-1100-006	1 set
	Accessories		
	Pressure gauge parts	sheet 1.4-2.4	
	Hole saws FKS (for steel)	sheet 1.4-2.2	
	Hole saws FKPE (for PE)	sheet 1.4-2.2	
	Centering drilling bit Ø 8	sheet 1.4-2.4	
	Motor drives	sheet 1.4-2.6	

Set KNS-F1 / NTL

The set is designated for drilling of openings in pipelines made of steel or PE with a media positive pressure through ballooning adapters with the outer metallic thread 2 ½ " or plastic outer thread 2 ¾. The set is not designed as a leak-proof system. The set contains basic accessories as specified below in the set contents description.

RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening: *
48 mm for PE pipeline
57 mm for steel pipeline

Drilled pipeline material:
Steel, PE, other material should be consulted with the manufacturer

Media:
Natural gas, other non-aggressive gases. Other media should be consulted with the manufacturer.

Maximum pressure in the drilled pipeline:
Up to 0.05 bar

Working temperature:
Following the sheet 1.1

* The range may be modified using optional accessories (Following the sheet 1.1-4) to values specified in the sheet 1.1.

TECHNICAL PARAMETERS

Connection thread dimension:
G2 ½ and G2 ¾ inner spec. EN 228-1:2003

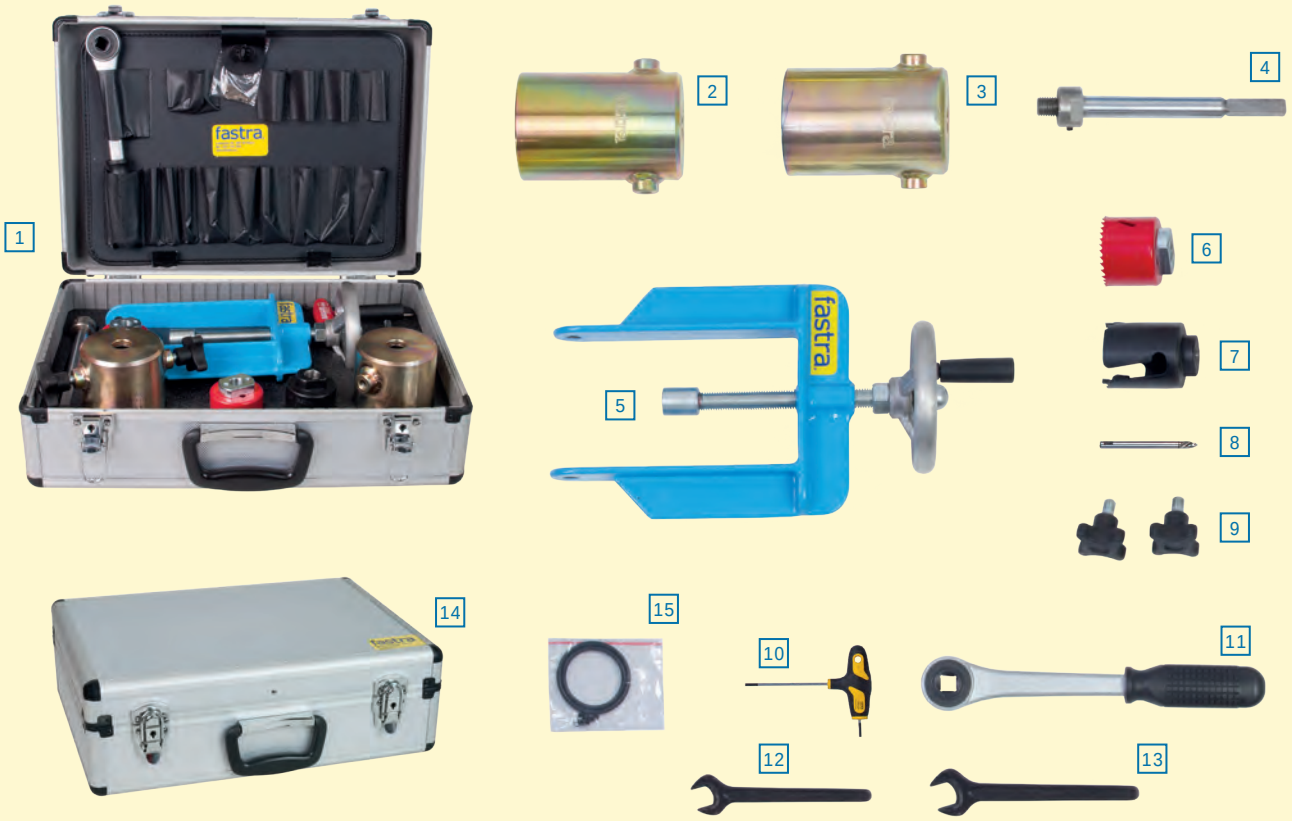
Overall length with rod fully retracted:
540 mm

Maximum drilling rod protrusion (measured from chamber edge):
0 mm

Pressure arm width:
200 mm

Weight of assembled set / weight including transport box:
4/9 kg

KNS-F1 / NTL set



Item No.	Name	Catalogue No.	No. of units
1.	**KNS-F1 / NTL set**	**111-2100-001**	
	The set contains		
2.	Chamber KNS-F1/NTL F2,5" – metal	112-2100-001	1
3.	Chamber KNS-F1/NTL F2,75"- plastic	112-2100-002	1
4.	Drilling rod 18/210 KNS-F1/NTL	142-2101-002	1
5.	Support frame KNS F1/NTL	112-2100-003	1
6.	Hole saw FKS 57	142-2200-057	2
7.	Hole saw FKPE 48	142-2207-048	1
8.	Centering drilling bit 8/100	142-2403-002	1
9.	Locking screw KNS-F1	112-1100-004	2
10.	Allen wrench No. 3	142-2103-003	1
11.	Ratchet ½"	142-2103-001	1
12.	Side wrench No. 22	142-2104-022	1
13.	Side wrench No. 27	142-2104-027	1
14.	Transport box KNS-F1/NTL	112-2100-004	1
15.	Spare parts set KNS-F1/NTL	112-2100-005	1 set
	Accessories		
	Hole saws FKS (for steel)	Sheet 1.4-2.2.	
	Hole saws FKPE (for PE)	Sheet 1.4-2.2	
	Centering drilling bit Ø 8	Sheet 1.4-2.4	

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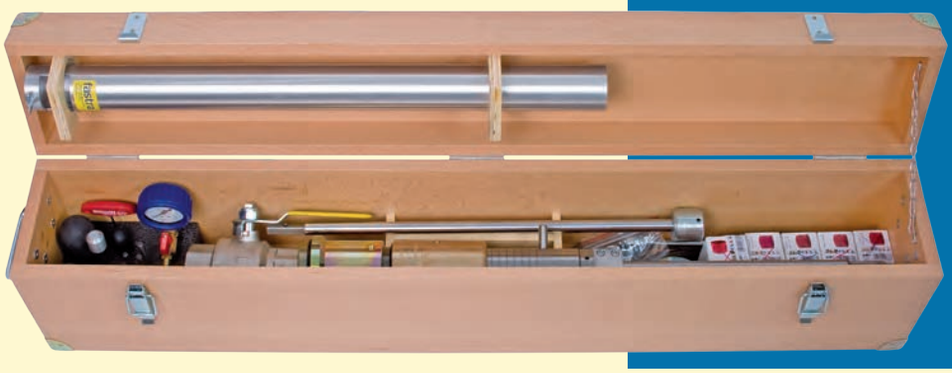
HOT TAP DEVICE

COMPACT-F1

Up to 16 bar

Drilling of openings, shaped fittings, T-pieces, branches, water supply connections and stoppling



APPLICATION AND DESCRIPTION

The device COMPACT F-1 can be used for special works on pipelines with a media positive pressure using leak-proof technologies.

Depending on their design, the devices are designated for:

a) Drilling – drilling into pipeline through drill-in adapting pieces and closing fittings or using prepared branch lines

b) Stoppling – temporary suspension of media flow in a steel pipeline with media positive pressure using special adapting piece and closing fitting.

The drilling rod gets through the drilled body with seals and axial displacement mechanism with a drilling lock movement mechanism. The rod is adapted in its working section for the fixing of the drilling bit and the centering pilot or a bracing cylinder (depending on the application option). The control part of the rod is provided with square ending piece allowing for either manual or machine drilling.

The drilling body has connection thread at the lower part.

The pipeline drilling and possible sealing of drilled opening should be executed using a closing fitting (for example a ball valve) and a special drill-in adapting piece (following the sheet the parts 4 and 5 of this catalogue).

The devices COMPACT F-1 up to 16 bar are designed and manufactured as kit systems that provide for a high level of variability. The device may be delivered as a below described set or individually set up sets based on customer´s requirements.

RANGE OF APPLICATION

a) Diameter of drilled pipeline: no limit

Diameter of drilled opening: 8 – 100 mm (depending on the set outfit) *

Drilled pipeline material:
This depends on the drilling bit used and drilled material properties (metal, plastic, asbestos etc.)

b) Diameter of the closed pipeline:
DN/ID 20 up to 50 mm (3/4” up to 2”)

Drilled pipeline material:
Welding steel, other materials should be consulted with the manufacturer.

Media:
Natural gas, water, non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline:
Up to 16 bar **

Working temperature:
-50 up to +70 °C ***

* In case of the use of an accessory system based on specific drilling condition (adapters, flanges, drilling bits etc.), openings up to the diameter of 125 mm may be drilled if consulted with the manufacturer.

** Maximum permitted positive pressure of the pipeline when drilling and stoppling depends on the type and outfit of the set

*** The bottom limit of the temperature range may be limited when using a compressed air drive for drilling depending on measures taken to prevent freezing of condensate in the compressed air system, the upper limit may be increased based on consultation with the manufacturer.

HOT TAP DEVICES

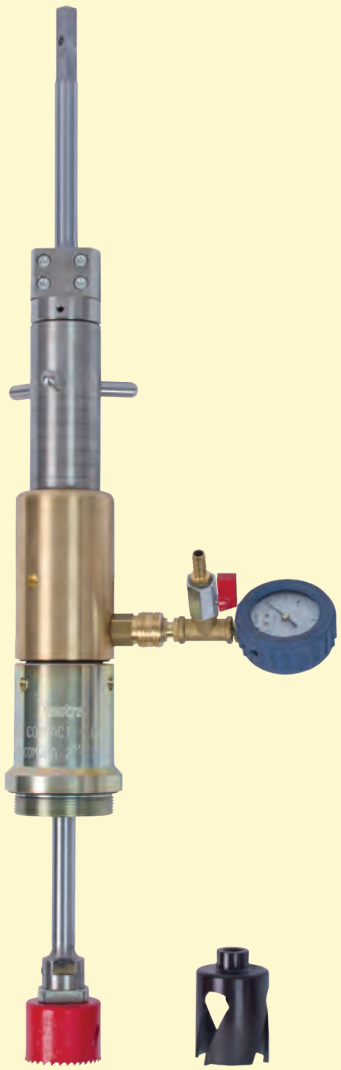
1.2 Device COMPACT-F1 up to 16 bar

COMPACT F-1 sets up to 16 bar

1.2-1.1	Set COMPACT-F1
1.2-1.2	Set COMPACT-F1/PE
1.2-1.3	Set COMPACT-F1/T-piece
1.2-1.4	Set COMPACT-F1/PE-STEEL
1.2-1.5	Set COMPACT-F1/STOPL
1.2-2	**Optional accessories COMPACT-F1 up to 16 bar**

Set COMPACT-F1

The set is designated for drilling into pipelines made of steel or PE as under positive media pressure through ballooning adapting pieces with an outer metallic thread 2 ½ " or plastic outer thread 2 ¾. The set is set up as an accessory system to the ballooning set and normally it is delivered without the transport package. The transport box may be delivered if so requested by the customer. The set is supplied including basic accessories as specified below in the set content description.



RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening: *

56 mm for PE pipeline

57 mm for steel pipeline

Drilled pipeline material:

Steel, PE, other material should be consulted with the manufacturer

Media: Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *

Up to 4 bar

Working temperature: Following the sheet 1.2

* The range may be modified using optional accessories (Following the sheet 1.2-2) to values specified in 1.2

TECHNICAL PARAMETERS

Outer thread connection of drilled-in body:
G2"outer diameter to EN 228-1:2003

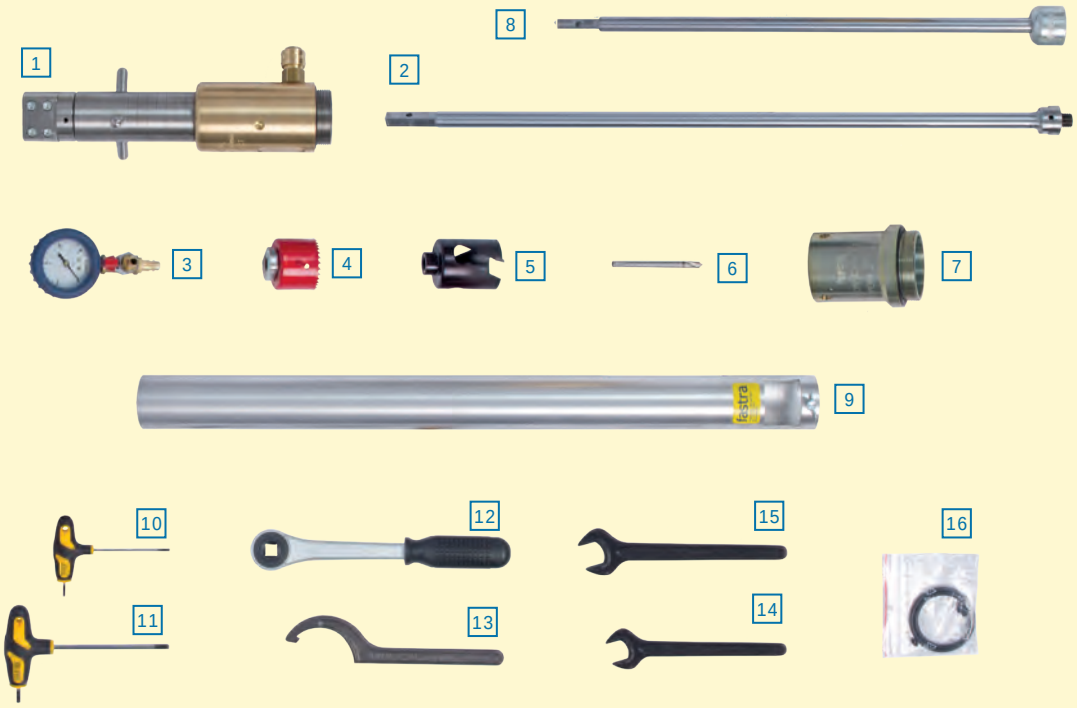
Overall length with drilling rod fully retracted (without chamber being assembled):
730 mm

Maximum drilling rod protrusion with assembled chamber F-M 2"-2.5" L95 (measured from the contact surface of the of connection thread):
270 mm (+ 70 mm by screwing in the movement body)

Maximum width:
200 mm

Weight of assembled set:
8 kg

Set COMPACT-F1



Item No.	Name	Catalogue No.	No. of units
	Set COMPACT-F1	**121-1100-001**	
	The set contains		
1.	Drilling body COMPACT-F1	122-2000-001	1
2.	Drilling rod 18/750	142-2101-075	1
3.	Pressure gauge with corner fitting 0-4 bar	142-2405-400	1
4.	Hole saw FKS 57	142-2200-057	2
5.	Hole saw FKPE 56	142-2207-056	1
6.	Centering drilling bit 8/100	142-2403-002	2
7.	Chamber F-M 2”-2.5” L95	142-2401-002	1
8.	Plug rod with internal square	142-2502-001	1
9.	Protective case	122-2000-003	1
10.	Allen wrench No. 3	142-2103-003	1
11.	Allen wrench No. 5	142-2103-005	1
12.	Ratchet ½”	142-2103-001	1
13.	Hook wrench 75-80	142-2103-075	1
14.	Side wrench No. 22	142-2104-022	1
15.	Side wrench No. 27	142-2104-027	2
16.	Spare parts set COMPACT-F1	122-2000-004	1 set

Note: The set is supplied without transport box.

Set COMPACT-F1 / PE

The set is designated for drilling of openings in pipelines made of PE through a branch pipe installed. A flanged end mechanical adapter is assembled to the pipeline in order to fix the drilling set. The drilling operation may be done either through a ball valve installed on the branch pipe that will be closed after drilling of the pipe or, should it be possible with regard to the pipeline material, the branch line may be squeezed by a proper pressing unit after the pipeline drilling or the pipeline may be closed in any other proper way for instance by means of ballooning. The set contains basic accessories as specified in the below set content description.

RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening: *
56, 65 and 86 mm

Drilled pipeline material:
PE, other material should be consulted with the manufacturer

Media: Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *
Up to 4 bar

Working temperature: Following the sheet 1.2

* The range may be modified using optional accessories (Following the sheet 1.2-2) to values specified in 1.2

TECHNICAL PARAMETERS

Dimension of the outer connection thread of drill-in body:
G2" outer diameter to EN 228-1:2003

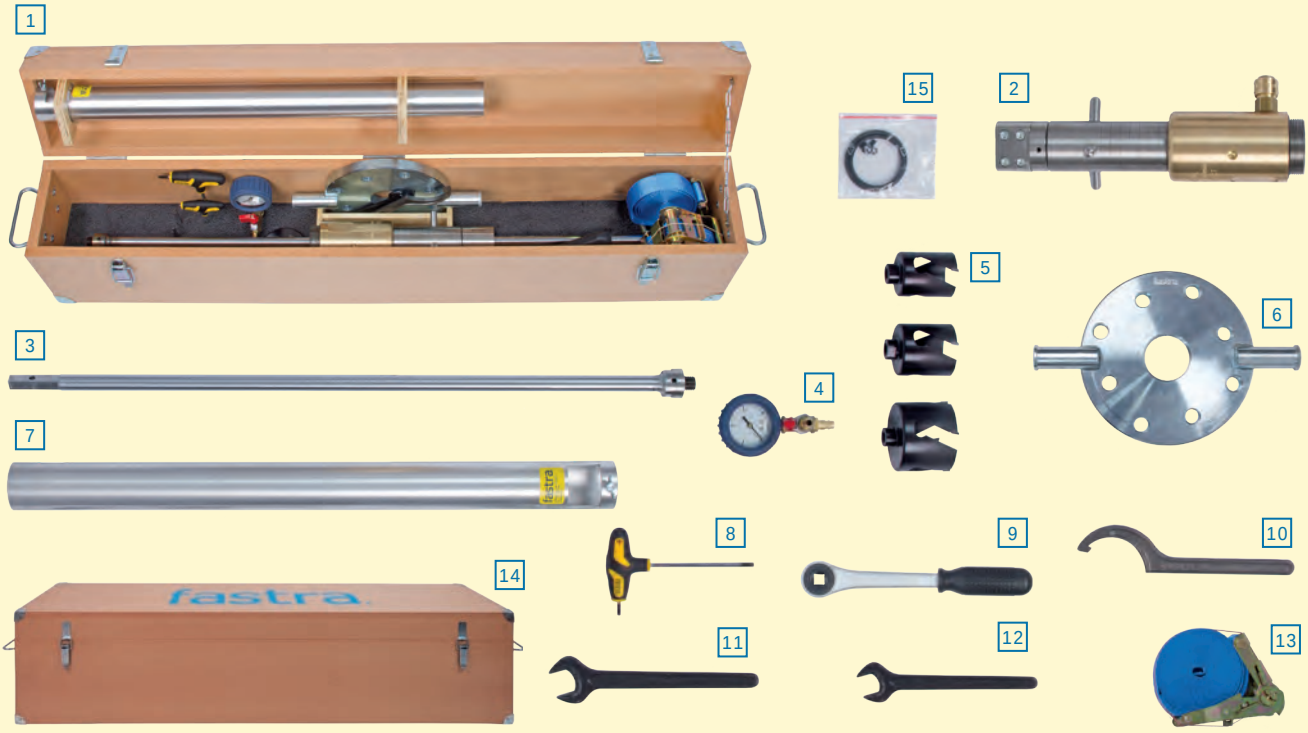
Overall length with the rod fully retracted (without flanged adapter attached):
1080 mm

Maximum drilling rod protrusion with flanged adapter attached (measured from the flange contact surface):
690 mm (+ 70 mm with movement body fully screwed in)

Maximum width (from the drilling rod axis):
200 mm

Weight of assembled set / weight including transport box: 13 / 32 kg

Set COMPACT-F1 / PE



Item No.	Catalogue No.	Name	No. of units
1.	**Set COMPACT-F1 / PE**	**121-1200-001**	
	The set contains		
2.	Drilling body COMPACT-F1 PN 16	122-2000-001	1
3.	Drilling rod 18/750	142-2101-110	1
4.	Pressure gauge with corner fitting 0-4 bar	142-2405-400	1
5.	Hole saw FKPE 56	142-2207-056	1
5.	Hole saw FKPE 65	142-2207-065	1
5.	Hole saw FKPE 86	142-2207-086	1
6.	Flange Adapter COMPACT-F1/PE	142-2402-001	1
7.	Protective case	122-2000-003	1
8.	Allen wrench No. 5	142-2103-005	1
9.	Ratchet ½"	142-2103-001	1
10.	Hook wrench 75-80	142-2103-075	1
11.	Side wrench No. 22	142-2104-022	1
12.	Side wrench No. 27	142-2104-027	1
13.	Ratchet strap 5 mm	122-2000-005	2
14.	Transport box COMPACT-F1	122-2000-002	1
15.	Spare parts set COMPACT-F1	122-2000-004	1 set

Set COMPACT-F1 / T

The set is designated for drilling into pipelines made of steel by means of branching T-pieces, necks etc. (Following the sheet the part 5 of this catalogue).The set includes basic accessories as specified below in the set content description.

RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of the drilled opening: *
35 and 46 mm

Drilled pipeline material:
Steel, other material should be consulted with the manufacturer

Media: Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *
Up to 4 bar

Working temperature: Following the sheet 1.2

* The range may be modified using optional accessories (Following the sheet 1.2-2) to values specified in 1.2

TECHNICAL PARAMETERS

The dimension of the connected thread of the drilled in body:
G2" outer diameter to EN 228-1:2003

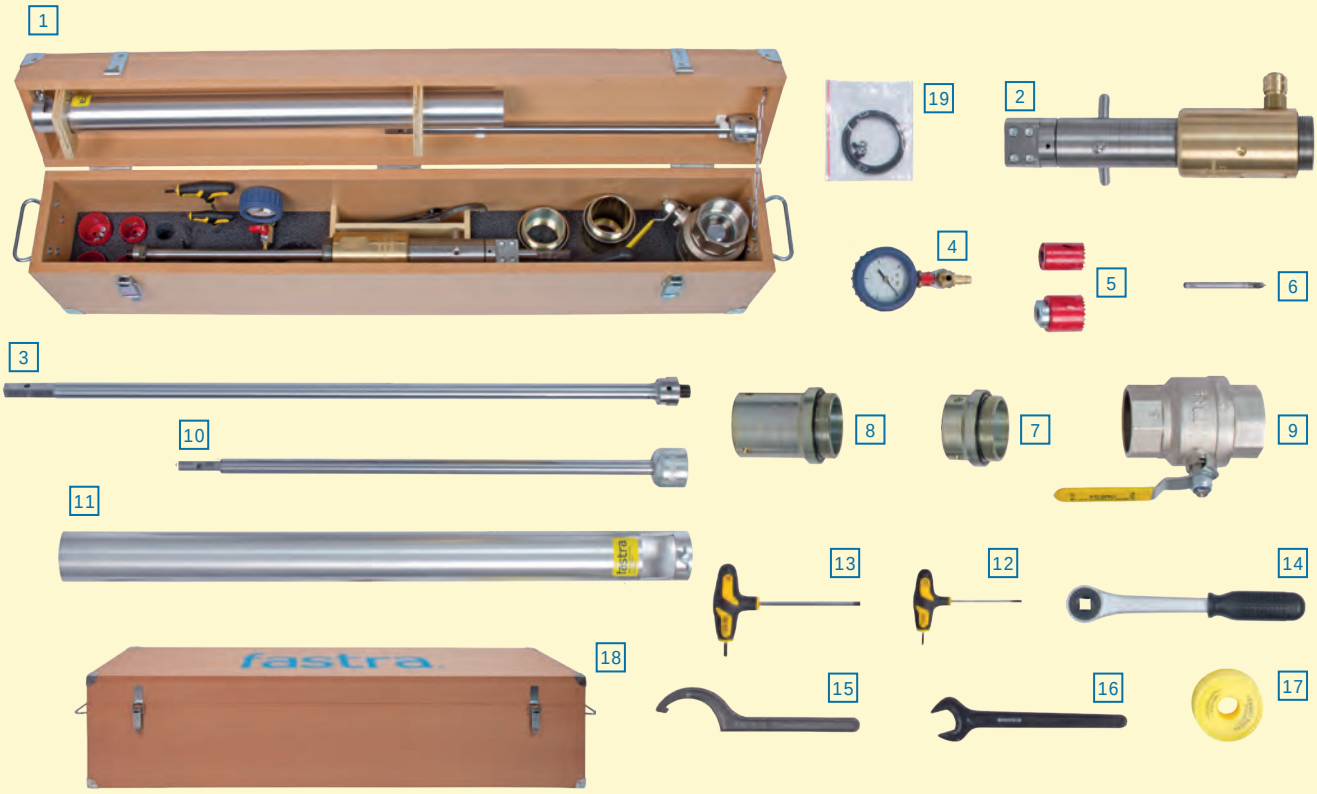
Overall length with the drilling rod fully retracted (without chamber attached):
730 mm

Maximum drilling rod protrusion with assembled chamber F-M 2"-2.5" L95 (measured from the contact surface of the connecting thread 2.5˝):
270 mm (+ 70 mm with the movement body fully screwed in)

Maximum width: 200 mm

Weight of assembled set / weight including transport box:
9 / 31 kg

Set COMPACT-F1 / T-piece



Item No.	Name	Catalogue No.	No. of units
1.	**Set COMPACT-F1 / T-piece**	**121-1300-001**	
	The set contains		
2.	Drilling body COMPACT-F1 PN 16	122-2000-001	1
3.	Drilling rod 18/750	142-2101-075	1
4.	Pressure gauge with corner fitting 0-4 bar	142-2405-400	1
5.	Hole saw FKS 35	142-2200-035	2
5.	Hole saw FKS 46	142-2200-046	2
6.	Centering drilling bit 8/100	142-2403-002	2
7.	Chamber F-M 2”-2.5” L42	142-2401-001	1
8.	Chamber F-M 2”-2.5” L95	142-2401-003	1
9.	Ball valve FF2.5” PR 65	212-2010-004	1
10.	Plugging rod with inner square	142-2502-001	1
11.	Protective case	122-2000-003	1
12.	Allen wrench No. 3	142-2103-003	1
13.	Allen wrench No. 5	142-2103-005	1
14.	Ratchet ½”	142-2103-001	1
15.	Hook wrench 75-80	142-2103-075	1
16.	Side wrench No. 27	142-2104-027	2
17.	Sealing tape PTFE GAS 15mm	212-2010-037	1
18.	Transport box COMPACT-F1	122-2000-002	1
19.	Spare parts set COMPACT-F1	122_2000-004	1 set

Set COMPACT-F1 / PE-STEEL

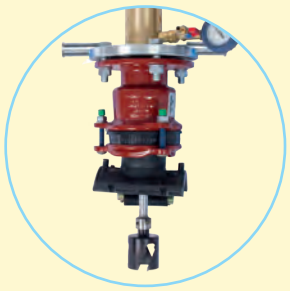
The set is designated for drilling into pipelines made of steel and PE as under medium positive pressure using:

- ballooning adapting pieces

- installed branch lines

- when installing branch pipes using branching T-pieces (Following the sheet the part 4 and 5 of this catalogue).

The set is supplied including basic accessories as specified in the set content description.



RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening: *
56, 65 and 86 mm for PE pipeline
35, 47 and 57 mm for steel pipeline

Drilled pipeline material:
PE, steel, other material should be consulted with the manufacturer

Media: Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *
Up to 4 bar

Working temperature: Following the sheet 1.2

* The range may be modified using optional accessories (Following the sheet 1.2-2) to values specified in 1.2

TECHNICAL PARAMETERS

Dimension of the drilled in body connection thread: G2" outer diameter to EN 228-1:2003

Overall length with the drilling rod fully retracted (without chamber attached):
Drilling rod 18/750 - 730 mm
Drilling rod 18/1100 - 1080 mm

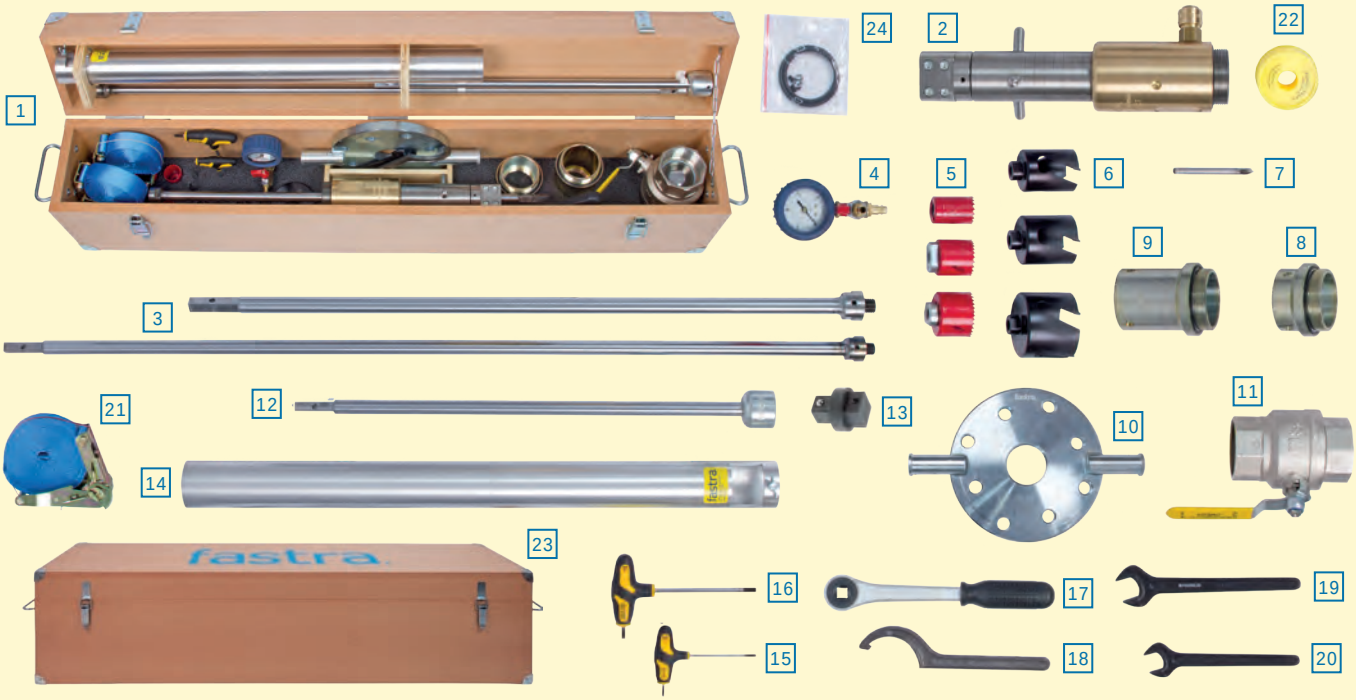
Maximum drilling rod protrusion with flanged adapter attached (measured from the flange contact surface):
Drilling rod 18/750 – 340 (+ 70 mm with movement body fully screwed in)
Drilling rod 18/1100 – 690 (+ 70 mm with movement body fully screwed in)

Maximum drilling rod protrusion with assembled chamber F-M 2"-2.5" L95 (measured from the contact surface of the connection thread 2.5˝):
Drilling rod 18/750 – 270 (+ 70 mm with movement body fully screwed in)
Drilling rod 18/1100 – 620 (+ 70 mm with movement body fully screwed in)

Maximum width (from drilling rod axis):
200 mm

Weight of assembled set (with flanged adapter) / weight including transport box:
9 (13)/ 31 kg

Set COMPACT-F1 / PE-STEEL



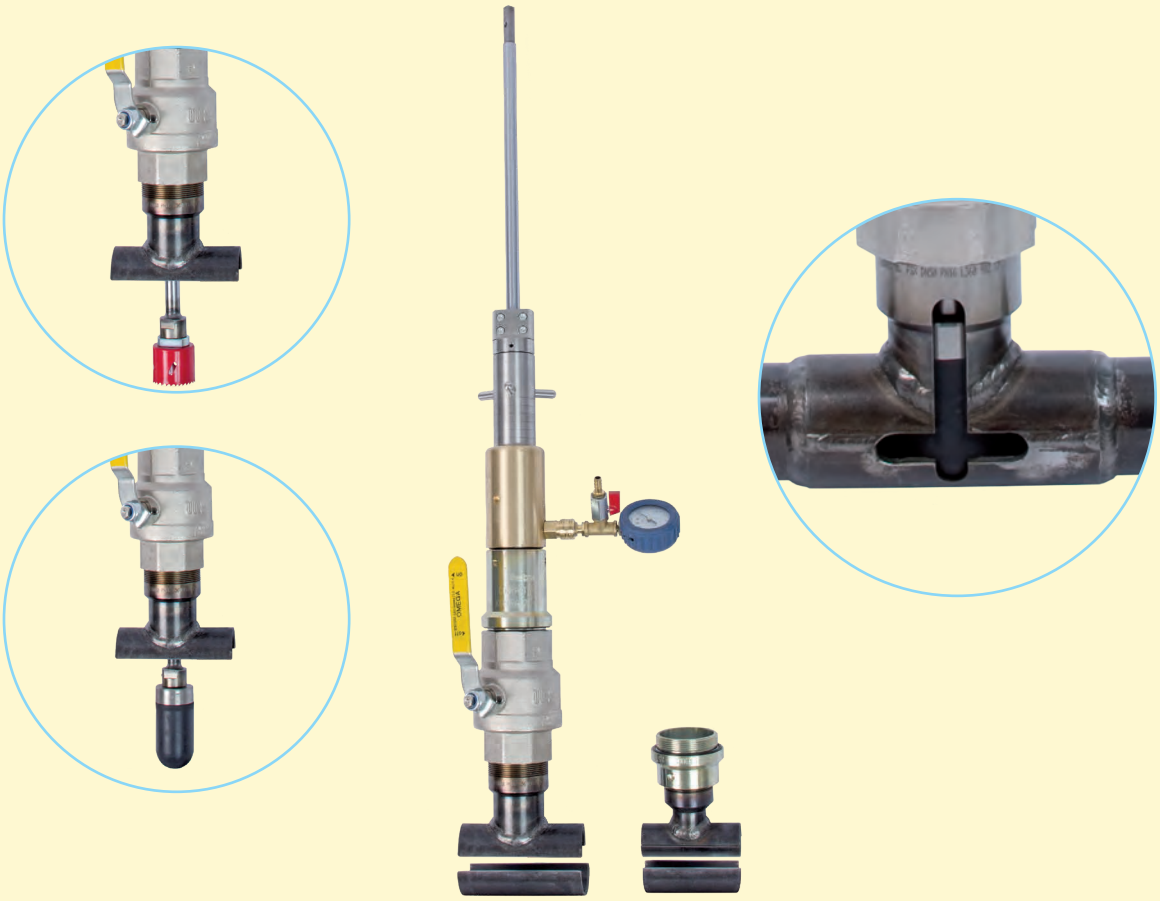
Item No.	Name	Catalogue No.	No. of units
1.	**1. Set COMPACT-F1 / PE-STEEL**	**121-1400-001**	
	The set contains		
2.	Drilling body COMPACT-F1 PN 16	122-2000-001	1
3.	Drilling rod 18/750	142-2101-075	1
3.	Drilling rod 18/1500	142-2101-150	1
4.	Pressure gauge with corner fitting 0-4 bar	142-2404-400	1
5.	Hole saw FKS 35	142-2200-035	2
5.	Hole saw FKS 46	142-2200-046	2
5.	Hole saw FKS 57	142-2200-057	2
6.	Hole saw FKPE 56	142-2207-056	1
6.	Hole saw FKPE 65	142-2207-065	1
6.	Hole saw FKPE 86	142-2207-086	1
7.	Centering drilling bit 8/100	142-2403-002	2
8.	Chamber F-M 2”-2.5” L42	142-2401-001	1
9.	Chamber F-M 2”-2.5” L95	142-2401-003	1
10.	Flange Adapter COMPACT-F1/PE	142-2402-001	1
11.	Ball valve FF2.5” PR 65	212-2010-004	1
12.	Plugging rod with inner square	142-2502-001	1
13.	Adapter for shapped fitting with inner square	142-2502-031	1
14.	Protective case	122-2000-003	1
15.	Allen wrench No. 3	142-2103-003	1
16.	Allen wrench No. 5	142-2103-005	1
17.	Ratchet ½”	142-2103-001	1
18.	Hook wrench 75-80	142-2103-075	1
19.	Side wrench No. 22	142-2104-022	1
20.	Side wrench No. 27	142-2104-027	2
21.	Ratchet strap 5 mm	122-2000-005	2
22.	Sealing tape PTFE GAS 15mm	212-2010-037	1
23.	Transport box COMPACT-F1	122-2000-002	1
24.	Spare parts set COMPACT-F1	122-2000-004	1 set

Set COMPACT-F1 / STOPL

The set is designated for drilling of openings into pipelines made of steel for the temporary suspension of the media flow as under positive pressure using stoppling FS adapting pieces (following the sheet part 5 of this catalogue).

For the sake of inspection, de-aeration or de-gassing of a closed section (for instance in case of two-side closure), the set may be provided with stopplers and a de- aeration system– following the sheet part 1.4 of the catalogue.

The set contains basic accessories as specified in the set content description.



RANGE OF APPLICATION

a) Diameter of pipeline drilled: no limit

Diameter of drilled opening: *
20, 25, 35, 40, 51 mm

Drilled pipeline material:
Steel, other material should be consulted with the manufacturer

Diameter of closed pipeline:
DN/ID 25, 23, 40, 50 mm (1" up to 2")

Closed pipeline material:
Welding steel, other material should be consulted with the manufacturer

Media: Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *
Up to 4 bar

Working temperature:
Following the sheet 1.2

* The range may be modified using optional accessories (Following the sheet 1.2-2) to values specified in 1.2

TECHNICAL PARAMETERS

Dimension of the connection thread of the drilled-in body:
G2" outer diameter to EN 228-1:2003

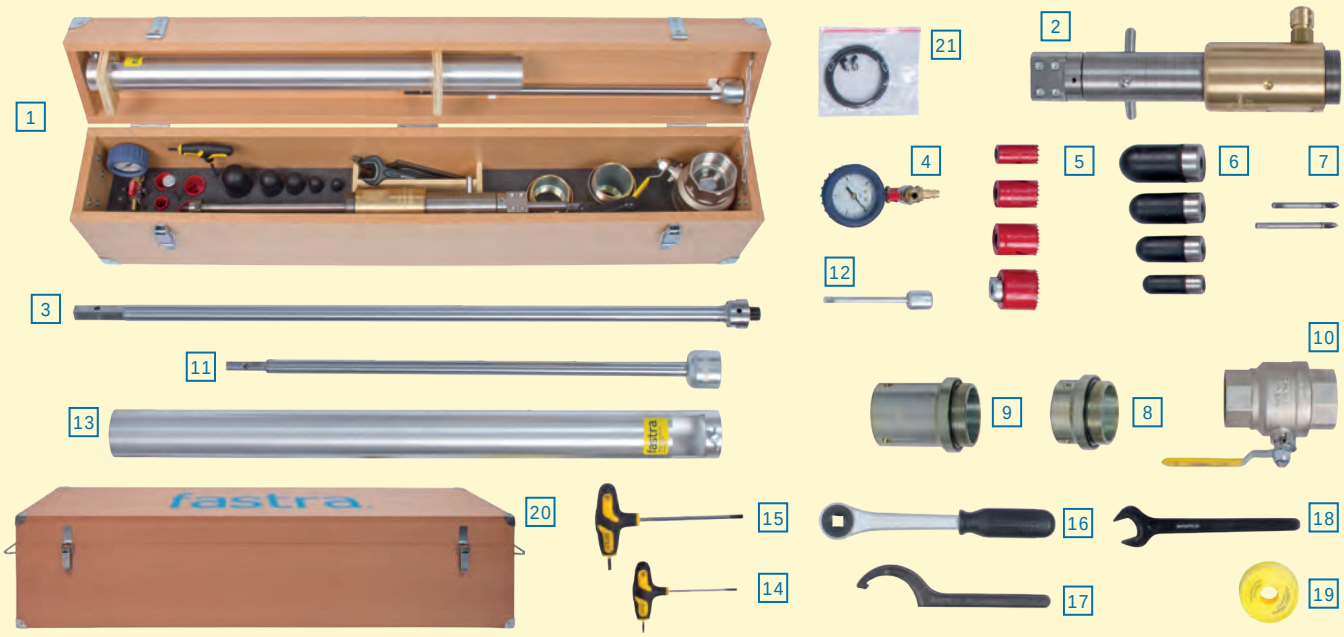
Overall length with the drilling rod fully retracted (without chamber attached):
730 mm

Maximum drilling rod protrusion with chamber assembled F-M 2"-2.5" L95 (measured from the contact surface of the connection thread):
270 mm (+ 70 mm with movement body fully screwed in)

Maximum width (from drilling rod axis):
200 mm

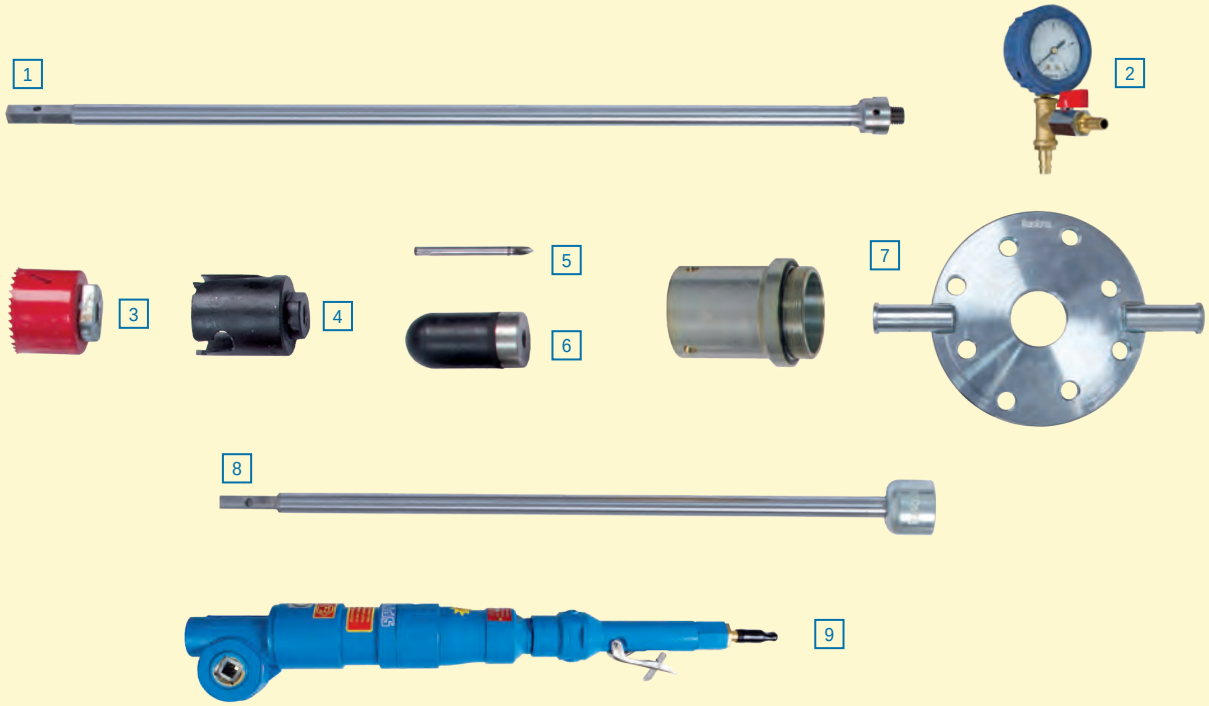
Weight of assembled set / weight including transport box:
9 / 38 kg

Set COMPACT-F1 / STOPL



Item No.	Name	Catalogue No.	No. of units
1.	**Set COMPACT-F1 / STOPL**	**121-1500-001**	
	The set contains		
2.	Drilling body COMPACT-F1 PN 16	122-2000-001	1
3.	Drilling rod 18/750	142-2101-075	1
4.	Pressure gauge with corner fitting 0-4 bar	142-2405-400	1
5.	Hole saw FKS 25	142-2200-025	2
5.	Hole saw FKS 35	142-2200-035	2
5.	Hole saw FKS 40	142-2200-040	2
5.	Hole saw FKS 51	142-2200-051	2
6.	Stoppler 1”	142-2501-002	1
6.	Stoppler 5/4”	142-2501-003	1
6.	Stoppler 6/4”	142-2501-004	1
6.	Stoppler 2”	142-2501-005	1
7.	Centering drilling bit 8/80	142-2403-001	2
7.	Centering drilling bit 8/100	142-2403-002	2
8.	Chamber F-M 2”-2.5” L42	142-2401-001	1
9.	Chamber F-M 2”-2.5” L95	142-2401-003	1
10.	Ball valve FF2.5” PR 65	212-2010-004	1
11.	Plugging rod with inner square	142-2502-001	1
12.	Magnet 24/135	122-2000-006	1
13.	Protective case	122-2000-003	1
14.	Allen wrench No. 3	142-2103-003	1
15.	Allen wrench No. 5	142-2103-005	1
16.	Ratchet ½”	142-2103-001	1
17.	Hook wrench 75-80	142-2103-075	1
18.	Side wrench No. 27	142-2104-027	2
19.	Sealing tape PTFE GAS 15mm	212-2010-037	1
20.	Transport box COMPACT-F1	122-2000-002	1
21.	Spare parts set COMPACT-F1	122-2000-004	1 set

Optional accessories COMPACT-F1 up to 16 bar



Item No.	Name	Catalogue No.
1.	Drilling rods	sheet 1.4-2.1
2.	Pressure gauge parts	sheet 1.4-2.4
3.	Drilling bit FKS (for steel)	sheet 1.4-2.2
4.	Drilling bits FKPE (for PE)	sheet 1.4-2.2
5.	Centering pilots Ø8	sheet 1.4-2.4
6.	Stopplers	sheet 1.4-2.5
7.	Chambers, adapters, fittings	sheet 1.4-2.4
8.	Plug rods	sheet 1.4-2.5
9.	Motor drives	sheet 1.4-2.6

NOTES

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HOT TAP DEVICES

COMPACT - F1
Up to 40 bar

APPLICATION AND DESCRIPTION

The device COMPACT F-1 may be used for special works on pipelines as under media positive pressure.

Pipelines are drilled using closing fittings.

The drilling rod gets through the drilling body with sealing elements axial shift and drilling rod locking mechanism. In its working part, the drilling rod is adapted for the fixing of the drilling bit and a centering pilot. In its control sections, it is provided with a square end that allows for manual or machine drilling.

The drilling body has in its bottom part a special ending flange with openings for the fixing of a stabilizing frame and for the mounting of the drilling body to the flange or adapter chamber. The stabilization frame provides for the guiding of the drilling rod and its safe retraction after the completion of the drilling of the opening. If necessary, the guiding rods of the stabilization frame may be extended (following the sheet the sheet 1.3-2).

The devices are designed so that all works including the closing of a drilled opening in the pipeline could be executed without any media leaks.

The device COMPACT F-1 up to 40 bar is designed and manufactured as a kit system that allows for a high level of variability. Normally, it is supplied as the below described sets or customized sets individually set up base on customer´s requirements.

RANGE OF APPLICATION

Diameter of drilled pipeline: no limit

Diameter of drilled opening:
18 – 200 mm (depending on the set outfit) *

Drilled pipeline material: This depends on the used drilling bit and drilled material properties (metal, plastic, asbestos- concrete etc.)

Media:
Natural gas, water, non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline:
Up to 40 bar **

Working temperature:
-50 up to +70 °C ***

* In case of use of accessory systems with regard to specific drilling conditions (adapting flanges, drilling bits etc.), based on consultation with the manufacturer, it is possible to drill openings up to the diameter of 480 mm.

** The bottom limit of the temperature range may be limited depending on measures taken to prevent freezing of condensate in the air system when using a compressed air motor drive, the upper limit may be increased based on consultation with the manufacturer

HOT TAP DEVICE

1.3 Device COMPACT-F up to 40 bar

COMPACT F-1 sets up to 40 bar

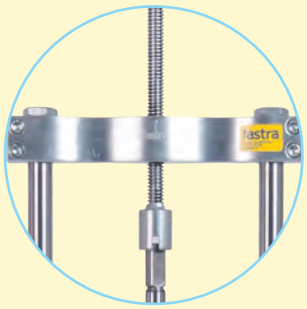
1.3-1.1 Set COMPACT-F1/VT

1.3-2 **Optional accessories COMPACT-F1 up to 40 bar**

Set COMPACT-F1 / VT

The set is designated for the drilling of openings in pipelines made of steel as under media positive pressure using ballooning adapters or flanged necks of respective pressure class (see the part 1.4 a 4.2 of the catalogue).

The set contains basic accessories as specified in the set content description.



RANGE OF APPLICATION

Diameter of pipeline drilled: no limit

Diameter of drilled opening: *
76 mm for steel pipeline

Drilled pipeline material:
Steel, other material should be consulted with the manufacturer

Media:
Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline: *
Up to 40 bar

Working temperature:
Following the sheet 1.3

* The range may be modified using optional accessories (Following the sheet 1.3-2) to values specified in 1.3

TECHNICAL PARAMETERS

Connecting flange (number, diameter and opening spacing):
DN80 PN42 to. EN 1092-1:2008

Overall length with the drilling rod fully retracted (without chamber attached):
1500 mm

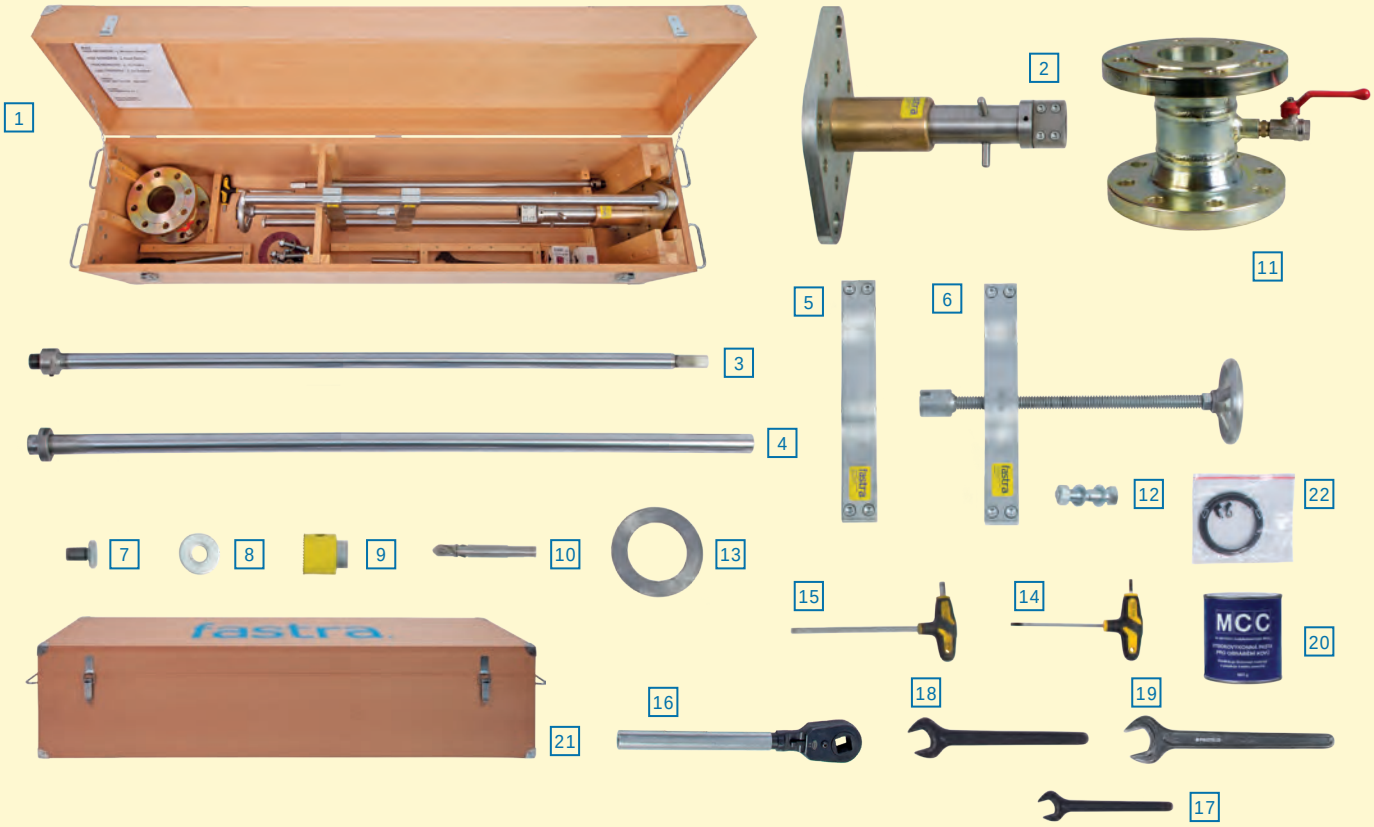
Maximum drilling rod protrusion with chamber assembled PN40 DN80-DN80 L170 attached (measured from the chamber contact surface):
390 (+ 90 mm with movement body fully screwed in)

Stabilizing frame width: 350 mm

Support arm screw moving range:
340 mm

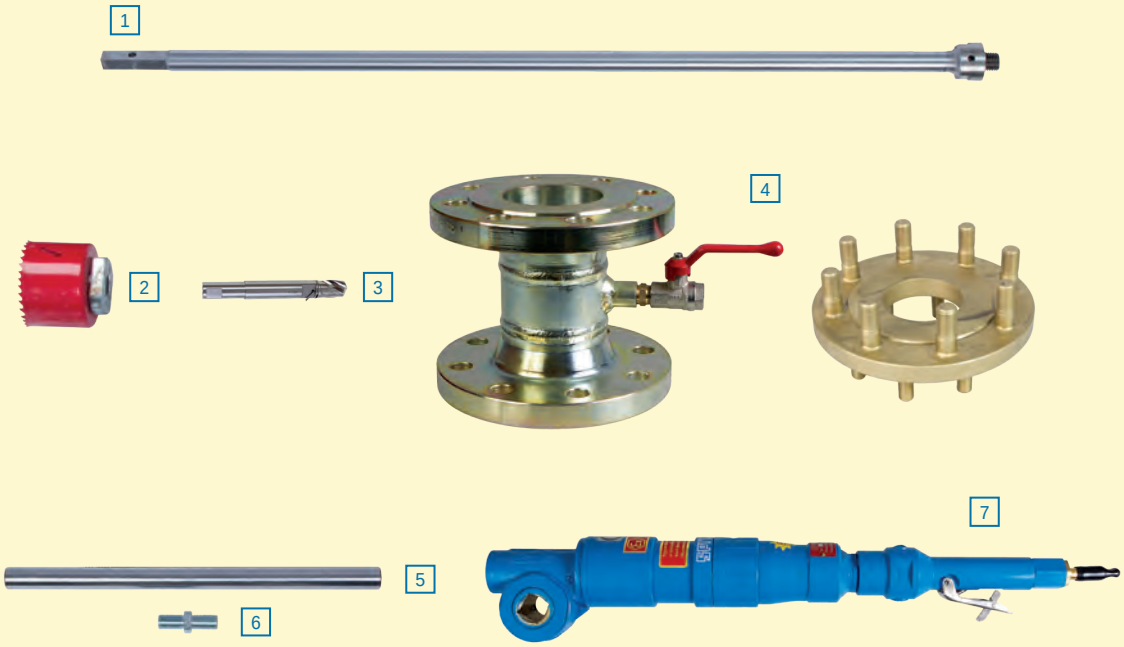
Weight of assembled set / weight including transport box:
62 / 85 kg

Set COMPACT-F1 / VT



Item No.	Name	Catalogue No.	No. of units
1.	**Set COMPACT-F1 / VT**	**131-1100-001**	
	The set contains		
2.	Drilling body COMPACT-F1 PN 40	132-2000-001	1
3.	Drilling rod 25/1000	142-2102-100	1
4.	Guiding rod	132-2000-002	2
5.	Centering support	132-2000-003	1
6.	Support	132-2000-004	1
7.	Locking screw for guide rod	132-2000-005	4
8.	Washer for locking screw	132-2000-006	2
9.	Hole saw FKV 76	142-2303-076	2
10.	Centering drilling bit 18/145	142-2403-022	2
11.	Chamber PN40 DN80-DN80 L170	142-2402-052	1
12.	Bolt, nut, washer 16/75	132-2000-007	8
13.	Seal - ring DN80 PN40	502-0140-080	3
14.	Allen wrench No. 4	142-2103-004	1
15.	Allen wrench No. 8	142-2103-008	1
16.	Ratchet ¾"	142-2103-002	1
17.	Side wrench No. 24	142-2104-024	2
18.	Side wrench No. 32	142-2104-032	1
19.	Side wrench No. 36	142-2104-036	2
20.	Cutting paste	132-2000-008	1
21.	Transport box COMPACT-F1/VT	132-2000-009	1
22.	Spare parts set COMPACT-F1/VT	132-2000-010	1 set

Optional accessories COMPACT-F1 up to 40 bar



Item No.	Name	Catalogue No.
1.	Drilling rods	sheet 1.4-2.1
2.	Hole saw FKV (for steel)	sheet 1.4-2.3
3.	Centering drilling bits Ø18	sheet 1.4-2.4
4.	Chambers, adapters, fittings	sheet 1.4-2.4
5.	Guide rod extension L500	132-2000-012
6.	Guide rod connecting bolt	132-2000-011
7.	Motor drives	sheet 1.4-2.6

Note:

Guiding rod extension (No. 5) is to be used for the extension of standard guiding rods of the set COMPACT-F1/VT (sheet 1.2-.1.1 No. 4) when using drilling rods 1400 mm and longer.

NOTES

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DRILLING DEVICES

PARTS, ACCESSORIES AND OPTIONAL ITEMS

- Set KOS-F1
- Drilling rods
- Hole saws
- Chambers, adapters, flanges
- Centering pilots
- Pressure gauge parts
- Stopplers
- Plug rods and adapters
- Motor drives
- Mechanical adapters

APPLICATION AND DESCRIPTION

Elements and accessories to pipeline drilling devices and systems are used to complete and extend the range of the application of individual drilling sets, devices and systems.

DRILLING DEVICES

1.4 PARTS, ACCESSORIES AND OPTIONAL ITEMS

Sets

1.4-1.1 Set KOS-F1

- drilled opening deburring

Parts, accessories and optional items

1.4-2.1 Drilling rods

1.4-2.2 Hole saws for COMPACT-F1 up to 16 bar

1.4-2.3 Hole saws for COMPACT-F1 up to 40 bar

1.4-2.4 Chambers, adapters, flanges, centering pilots, pressure gauge parts

1.4-2.5 Stopplers, plug rods and adapters, mechanical adapters

1.4-2.6 Motor drives

Set KOS-F1

The set is designated to remove sharp edges, chips and splinters of steel pipes (deburring) after their drilling using ballooning adapting pieces.

RANGE OF APPLICATION

Deburred opening diameter:
57 mm

Deburred opening pipe material:
Steel, other material should be consulted with the manufacturer

Media:
Natural gas, water, other non-aggressive gases or liquids. Other media should be consulted with the manufacturer

Maximum pressure in the drilled pipeline:
Up to 4 bar (max. 16 bar – if completed with necessary equipment)

Working temperature:
-50 up to +70 °C *

* The bottom limit may be limited depending on measures taken to prevent freezing of condensate in the air system when using a compressed air motor drive.

TECHNICAL PARAMETERS

Dimension of the drilled body connection thread:
G2½" outer diameter to EN 228-1:2003

Overall length with the deburring device fully retracted (with pneumatic drive attached):
920 mm

Overall length with the plug rod fully retracted:
1120 mm

Maximum deburring device rod protrusion (measured from the contact surface of the connection thread 2.5˝): 240 mm

Maximum plug rod protrusion (measured from the contact surface of the connection thread 2.5˝):
360 mm

Maximum width: 320 mm

Weight including transport box: 14 kg

Set KOS-F1

Item No.	Name	Catalogue No.	No. of units
1.	**Set KOS-F1**	**141-1100-001**	
	The set contains		
2.	Chamber KOS-F1	142-1100-001	1
3.	Mechanical deburring device	142-1100-002	1
4.	Pressure gauge with fitting 0-4 bar	142-2404-400	1
5.	Flexible magnet L290	212-2010-025	1
6.	Allen wrench No. 3	142-2103-003	1
7.	Deburrer pneumatic drive – 1800 rpm	142-2600-003	1
8.	Plugging rod KOS-F1	142-1100-003	1
9.	Transport box KOS-F1	142-1100-004	1
10.	Spare parts set KOS-F1	142-1100-005	1 set
	Spare parts		
11.	Deburring knives- set	212-2010-101	

DRILLING RODS COMPACT-F1 UP TO 16 BAR

Name	Catalogue No.
Drilling rod 18/750	142-2101-075
Drilling rod 18/800	142-2101-080
Drilling rod 18/1100	142-2101-110
Drilling rod 18/1500	142-2101-150
Drilling rod 18/1800	142-2101-180
Drilling rod 18/2000	142-2101-200
Drilling rod 18/2200	142-2101-220
Drilling rod 18/3000	142-2101-300

Drilling rods of different length and diameter may be manufactured on request.

DRILLING RODS COMPACT-F1 UP TO 40 BAR

Name	Catalogue No.
Drilling rod 25/700	142-2102-070
Drilling rod 25/900	142-2102-090
Drilling rod 25/1000	142-2102-100
Drilling rod 25/1400	142-2102-140
Drilling rod 25/1500	142-2102-150
Drilling rod 25/1700	142-2102-170
Drilling rod 25/2000	142-2102-200

Drilling rods of different length and diameter may be manufactured on request.

NOTES

HOLE SAWS for COMPACT - F1 up to 16 bar

HOLE SAWS FOR STEEL - TYPE FKS

Hole saw for standard durability life

Diameter [mm]	Name	Catalogue No.
17	Hole saw FKS 17	142-2200-017
21	Hole saw FKS 21	142-2200-021
24	Hole saw FKS 24	142-2200-024
25	Hole saw FKS 25	142-2200-025
27	Hole saw FKS 27	142-2200-027
29	Hole saw FKS 29	142-2200-029
30	Hole saw FKS 30	142-2200-030
32	Hole saw FKS 32	142-2200-032
35	Hole saw FKS 35	142-2200-035
38	Hole saw FKS 38	142-2200-038
40	Hole saw FKS 40	142-2200-040
41	Hole saw FKS 41	142-2200-041
44	Hole saw FKS 44	142-2200-044
46	Hole saw FKS 46	142-2200-046
48	Hole saw FKS 48	142-2200-048
51	Hole saw FKS 51	142-2200-051
52	Hole saw FKS 52	142-2200-052
54	Hole saw FKS 54	142-2200-054
57	Hole saw FKS 57	142-2200-057
65	Hole saw FKS 65	142-2200-065
70	Hole saw FKS 70	142-2200-070
73	Hole saw FKS 73	142-2200-073
76	Hole saw FKS 76	142-2200-076
79	Hole saw FKS 79	142-2200-079
86	Hole saw FKS 86	142-2200-086
89	Hole saw FKS 89	142-2200-089
92	Hole saw FKS 92	142-2200-092
95	Hole saw FKS 95	142-2200-095
98	Hole saw FKS 98	142-2200-098

HOLE SAWS FOR STEEL - TYPE FKS - B

Hole saws for enhanced durability life

Diameter [mm]	Name	Catalogue No.
See diameter saws FKS	Hole saw FKS XX - B	142-2203-0XX

XX - Diameter hole saw [mm]

Hole saws tape FKS and FKS - B hole depth up to 35 mm.
Hole saws of different diameter and, as the case may be, for other drilling depth may be manufactured on request.

HOLE SAWS for COMPACT - F1 up to 16 bar

HOLE SAWS FOR PE – TYPE FKPE

Diameter [mm]	Name	Catalogue No.
22	Hole saw FKPE 22	142-2207-022
29	Hole saw FKPE 29	142-2207-029
38	Hole saw FKPE 38	142-2207-038
40	Hole saw FKPE 40	142-2207-040
48	Hole saw FKPE 48	142-2207-048
55,5	Hole saw FKPE 55.5	142-2207-055
56	Hole saw FKPE 56	142-2207-056
60	Hole saw FKPE 60	142-2207-060
65	Hole saw FKPE 65	142-2207-065
76	Hole saw FKPE 76	142-2207-076
79	Hole saw FKPE 79	142-2207-079
80	Hole saw FKPE 80	142-2207-080
86	Hole saw FKPE 86	142-2207-086

HOLE SAWS for COMPACT - F1 up to 40 bar

HOLE SAW FOR STEEL - TYPE FKV

Standard – hole depth up to 35 mm

Diameter [mm]	Name	Catalogue No.
57	Hole saw FKV 57	142-2303-057
65	Hole saw FKV 65	142-2303-065
76	Hole saw FKV 76	142-2303-076
79	Hole saw FKV 79	142-2303-079
86	Hole saw FKV 86	142-2303-086
89	Hole saw FKV 89	142-2303-089
95	Hole saw FKV 95	142-2303-095
98	Hole saw FKV 98	142-2303-098
114	Hole saw FKV 114	142-2303-114
127	Hole saw FKV 127	142-2303-127
133	Hole saw FKV 133	142-2303-133
140	Hole saw FKV 140	142-2303-140
152	Hole saw FKV 152	142-2303-152
168	Hole saw FKV 168	142-2303-168
177	Hole saw FKV 177	142-2303-177

Deep – hole depth up to 75 mm

Diameter [mm]	Name	Catalogue No.
57	Hole saw FKV 57-H	142-2305-057
65	Hole saw FKV 65-H	142-2305-065
76	Hole saw FKV 76-H	142-2305-076
79	Hole saw FKV 79-H	142-2305-079
86	Hole saw FKV 86-H	142-2305-086
89	Hole saw FKV 89-H	142-2305-089
95	Hole saw FKV 95-H	142-2305-095
98	Hole saw FKV 98-H	142-2305-098
114	Hole saw FKV 114-H	142-2305-114
127	Hole saw FKV 127-H	142-2305-127
133	Hole saw FKV 133-H	142-2305-133
140	Hole saw FKV 140-H	142-2305-140
152	Hole saw FKV 152-H	142-2305-152
168	Hole saw FKV 168-H	142-2305-168
177	Hole saw FKV 177-H	142-2305-177

Hole saws of different diameter and, as the case may be, for other hole depth may be manufactured on request.

NOTES

Chambers, adapters, flanges

Position No.	Name	Catalogue No.
1.	Chamber F-M 2“-2,5“ L42	142-2401-001
1.	Chamber F-M 2“-2,5“ L95	142-2401-003
2.	Chamber F-M 2“-2,5“ L95 with pressure relief	142-2401-004
1.	Chamber F-M 2,5“-2,5“ L70	142-2401-013
1.	Chamber F-M 2“-4“ L130	142-2401-041
1.	Chamber F-M 2“-4“ L180	142-2401-043
2.	Chamber F-M 2“-4“ L180 with pressure relief	142-2401-044
1.	Chamber F-M 4“-4“ L180	142-2401-053
5.	Chamber PN 16 DN80 - DN50 L170	142-2402-031
3.	Chamber PN 16 DN80 - DN80 L170	142-2402-032
5.	Chamber PN 16 DN80 - DN100 L170	142-2402-033
5.	Chamber PN 16 DN80 - DN125 L200	142-2402-034
5.	Chamber PN 16 DN80 - DN150 L200	142-2402-035
5.	Chamber PN 16 DN80 - DN200 L200	142-2402-036
6.	Chamber PN 16 DN80 - DN50 L170 with press. relief	142-2402-041
4.	Chamber PN 16 DN80 - DN80 L170 with press. relief	142-2402-042
6.	Chamber PN 16 DN80 - DN100 L170 with press. relief	142-2402-043
6.	Chamber PN 16 DN80 - DN125 L200 with press. relief	142-2402-044
6.	Chamber PN 16 DN80 - DN150 L200 with press. relief	142-2402-045
6.	Chamber PN 16 DN80 - DN200 L200 with press. relief	142-2402-046
6.	Chamber PN 40 DN80 - DN50 L170 with press. relief	142-2402-051
4.	Chamber PN 40 DN80 - DN80 L170 with press. relief	142-2402-052
6.	Chamber PN 40 DN80 - DN100 L170 with press. relief	142-2402-053
6.	Chamber PN 40 DN80 - DN125 L200 with press. relief	142-2402-054
6.	Chamber PN 40 DN80 - DN150 L200 with press. relief	142-2402-055
6.	Chamber PN 40 DN80 - DN200 L200 with press. relief	142-2402-056
7.	Adapter FL PN40 DN80 - 2,5“ M	142-2402-010
7.	Adapter FL PN40 DN80 - 2,5“ F	142-2402-011
8.	Adapter FL PN40 DN80 - 2,5“ M with pressure relief	142-2402-012
8.	Adapter FL PN40 DN80 - 2,5“ F with pressure relief	142-2402-013
7.	Adapter FL PN40 DN80 - 4“ M	142-2402-015
7.	Adapter FL PN40 DN80 - 4“ F	142-2402-016
8.	Adapter FL PN40 DN80 - 4“ M with pressure relief	142-2402-017
8.	Adapter FL PN40 DN80 - 4“ F with pressure relief	142-2402-018
9.	Flange PN16 SDN80 - SDN100	142-2402-071
9.	Flange PN16 SDN80 - SDN125	142-2402-072
9.	Flange PN16 SDN80 - SDN150	142-2402-073
9.	Flange PN16 SDN80 - SDN200	142-2402-074
9.	Flange PN40 SDN80 - SDN100	142-2402-091
9.	Flange PN40 SDN80 - SDN125	142-2402-092
9.	Flange PN40 SDN80 - SDN150	142-2402-093
9.	Flange PN40 SDN80 - SDN200	142-2402-094
10.	Flange Adapter COMPACT-F1/PE	142-2402-001


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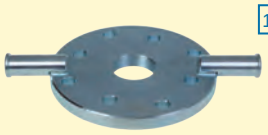
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Centering drilling, Pressure gauge parts

CENTERING DRILLING BITS

1 2

Position No.	Name	Catalogue No.
1.	Centering drilling bit 8 /80	142-2403-001
1.	Centering drilling bit 8/100	142-2403-002

Position No.	Name	Catalogue No.
2.	Centering drilling bit18/110	142-2403-021
2.	Centering drilling bit18/145	142-2403-022

PRESSUREGAUGEPART

1

2

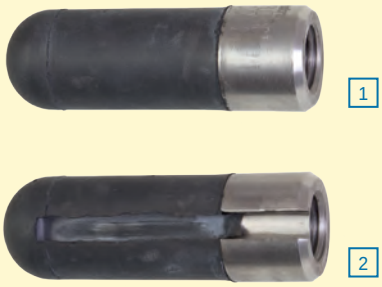
Position No.	Name	Catalogue No.
1.	Pressure gauge with fitting 0 - 40 mbar	142-2404-004
1.	Pressure gauge with fitting 0 - 250 mbar	142-2404-025
1.	Pressure gauge with fitting 0 - 0,6 bar	142-2404-060
1.	Pressure gauge with fitting 0 - 1,6 bar	142-2404-160
1.	Pressure gauge with fitting 0 - 2,5 bar	142-2404-250
1.	Pressure gauge with fitting 0 - 4 bar	142-2404-400
1.	Pressure gauge with fitting 0 - 6 bar	142-2404-600
1.	Pressure gauge with fitting 0 - 16 bar	142-2404-700
2.	Pressure gauge with corner fitting 0 - 40 mbar	142-2405-004
2.	Pressure gauge with corner fitting 0 - 250 mbar	142-2405-025
2.	Pressure gauge with corner fitting 0 - 0,6 bar	142-2405-060
2.	Pressure gauge with corner fitting 0 - 1,6 bar	142-2405-160
2.	Pressure gauge with corner fitting 0 - 2,5 bar	142-2405-250
2.	Pressure gauge with corner fitting 0 - 4 bar	142-2405-400
2.	Pressure gauge with corner fitting 0 - 6 bar	142-2405-600
2.	Pressure gauge with corner fitting 0 - 16 bar	142-2405-700

Pressure gauge parts of different measuring capacity and with different composition of components or manometers of various types and capacity may be manufactured on request.

Stoppers, pluging rods

STOPPLERS

Position No.	Name	Catalogue No.
1.	Stopper 3/4“	142-2501-001
1.	Stopper 1“	142-2501-002
1.	Stopper5/4“	142-2501-003
1.	Stopper6/4“	142-2501-004
1.	Stopper 2“	142-2501-005
2.	Stopper 3/4“ with de-aeration	142-2501-011
2.	Stopper 1“ with de-aeration	142-2501-012
2.	Stopper 5/4“ with de-aeration	142-2501-013
2.	Stopper6/4“ with de-aeration	142-2501-014
2.	Stopper 2“ with de-aeration	142-2501-015



PLUG RODS

Position No.	Name	Catalogue No.
1.	Plugging rod with inner square	142-2502-001
2.	Plugging rod with inner hexagon	142-2502-021
3.	Plugging rod with inner hexagon - H	142-2502-022
4.	Plugging rod with outer square	142-2502-002
4.	Plugging rod with outer hexagon	142-2502-025
5.	Adapter for inner to outer square	142-2502-031

Mechanical Flange Adapters

Position No.	Name	Catalogue No.
1.	Mechanical Flange Adapter DN80 (84 - 105mm)	142-2503-001
1.	Mechanical Flange Adapter DN100 (104 - 132mm)	142-2503-002
1.	Mechanical Flange Adapter DN150 (154 - 192mm)	142-2503-003
	Set of bolts for mechanical flange adapter DN 80	142-2503-011
	SSet of bolts for mechanical flange adapter DN 100	142-2503-012
	Set of bolts for mechanical flange adapter DN 150	142-2503-013

Warning:
Mechanical Flange Adapter are specially adapted for using with device COMPACT - F1.


1


4


2


3


6


5

Position No.	Name	Catalogue No.
1.	Pneumatic drive Spitznass 170 Nm, 110 rpm (20x20) *) for KNS-F1 and COMPACT-F1 up to 40 bar	142-2600-001
2.	Pneumatic drive Spitznass 170 Nm, 110 rpm (12x12) *) for KNS-F1 and COMPACT-F1 up to16 bar	142-2600-002
3.	Hydraulic drive Spitznass 160 Nm, 950 rpm (20x20) *)	142-2600-021
4.	Deburrer pneumatic drive - 1800 rpm	142-2600-003
5.	Pneumatic ratchet 1/2“ 115 Nm 170 rpm	142-2600-004
6.	Square adapter for the pneumatic drive (12-20)	142-2600-010

*) - The compressed air drives position No. 1,2 and 3 may be replaced with each other by dismantling or inserting a square adapter (position no. 6).

Compressed air drive and hydraulic drive other parametrs if required ☎

Warning:

Compressed air for pneumatic drives should be properly pre-treated (condensate separation, additional lubrication etc.).

We recommend using compressed air accessories components as referred to in the part 3 of this catalogue.

NOTES

2. LINE STOP DEVICES AND PIPE CLOSING PLUGS

LINE STOP DEVICES AND PIPE CLOSING PLUGS

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LINE STOP DEVICE

RVB 2010-F1

Temporary pipeline closure

DESCRIPTION AND APPLICATION

The device RVB-F1 is used for temporary pipeline closing.

The closing body (balloon) is made of special rubber and it is fixed to the loading rod. Using a loading chamber, it is loaded in a way that prevents any media leaks to the pipeline. The pipeline is closed by filing the closing body with liquid using a pressure and suction pump. In order to improve safety, the closing body is supported by a supporting arm or a cylinder that prevents the body from moving in the gas flow direction. The loading chamber is attached to the pipeline by a balloon adapting piece upright to the axis of the closed pipeline (for ballooning adapters – following the sheet the part 4 of the catalogue).
The design of the loading chambers and rods makes it possible to monitor the closed up section during the closing period or, as the case may be, to de-aerate the section, de-gas it or flush it with inert gas.
The device is conceived in a way to allow for the execution of all works including the closing of the balloon adapting piece without any media leaks.
The devices RVB 2010-F1 are designed and manufactured as kit systems allowing for a high level of variability. Normally they are supplied as the below described sets or sets individually configured based on customer´s request.

WORKING RANGE

Diameter and material of the closed pipeline:
Steel pipeline DN65 up to DN 300
PE pipeline 75 up to 315 mm

The application of pipelines made of other materials is subject to consultation with the manufacturer.

Media:
Natural gas, water, other non-aggressive gases and liquids. *

The maximum pressure in the closed pipeline: **
Up to 3 bar

Working temperature: ***
-10 / +130 °C

* Other media possible only after consultation with the manufacturer.

** The maximum pressure in closed pipeline depends on the closed pipeline dimension – following the sheet 2.1.-1.1.

*** The boundaries of the temperature range are based on the type of used balloons.

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LINE STOP DEVICE

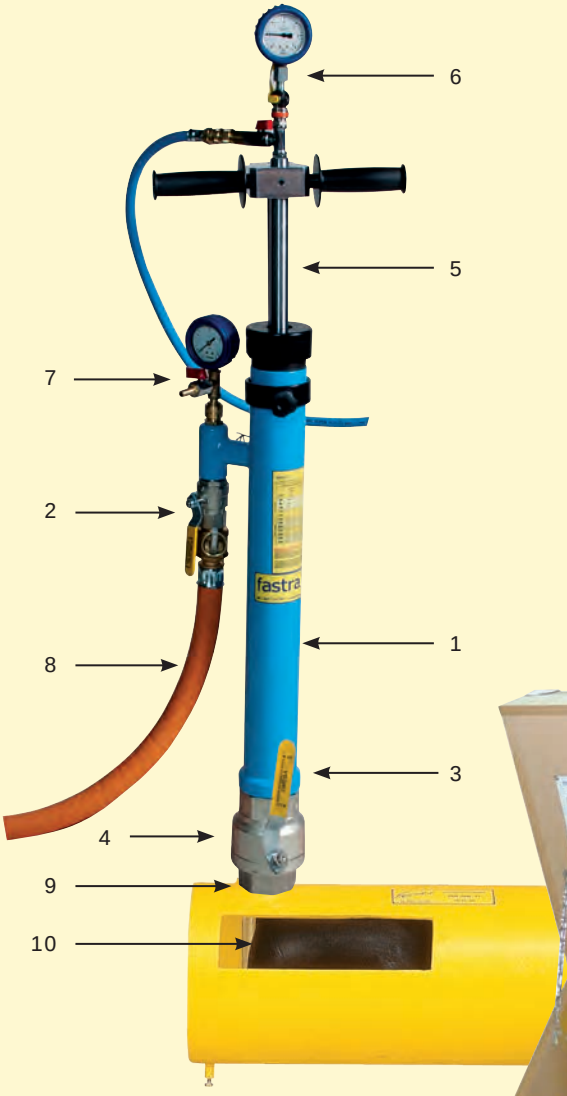
2.1 Device RVB 2010-F1

Description RVB 2010-F1

Standard ballooning sets are configured of individual elements of the RVB 2010-F system so that they could make it possible for system and complete execution of works at preserving the maximum possible safety level. In principle, they are designed as at least two-chamber units at every side of the closed section (two loading chambers with closing balloons are used at every side of the closed section). For the list of sets including their working range see the next page.

For schematic representations of pipeline closing, method of the loading of the closing bodies, layout of ballooning adapting pieces and pictures of individual set elements see the sheets 2.1-1.2 and 2.1.-2.

The sets are normally supplied with basic accessories as specified in the set content description on the sheet 2.1-3.1.



BASICELEMENTS

Legend:

1 Loading chamber
2 Filling valve
3 Loading rod RVT locking ring
4 Ball valve DN/ID 65 mm
with modified leading edge
5 Loading rod RVT
6 Monitoring pressure gauge,
range -1 / +5 bar with glycerine fill
7 Pressure gauge part
8 Pressure hose DN/ID 25 mm (1”)
for the drainage of residual, length 5 m
9 Ballooning adapter
10 Closing body RVT

TECHNICAL PARAMETERS

Connecting thread dimension:
G2½” outer to EN 228-1:2003

The total height of the chamber with the ball installed and loading rod fully pulled out (measured form the surface of the pipeline being closed): 1850 mm

The weight of this version for DN3000 including transport boxes:

One sided	139 kg
Two sided	265 kg
Three sided	391 kg

Working range RVB 2010-F1

WORKING RANGE OF SETS USING BASIC ACCESSORIES

DIAMATER AND MATERIAL OF CLOSED PIPELINE

Set	Closing type (set)	Closed pipeline diameter		Catalogue No.
		Steel DN/ID [mm]	PE d_n/OD [mm]	
RVB 2010-F1/1 DN 250	Single-sided, two-chamber	65 - 250	75 - 315	211-3102-025
RVB 2010-F1/1 DN 300		65 - 300	75 - 315	211-3102-030
RVB 2010-F1/2 DN 250	Two-sided, two-chamber	65 - 250	75 - 315	211-3104-025
RVB 2010-F1/2 DN 300		65 - 300	75 - 315	211-3104-030
RVB 2010-F1/3 DN 250	Three-sided, two-chamber	65 - 250	75 - 315	211-3106-025
RVB 2010-F1/3 DN 300		65 - 300	75 - 315	211-3106-030

For the content of individual sets following the sheet page 2.1-3.1

Range of the application of the sets up to DN250, steel, may be extended up to DN300 using optional accessories – following the sheet 2.1-3.1

MEDIA IN CLOSED PIPELINE

Natural gas, water, other non-aggressive gases and liquids. Other media may be used based on consultation with the manufacturer.

MAXIMUM PRESURE IN THE CLOSED PIPELINE

Pipeline closed dimension		Maximum permitted pressure in the closed pipeline	Minimum number of RVT (chambers used)
Steel DN/ID * [mm]	PE d_n/OD * [mm]		
DN65 – DN100 (76,1 – 114,3)	75 - 110	3,0 bar	2
DN125 – DN150 (133,0 - 168,3)	125 - 160	2,0 bar	
DN200 (211,0 – 219,1)	180 - 225	1,5 bar	
DN250 (273,0)	250-280	1,2 bar	
DN300 (318,0 – 323,9)	315	1,0 bar	

***Use on pipeline made of other materials is possible only after consultation with the manufacturer.**

WORKING TEMPERATURE

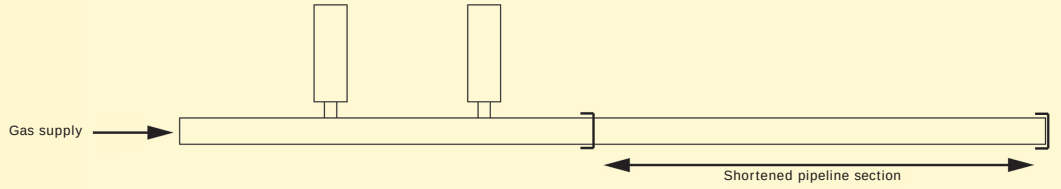
-10/+80°C

RVB 2010-F1 APPLICATION METHODS

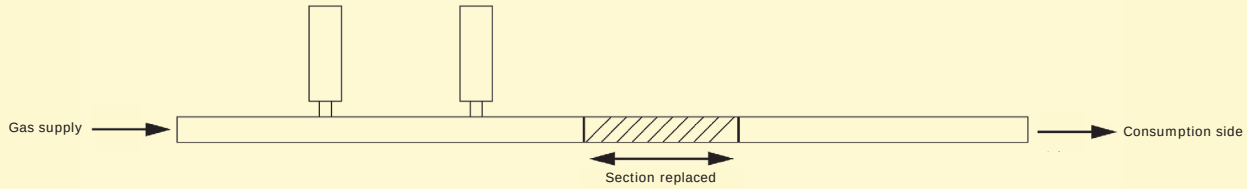
SCHEMATIC REPRESENTATION OF THE METHOD OF THE APPLICATION OF INDIVIDUAL BALLOON SETS

ONE-SIDED SETS

a) Closing ending branch line (e.g. shortening a pipeline section)

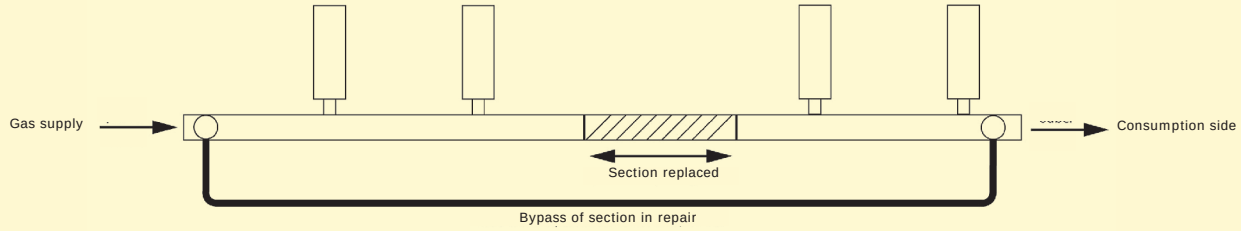


b) Closing a pipeline branch for repair. The branch line does not require gas supplies during the repair

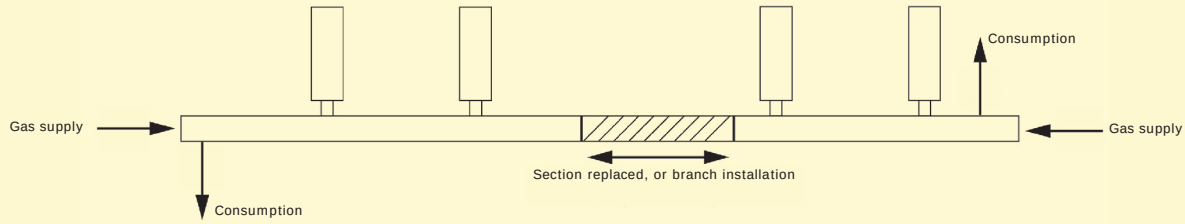


TWO-SIDED SETS

a) Closing for a pipeline section replacement where the gas supply may be interrupted

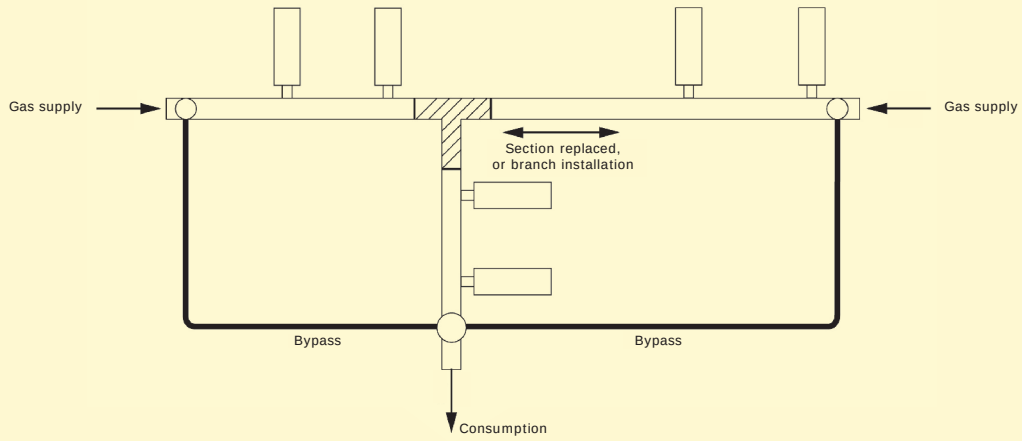


b) Both side closing for the purpose of pipeline replacement or installation of branch line



THREE AND MORE-SIDED SETS

Closing of pipeline sections on a complex configuration gas distribution pipeline



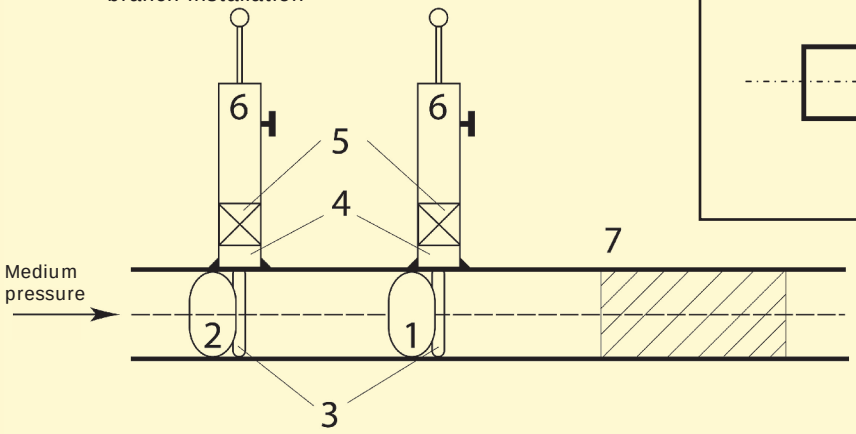
Methods of the application of using RVB 2010-F1

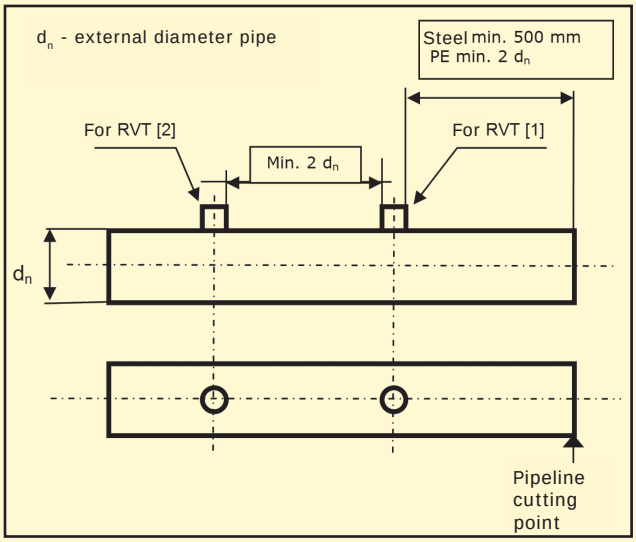
SCHEMATIC REPRESENTATION OF THE LAYOUT OF CLOSING BODIES IN THE PIPELINE FROM THE POINT OF VIEW OF MEDIUM PRESSURE EFFECTS AND DEPLOYMENT OF BALLOON ADPATING PIECES

FOR STEEL PIPELINES DN/ID 65-250 mm AND PE PIPELINES d/OD 75/315 mm

Legend: (for the position No. following the sheet page 2.1-2)

1 - Closing body – RVT [1] – Pos. No. 8,9
2 - Closing body – RVT [2] – Pos. No. 8,9
3 - Support arms – Pos. No. 10
4 - Ballooning adapter – following the sheet part 4 and 5 of this catalogue
5 - Ball valve – Pos. No. 4
6 - Loading chamber for the loading of the rod RVT – Pos. No. 1
7 - Pipeline cutting point – section replaced or place of branch installation

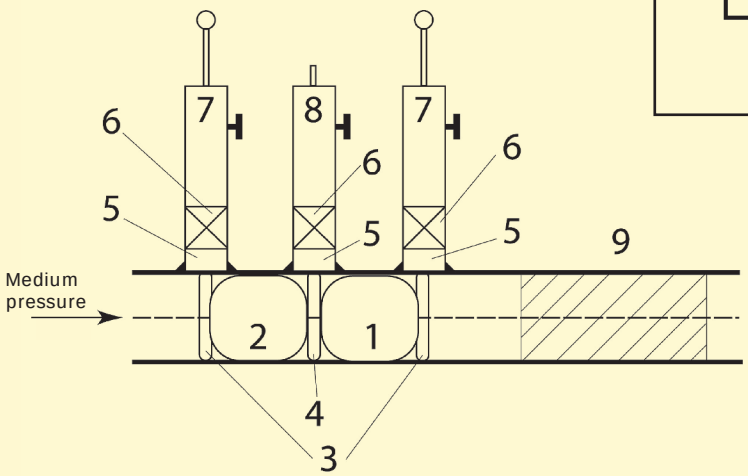


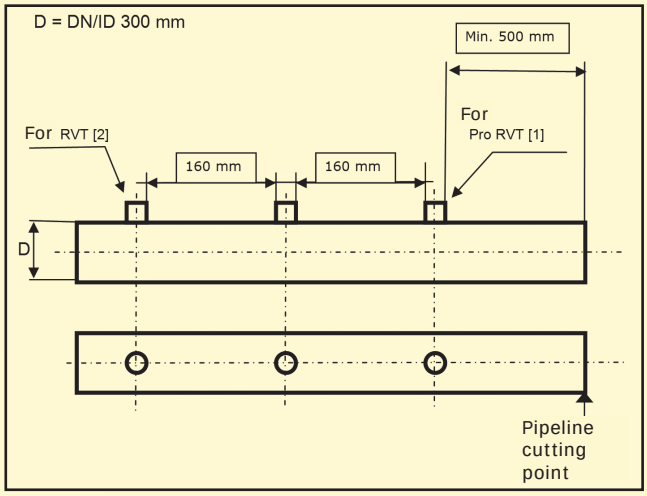


FOR STEEL PIPELINES

Legend: (Pos. No. following the sheet page 2.1-2)

1 - Closing body – RVT [1] – Pos. No. 8,9
2 - Closing body – RVT [2] – Pos. No. 8,9
3 - Support arm – Pos. No. 10
4 - Support cylinder – Pos. No. 6
5 - Ballooning adapter – following the sheet part 4 and 5 of this catalogue
6 - Ball valve – Pos. No. 4
7 - Loading chamber for the loading rod RVT – Pos. No. 1
8 - Chamber DN300 for the loadin rod with support cylinder - Pos. No. 2
9 - Pipeline cutting point – section replaced or place of branch installation





RVB 2010-F1 elements

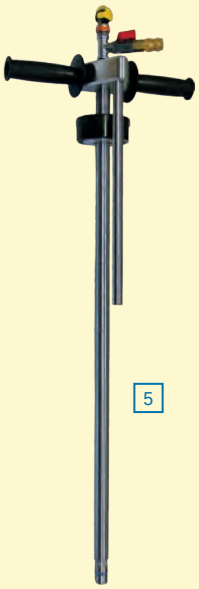
Names of individual elements shown above and their catalogue numbers are given on pages describing individual sets.

1 Loading chamber RVB 2010 - F1

2 Chamber DN300 RVB 2010 - F1

3 Locking ring of the guide rod RVT

4 Ball valve FF 2,5“ PR 65



5 Guide rod RVB 2010 - F1

6 Guide rod with support cylinder

7 Pressure gauge -1/+5 bar

8 Closing body RVT 60-130 2010

9 Closing body RVT 140-300 2010

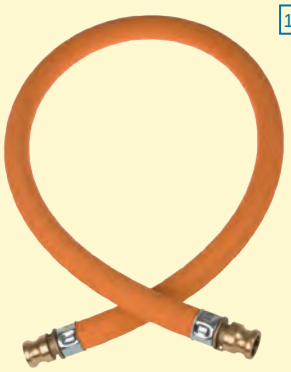
10 Support RVB 2010 - F1

11 Sliding bush RVB 2010 - F1

12 Pressure gauge with fitting 0 - 4 bar

13 Pressure hose 1“/5m

14 Pressure hose ⅜“/5m



15 Pressure hose 1“/1,5m

RVB 2010-F1 Elements

16

Pressure pump, stainless steel

17

Transparent hose suction

18

Coloured hose pressure flow

19

Can 10 l

20

Can 25 l

26

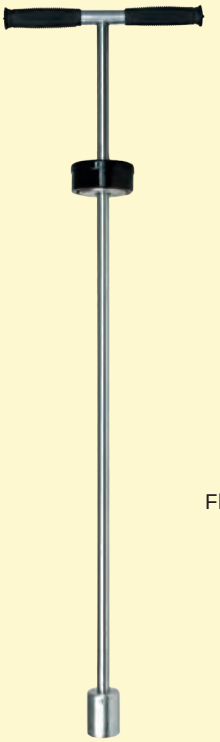
Special Steel Wire Brush wheel shape

28

Silicone grease 1 kg

21

Mechanical Deburrer RVB 2010 - F1



22

Plug rod RVB 2010 - F1

23

Adapter for inner to outer square

27

Deburrer pneumatici drive 1800 rpm

29

Silicone spray

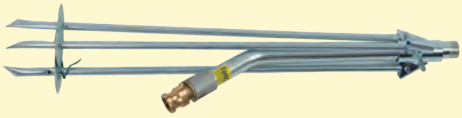
24

Flexible magnet L 210

25

Flexible magnet L 260

Gas outlet stand



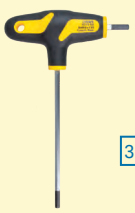
33

30

Sealing tape GAS 15m

31

Allen wrench No. 3



32

Allen wrench No. 5

34

Transport box RVB 2010 - F1

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Sets RVB 201-F1

Pos. No.	Name	Catalogue No.	RVB 2010-F1/1 DN250 Cat. No. 211-3102-025	RVB 2010-F1/1 DN300 Cat. No. 211-3102-030	RVB 2010-F1/2 DN250 Cat. No. 211-3104-025	RVB 2010-F1/2 DN300 Cat. No. 211-3104-030	RVB 2010-F1/3 DN250 Cat. No. 211-3106-025	RVB 2010-F1/3 DN300 Cat. No. 211-3106-030
			No. of units perset					
1.	Loading chamber RVB 2010 - F1	212-2010-001	2	2	4	4	6	6
2.	Chamber DN300 RVB 2010 - F1	212-2010-002		1		2		3
3.	Locking ring of the guide rod RVT	212-2010-003	2	2	4	4	6	6
4.	Ball valve FF 2,5“ PR 65	212-2010-004	2	3	4	6	6	9
5.	Guide rod RVB 2010 - F1	212-2010-005	2	2	4	4	6	6
6.	Guide rod with support cylinder	212-2010-006		1		2		3
7.	Pressure gauge -1/+5 bar	212-2010-007	2	2	4	4	6	6
8.	Closing body RVT 60-130 2010	221-5101-010	3	3	6	6	9	9
9.	Closing body RVT 140-300 2010	221-5101-020	3	3	6	6	9	9
10.	Support RVB 2010 - F1	212-2010-010	2	2	4	4	6	6
11.	Sliding bush RVB 2010 - F1	212-2010-011	2	2	4	4	6	6
12.	Pressure gauge with fitting 0 - 4 bar	142-2405-400	2	2	4	4	6	6
13.	Pressure hose 1“/5m	212-2010-013	2	2	4	4	6	6
14.	Pressure hose ⅜“/5m	212-2010-014	1	1	2	2	3	3
15.	Pressure hose 1“/1,5m	212-2010-015	1	1	2	2	3	3
16.	Pressure pump, stainless steel	212-2010-016	1	1	2	2	3	3
17.	Transparent hose - suction	212-2010-017	1	1	2	2	3	3
18.	Coloured hose - pressure flow	212-2010-018	1	1	2	2	3	3
19.	Can 10 l	212-2010-019	2	2	4	4	6	6
20.	Can 25 l	212-2010-020		1		2		3
21.	Mechanical Deburrer RVB 2010 - F1	212-2010-021	1	1	1	1	1	1
22.	Plugging rod RVB 2010 - F1	212-2010-022	1	1	1	1	1	1
23.	Adapter for inner to outer square	142-2502-031	1	1	1	1	1	1
24.	Flexible magnet L 210	212-2010-024	1	1	1	1	1	1
25.	Flexible magnet L 260	212-2010-025	1	1	1	1	1	1
26.	Special Steel Wire Brush wheel shape	212-2010-031	1	1	1	1	1	1
27.	Deburrer pneumatici drive – 1800 rpm	142-2600-003	1	1	1	1	1	1
28.	Silicone grease 1 kg	212-2010-032	1	1	2	2	3	3
29.	Silicone spray	212-2010-033	1	1	2	2	3	3
30.	Sealing tape GAS 15m	212-2010-037	1	1	2	2	3	3
31.	Allen wrench No.3	142-2103-003	1	1	2	2	3	3
32.	Allen wrench No.5	142-2103-005	1	1	2	2	3	3
33.	Gas outlet stand	212-2010-038	1	1	2	2	3	3
34.	Transport box RVB 2010 - F1	212-2010-039	1	1	2	2	3	3
35.	Spare parts kit RVB 2010-F1	212-2010-106	1	1	1	1	1	1

*** Following the sheet the representation of individual positions on the sheet 2.1-2**

Accessories RVB 2010-F1

APPLICATION RANGE EXTENSION SETS

Name (set)	Description	Catalogue No.
RVB 2010-F1/R1	Application range extension set RVB 2010-F1/1 DN250 for DN300	211-3102-010
RVB 2010-F1/R2	Application range extension set RVB 2010-F1/2 DN250 for DN300	211-3104-010
RVB 2010-F1/R3	Application range extension set RVB 2010-F1/3 DN250 for DN300	211-3106-010

BYPASS ELEMENTS AND SETS

The elements are mounted on the ball valve used for the drilling of the pipeline and it will be connected by the by-pass pipeline PE DN63.

1

2

3

Sets	with pressure relief		
Pos. No.	Name	Catalogue No.	No. of units
	Set for bypass	211-3110-010	
	Set content		
1.	Ball valve FF 2.5” PR65	212-2010-004	2
2.	Adapter F-M PE63-2.5” L	212-3110-042	1
3.	Adapter F-M PE63-2.5” L with pressure relief	212-3110-095	1
	Set for bypass - double	211-3110-020	
	Set content		
1.	Ball valve FF 2.5” PR65	212-2010-004	4
2.	Adapter F-M PE63-2.5” L	212-3110-042	2
3.	Adapter F-M PE63-2.5” L with pressure relief	212-3110-095	2

Individual components		
Pos. No.	Name	Catalogue No.
1.	Ball valve FF 2.5” PR65	212-2010-004
2.	Adapter F-M PE63-2.5” L with pressure relief	212-3110-042
3.	Adapter F-M PE63-2.5” L with pressure relief	212-3110-095

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LINE STOP DEVICE

CLOSING BALLOONS

for temporary pipe closing

DESCRIPTION AND APPLICATION

Closing balloons are devices used for the temporary closing of the medium flow in the pipeline. Working part of the closing balloon is made of flexible hollow body that is filled with gas or liquid after being loaded to the pipeline. It will cause closing of the line and stop the media flow. The flexible body may be provided with a protective jacket. It is fixed to the loading part of the closing balloon that consists of various components based on specific requirements to the balloon application (loading the balloon to the pipeline, check and control of its filling etc.)

The loading to closed pipelines is recommended for the sake of safety and extension of the balloon technical life to be done just using drilled openings with properly deburred edges.

Fore safety reasons, the service life of some types of balloons may be limited.

For detailed description, application specification, properties and technical data of individual series of closing balloons following the sheet descriptions below in following catalogue sheets.

WORKING RANGE

Closed pipeline diameter:
50-2000 mm *

Media:
Natural gas, water, non-aggressive gases and fluids. Other media should be only after a consultation with the manufacturer.

The maximum pressure in the closed pipeline:
Up to 3 bar **

Working temperature:
-10 / +130 °C ***

* The maximum diameter depends on type and made of the balloon used

** The maximum pressure depends on type and made of the balloon used

*** Thermal range depends on type and made of the balloon used

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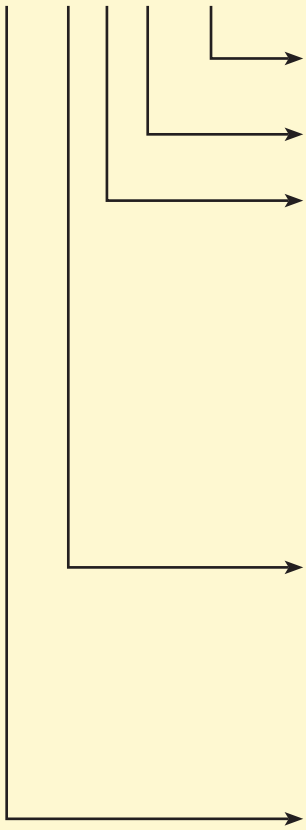
LINE STOP DEVICE

2.2 Closing balloons

Balloon Marking System

CLOSINGBALLOONSDESIGNEDFORSPECIFICINTERIORPIPELINEDIAMETER

UBF-&-$ ##xxxx



Balloon size marking (the number specifies the pipeline dimension in mm)

Pipeline specification
- DN = steel pipeline
- PE = PE pipeline

Made as a part of the series (if not specified, it is the basic made in the series):

- **K** Balloons with an opening in the loading rod for the inspection of pressure in the pipeline section upstream the balloon
- **2** Double closing balloon with the possibility of independent balloon filling and monitoring of the intermediate space
- **P** Kevlar and Al protective jacket on the front side of the balloon
- **Z** Kevlar and Al protection jacket at the rear side of the balloon
- **R** quick acting coupling device
- **H** Flexible loading rod
- **O** Balloon tube of oil-resistant materials
- **J** Disposable balloons

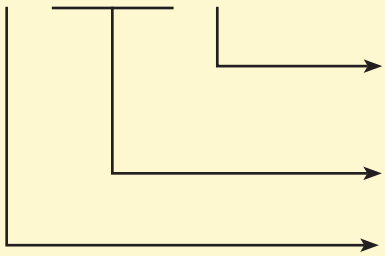
Series

- **S** Balloons with protective antistatic jacket
- **N** reduced flammability balloons with protective antistatic jacket
- **AL** Balloons with high-strength protective Kevlar and Al jacket
- **V** Balloons of high-strength airtight materials for water mains and sewer systems
- **O** Balloons of oil resistant materials
- **VZ** Sampling balloons

Manually loaded closing balloons for a specific pipeline dimension

CLOSINGBALLOONSDESIGNEDFORSPECIFICINTERIORPIPELINEDIAMETER

RVT XX-XXX-§§§



Made

Code name set up of alpha numeric characters specifying the purpose of the balloon application

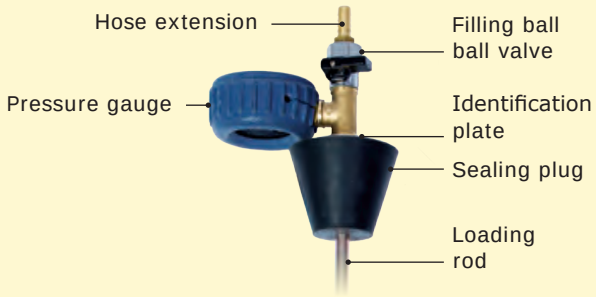
Specification of the range of interior diameters (numbers specify the range of interior diameters in mm)

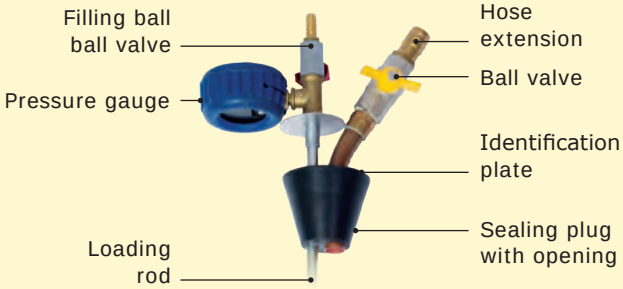
Dimension-variable balloons manufactured for a specific range of interior diameters of the pipeline

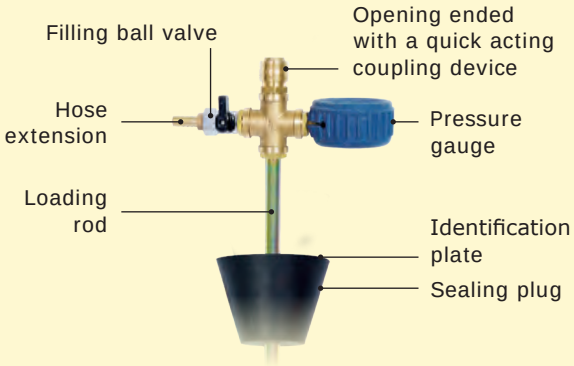
Basic Terms

Loading part variants

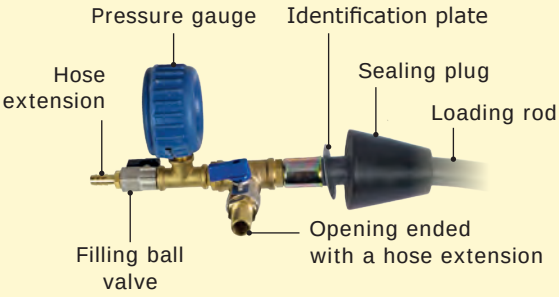
FIXEDLOADINGRODS

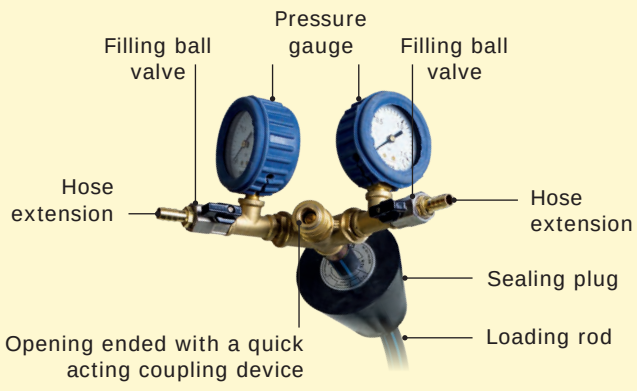






FLEXIBLE LOADING RODS

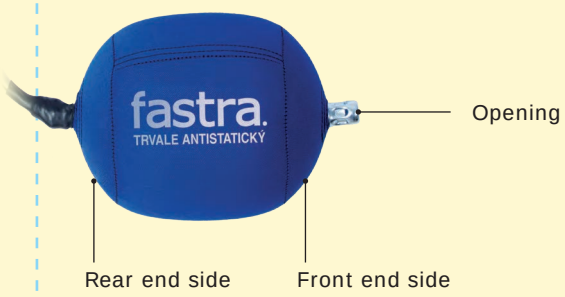




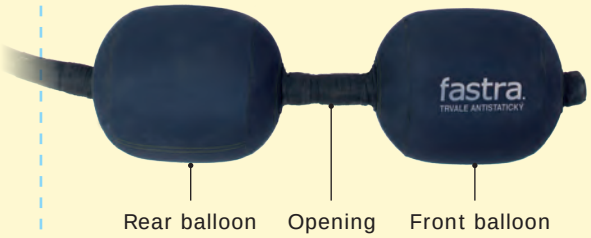
Working part variants

UBF

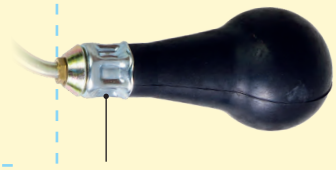
SIMPLE WITH PROTECTIVE JACKET OR OPENING



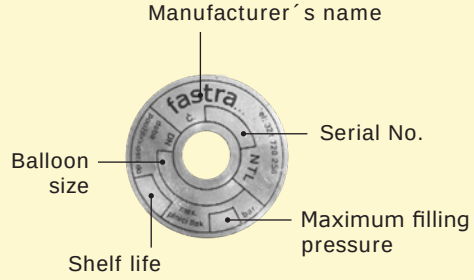
DOUBLE PROTECTIVE JACKET OR OPENING



RVT



Identification plate



Series UBF-S

Closing balloons series UBF-S are manually loaded balloons filled with inert gas for temporary gas pipeline closing.

The working part of the closing balloon manufactured for a specified internal diameter of the closed pipeline consists of a rubber tube with a protective permanently antistatic cloth jacket. The protective jacket flammability is not reduced and therefore these closing balloons are designated primarily for applications where the cloth jacket can be exposed to thermal stress. The working part is flexibly fixed to the loading part.

As a rule, the loading part consists of a loading rod with a rubber plug, identification plate and fitting set. The structure of components of the loading part of individual standard manufactured balloons of this series is described on the following sheets of the catalogue, if necessary, it may be arbitrarily modified as may be required by the customer. (Following the sheet the sheet 2.2-1).

For maximum safety, the shelf life of these closing balloons is limited.

The service life (30 months, as a rule) is shown on the identification plate. The balloon may be sent to the manufacturer for the overhaul after the lapse of the service lifetime.

APPLICATION RANGE AND SPECIFICATIONS

Closing pipeline material:
Steel, cast iron, PE, other materials after consultation with the manufacturer

Interior diameter of closed pipelines:
50 to 1400 mm - following type catalogue sheet

Media:
natural gas, non-aggressive gases, other media, after consultation with the manufacturer

Pressure load:

- **Maximum positive pressure in the closed pipeline** - following the type catalogue sheet
- **Maximum positive pressure in the balloon** - following the type catalogue sheet

Working temperature:
+5 to +28 °C

Protetcive jacket:

- **Tensile strength:**
  500 N
- **Electrostatic properties:**
  Specific surface resistance = 3.2, 2.3 .104 Ohm, compliance with CSN EN 1149-5:2008

NOTES

Type UBF-S

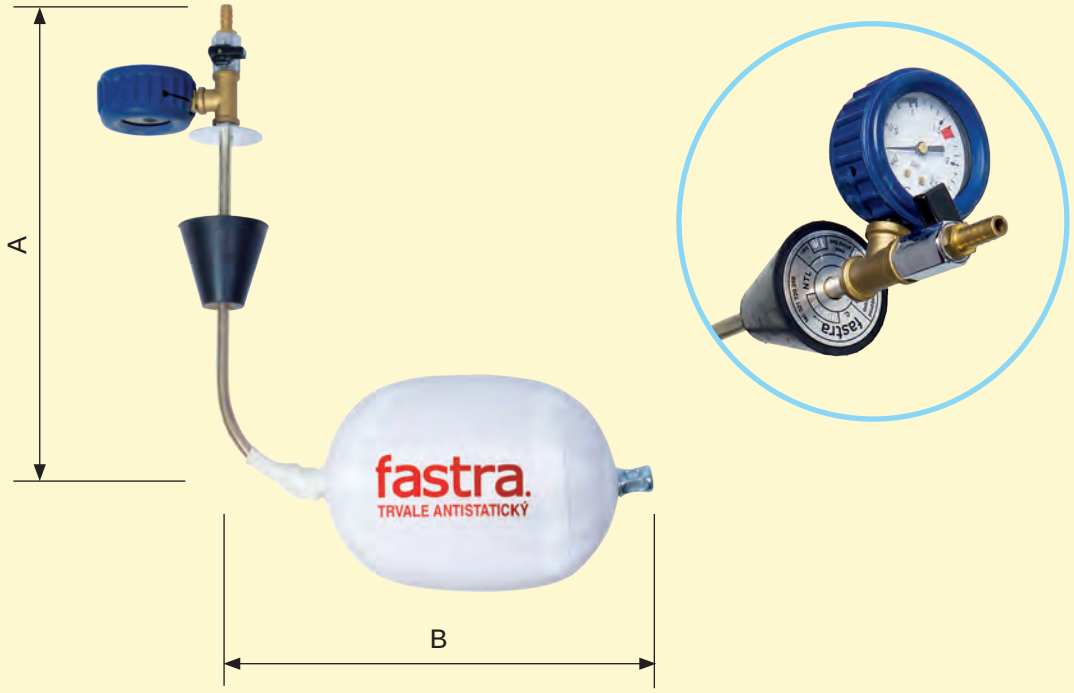
The basic version of the series UBF-S.

Working part – for properties and description following the sheet 2.2 –2.

Loading part – a fixed loading tube with a sealing plug, integrated pressure gauge, filling ball valve with a hose extension diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).



FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–S DN50	50	390	150	0,20	2,0	40	FHM	221-2100-050
UBF–S DN65	65	390	150	0,20	2,0	57	FHS	221-2100-065
UBF–S DN80	80	360	210	0,20	2,0	57	FHS	221-2100-080
UBF–S DN100	100	360	220	0,18	1,8	57	FHS	221-2100-100
UBF–S DN125	125	360	290	0,16	1,6	57	FHS	221-2100-125
UBF–S DN150	150	370	290	0,14	1,4	57	FHS	221-2100-150
UBF–S DN200	200	400	340	0,11	1,1	57	FHX	221-2100-200
UBF–S DN250	250	440	400	0,10	1,0	57	FHX	221-2100-250
UBF–S DN300	300	440	500	0,08	0,8	57	FHX	221-2100-300
UBF–S DN350	350	630	550	0,04	0,4	74	FHXX	221-2100-350
UBF–S DN400	400	660	620	0,03	0,3	74	FHXX	221-2100-400
UBF–S DN450	450	660	750	0,02	0,2	90	FHXX	221-2100-450
UBF–S DN500	500	660	750	0,02	0,2	90	FHXX	221-2100-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-S

FOR PE SDR11 PIPELINES							
Name	For pipeline DN/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-S PE63/11	63	390	150	0,20	2,0	56	221-2101-063
UBF-S PE90/11	90	360	210	0,20	2,0	56	221-2101-090
UBF-S PE110/11	110	360	220	0,18	1,8	56	221-2101-110
UBF-S PE160/11	160	370	290	0,14	1,4	56	221-2101-160
UBF-S PE225/11	225	400	340	0,11	1,1	56	221-2101-225
UBF-S PE315/11	315	440	400	0,08	0,8	56	221-2101-315
UBF-S PE355/11	355	440	500	0,04	0,4	74	221-2101-355
UBF-S PE400/11	400	650	550	0,03	0,3	74	221-2101-400

FOR PE SDR17 PIPELINES							
Name	For pipeline DN/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-S PE63/17	63	390	150	0,20	2,0	56	221-2107-063
UBF-S PE90/17	90	360	210	0,20	2,0	56	221-2107-090
UBF-S PE110/17	110	360	220	0,18	1,8	56	221-2107-110
UBF-S PE160/17	160	370	290	0,14	1,4	56	221-2107-160
UBF-S PE225/17	225	400	340	0,11	1,1	56	221-2107-225
UBF-S PE315/17	315	440	400	0,08	0,8	56	221-2107-315
UBF-S PE355/17	355	440	500	0,04	0,4	74	221-2107-355
UBF-S PE400/17	400	650	550	0,03	0,3	74	221-2107-400

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm)

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

Series UBF-N

Closing balloons series UBF-N are manually loaded balloons with a protective jacket and reduced flammability filled with inert gas designated for temporary closing of gas pipelines.

The working part of the closing balloon manufactured for a specified internal diameter of the closed pipeline consists of a rubber tube with a protective permanently antistatic cloth jacket of reduced flammability. For the reduced flammability technical specification following below. The working part is flexibly fixed to the loading part. As a rule, the loading part consists of a loading rod with a rubber plug, identification plate and fitting set. The structure of components of the loading part of individual standard manufactured balloons of this series is described on the following sheets of the catalogue, if necessary, it may be deliberately modified as may be required by the customer. (following the sheet 2.2-1).

For maximum safety, the shelf life of these closing balloons is limited.

The service life (30 months, as a rule) is shown on the identification plate. The balloon may be sent to the manufacturer for the overhaul after the lapse of the service lifetime.

APPLICATION RANGE AND SPECIFICATIONS

Closing pipeline material:
Steel, cast iron, PE, other materials after consultation with the manufacturer

Diameter of closed pipelines:
50 to 1400 mm - following type catalogue sheet

Media:
natural gas, non-aggressive gases, other media, after consultation with the manufacturer

Pressure load:
- **Maximum positive pressure in the closed pipeline -** following the type catalogue sheet
- **Maximum positive pressure in the balloon -** following the type catalogue sheet

Working temperature:
+5 to+28 °C

Protetcive jacket:
- **Tensile strength:**
  1100 N
- **Electrostatic properties:**
  Specific surface resistance $10^5\,\Omega$
  compliance with CSN EN 1149-5:2008
- **Fortection in case of short-term exposure to flame:**
  A1 – compliance with CSN EN ISO 11612:2009
- **Fortection against radiating heat:**
  C1 version level to CSN EN ISO 11612:2009

NOTES

Type UBF-N

The basic version of the series UBF-N.

Working part – for properties and description following the sheet 2.2 –3.

Loading part – a fixed loading tube with a sealing plug, integrated pressure gauge, filling ball valve with a hose extension diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).

FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–N DN50	50	390	150	0,25	2,5	40	FHM	221-3100-050
UBF–N DN65	65	390	150	0,25	2,5	57	FHS	221-3100-065
UBF–N DN80	80	360	210	0,25	2,5	57	FHS	221-3100-080
UBF–N DN100	100	360	220	0,22	2,2	57	FHS	221-3100-100
UBF–N DN125	125	360	290	0,20	2,0	57	FHS	221-3100-125
UBF–N DN150	150	370	290	0,18	1,8	57	FHS	221-3100-150
UBF–N DN200	200	400	340	0,14	1,4	57	FHX	221-3100-200
UBF–N DN250	250	440	400	0,12	1,2	57	FHX	221-3100-250
UBF–N DN300	300	440	500	0,10	1,0	57	FHX	221-3100-300
UBF–N DN350	350	630	550	0,06	0,6	74	FHXX	221-3100-350
UBF–N DN400	400	660	620	0,05	0,5	74	FHXX	221-3100-400
UBF–N DN450	450	660	750	0,04	0,4	90	FHXX	221-3100-450
UBF–N DN500	500	660	750	0,04	0,4	90	FHXX	221-3100-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-N

FOR PE SDR11 PIPELINES							
Name	For pipeline DN/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N PE63/11	63	390	150	0,25	2,5	56	221-3101-063
UBF-N PE90/11	90	360	210	0,25	2,5	56	221-3101-090
UBF-N PE110/11	110	360	220	0,20	2,0	56	221-3101-110
UBF-N PE160/11	160	370	290	0,18	1,8	56	221-3101-160
UBF-N PE225/11	225	400	340	0,14	1,4	56	221-3101-225
UBF-N PE315/11	315	440	400	0,10	1,0	56	221-3101-315
UBF-N PE355/11	355	440	500	0,06	0,6	74	221-3101-355
UBF-N PE400/11	400	650	550	0,05	0,5	74	221-3101-400
UBF-N PE450/11	450	660	620	0,04	0,4	90	221-3101-450

FOR PE SDR17 PIPELINES							
Name	For pipeline DN/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N PE63/17	63	390	150	0,25	2,5	56	221-3107-063
UBF-N PE90/17	90	360	210	0,25	2,5	56	221-3107-090
UBF-N PE110/17	110	360	220	0,20	2,0	56	221-3107-110
UBF-N PE160/17	160	370	290	0,18	1,8	56	221-3107-160
UBF-N PE225/17	225	400	340	0,14	1,4	56	221-3107-225
UBF-N PE315/17	315	440	400	0,10	1,0	56	221-3107-315
UBF-N PE355/17	355	440	500	0,06	0,6	74	221-3107-355
UBF-N PE400/17	400	650	550	0,05	0,5	74	221-3107-400
UBF-N PE450/17	450	660	620	0,04	0,4	90	221-3107-450

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm)

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

Type UBF-N-K

This is a version that includes an opening for the monitoring of the media pressure in a section of the closed pipeline upstream the closing balloon or in the closed section of the pipeline (if several balloon are used).

Working part – for properties and description following the sheet 2.2 –3.

Loading part – a fixed loading tube with a sealing plug, an opening/passage in the working part and loading tube ended with a self-closing quick acting coupling system, integrated pressure gauge, filling ball valve with a hose extension diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).

FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–N-K DN50	50	390	150	0,25	2,5	40	FHM	221-3200-050
UBF–N-K DN65	65	390	150	0,25	2,5	57	FHS	221-3200-065
UBF–N-K DN80	80	360	210	0,25	2,5	57	FHS	221-3200-080
UBF–N-K DN100	100	360	220	0,22	2,2	57	FHS	221-3200-100
UBF–N-K DN125	125	360	290	0,20	2,0	57	FHS	221-3200-125
UBF–N-K DN150	150	370	290	0,18	1,8	57	FHS	221-3200-150
UBF–N-K DN200	200	400	340	0,14	1,4	57	FHX	221-3200-200
UBF–N-K DN250	250	440	400	0,12	1,2	57	FHX	221-3200-250
UBF–N-K DN300	300	440	500	0,10	1,0	57	FHX	221-3200-300
UBF–N-K DN350	350	630	550	0,06	0,6	74	FHXX	221-3200-350
UBF–N-K DN400	400	660	620	0,05	0,5	74	FHXX	221-3200-400
UBF–N-K DN450	450	660	750	0,04	0,4	90	FHXX	221-3200-450
UBF–N-K DN500	500	660	750	0,04	0,4	90	FHXX	221-3200-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-N-K

FOR PE SDR11 PIPELINES							
Name	For pipeline dn/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-K PE63/11	63	390	150	0,25	2,5	56	221-3201-063
UBF-N-K PE90/11	90	360	210	0,25	2,5	56	221-3201-090
UBF-N-K PE110/11	110	360	220	0,20	2,0	56	221-3201-110
UBF-N-K PE160/11	160	370	290	0,18	1,8	56	221-3201-160
UBF-N-K PE225/11	225	400	340	0,14	1,4	56	221-3201-225
UBF-N-K PE315/11	315	440	400	0,10	1,0	56	221-3201-315
UBF-N-K PE355/11	355	440	500	0,06	0,6	74	221-3201-355
UBF-N-K PE400/11	400	650	550	0,05	0,5	74	221-3201-400
UBF-N-K PE450/11	450	660	620	0,04	0,4	90	221-3201-450

FOR PE SDR17 PIPELINES							
Name	For pipeline dn/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-K PE63/17	63	390	150	0,25	2,5	56	221-3207-063
UBF-N-K PE90/17	90	360	210	0,25	2,5	56	221-3207-090
UBF-N-K PE110/17	110	360	220	0,20	2,0	56	221-3207-110
UBF-N-K PE160/17	160	370	290	0,18	1,8	56	221-3207-160
UBF-N–K PE225/17	225	400	340	0,14	1,4	56	221-3207-225
UBF-N-K PE315/17	315	440	400	0,10	1,0	56	221-3207-315
UBF-N-K PE355/17	355	440	500	0,06	0,6	74	221-3207-355
UBF-N-K PE400/17	400	650	550	0,05	0,5	74	221-3207-400
UBF-N-K PE450/17	450	660	620	0,04	0,4	90	221-3207-450

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

Type UBF-N-KH

A version with an opening/passage for the drainage of medium (or, as the case may be, other functions like de-aeration, gas drainage, filling with inert gas and the like) from the closed pipeline upstream the closing balloon or in the closed section of the pipeline (if several balloon are used).

Working part – for properties and description following the sheet 2.2 –3.

Loading part – a flexible loading tube with a sealing plug, an opening/passage in the working part and loading tube ended with a ball valve with a hose extension diameter 18 mm, integrated pressure gauge, filling ball valve with a hose extension diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).

FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	L [mm]	L1 [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–N-KH DN80	80	1000	145	0,25	2,5	57	FHS	221-3300-080
UBF–N-KH DN100	100	1000	180	0,22	2,2	57	FHS	221-3300-100
UBF–N-KH DN125	125	1000	220	0,20	2,0	57	FHS	221-3300-125
UBF–N-KH DN150	150	1000	250	0,18	1,8	57	FHS	221-3300-150
UBF–N-KH DN200	200	1000	290	0,14	1,4	74	FHXX	221-3300-200
UBF–N-KH DN250	250	1000	360	0,12	1,2	74	FHXX	221-3300-250
UBF–N-KH DN300	300	1000	450	0,10	1,0	74	FHXX	221-3300-300
UBF–N-KH DN350	350	1000	490	0,06	0,6	90	FHXX	221-3300-350
UBF–N-KH DN400	400	1000	530	0,05	0,5	90	FHXX	221-3300-400
UBF–N-KH DN450	450	1000	570	0,04	0,4	90	FHXX	221-3300-450
UBF–N-KH DN500	500	1000	610	0,04	0,4	90	FHXX	221-3300-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

L - length of the loading tube to the rear balloon (from the rear side of the rear balloon to the fitting set)

L1 - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-N-KH

FOR PE SDR11 PIPELINES								
Name	For pipeline dn/OD [mm]	L [mm]	L1 [mm]	L2 [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF–N-KH PE90/11	90	1000	145	100	0,25	2,5	57	221-3301-090
UBF–N-KH PE110/11	110	1000	180	100	0,20	2,0	57	221-3301-110
UBF–N-KH PE160/11	160	1000	250	100	0,18	1,8	57	221-3301-160
UBF–N-KH PE225/11	225	1000	290	100	0,14	1,4	74	221-3301-225
UBF–N-KH PE315/11	315	1000	360	100	0,10	1,0	74	221-3301-315
UBF–N-KH PE355/11	355	1000	450	100	0,06	0,6	74	221-3301-355
UBF–N-KH PE400/11	400	1000	490	100	0,05	0,5	90	221-3301-400
UBF–N-KH PE450/11	450	1000	530	100	0,04	0,4	90	221-3301-450

FOR PE SDR17 PIPELINES								
Name	For pipeline dn/OD [mm]	L [mm]	L1 [mm]	L2 [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF–N-KH PE90/17	90	1000	145	100	0,25	2,5	57	221-3307-090
UBF–N-KH PE110/17	110	1000	180	100	0,20	2,0	57	221-3307-110
UBF–N-KH PE160/17	160	1000	250	100	0,18	1,8	57	221-3307-160
UBF-N–KH PE225/17	225	1000	290	100	0,14	1,4	74	221-3307-225
UBF–N-KH PE315/17	315	1000	360	100	0,10	1,0	74	221-3307-315
UBF–N-KH PE355/17	355	1000	450	100	0,06	0,6	74	221-3307-355
UBF–N-KH PE400/17	400	1000	490	100	0,05	0,5	90	221-3307-400
UBF–N-KH PE450/17	450	1000	530	100	0,04	0,4	90	221-3307-450

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm)

L - length of the loading tube to the rear balloon (from the rear side of the rear balloon to the fitting set)

L1 - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimální průměr otvoru pro zavedení balonu

Type UBF-N-2

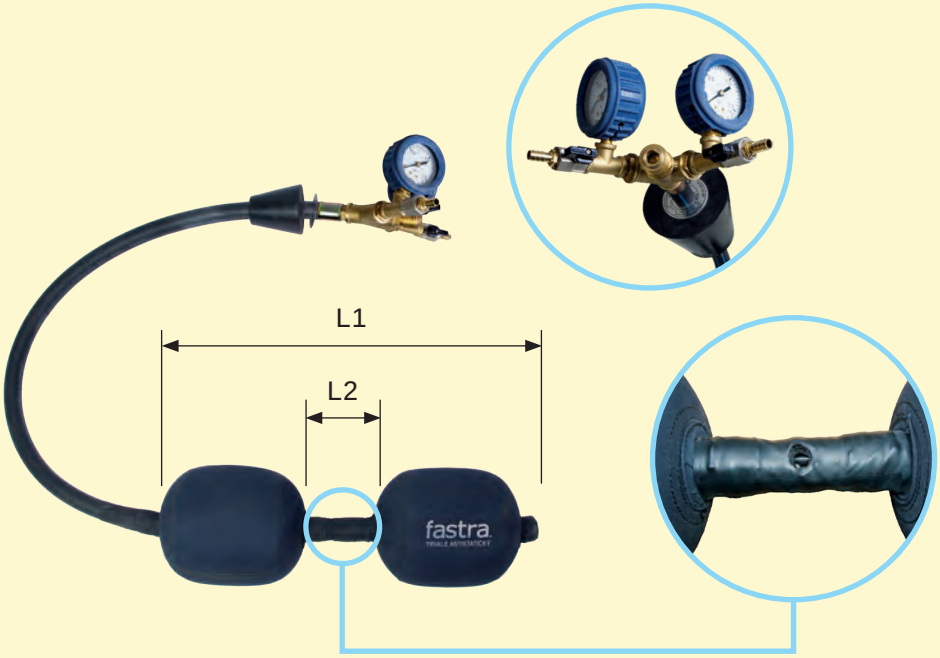
A version with two independently filled balloons and an opening/passage allowing for the control of the pressure or drainage of the medium (or, as the case may be, other functions like de-aeration, gas drainage, filling with inert gas and the like) from the area as between the two balloons.

Working part – for properties and description following the sheet 2.2 –3.

Loading part – a flexible loading tube with a sealing plug, an opening/passage in the working part of the rear balloon and the loading tube ended with a self-closing quick acting coupling system, two integrated pressure gauges with a two hose extensions diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).



FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	L [mm]	L1 [mm]	L2 [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–N-2 DN80	80	1000	390	100	0,25	2,5	57	FHS	221-3400-080
UBF–N-2 DN100	100	1000	460	100	0,22	2,2	57	FHS	221-3400-100
UBF–N-2 DN125	125	1000	540	100	0,20	2,0	57	FHS	221-3400-125
UBF–N-2 DN150	150	1000	600	100	0,18	1,8	74	FHXX	221-3400-150
UBF–N-2 DN200	200	1000	680	100	0,14	1,4	74	FHXX	221-3400-200
UBF–N-2 DN250	250	1000	820	100	0,12	1,2	74	FHXX	221-3400-250
UBF–N-2 DN300	300	1000	1000	100	0,10	1,0	90	FHXX	221-3400-300
UBF–N-2 DN350	350	1000	1080	100	0,06	0,6	90	FHXX	221-3400-350
UBF–N-2 DN400	400	1000	1160	100	0,05	0,5	90	FHXX	221-3400-400
UBF–N-2 DN450	450	1000	1240	100	0,04	0,4	140	flange DN150	221-3400-450
UBF–N-2 DN500	500	1000	1320	100	0,04	0,4	140	flange DN150	221-3400-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

L - length of the loading tube to the rear balloon (from the rear side of the rear balloon to the fitting set)

L1, L2 - for dimensions following the figure

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-N-2

FOR PE SDR11 PIPELINES								
Name	For pipeline dn/OD [mm]	L [mm]	L1 [mm]	L2 [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-2 PE90/11	90	1000	390	100	0,25	2,5	57	221-3401-090
UBF-N-2 PE110/11	110	1000	460	100	0,20	2,0	57	221-3401-110
UBF-N-2 PE160/11	160	1000	600	100	0,18	1,8	74	221-3401-160
UBF-N-2 PE225/11	225	1000	680	100	0,14	1,4	74	221-3401-225
UBF-N-2 PE315/11	315	1000	820	100	0,10	1,0	74	221-3401-315
UBF-N-2 PE355/11	355	1000	1000	100	0,06	0,6	90	221-3401-355
UBF-N-2 PE400/11	400	1000	1080	100	0,05	0,5	90	221-3401-400
UBF-N-2 PE450/11	450	1000	1160	100	0,04	0,4	90	221-3401-450

FOR PE SDR17 PIPELINES								
Name	For pipeline dn/OD [mm]	L [mm]	L1 [mm]	L2 [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-2 PE90/17	90	1000	390	100	0,25	2,5	57	221-3407-090
UBF-N-2 PE110/17	110	1000	460	100	0,20	2,0	57	221-3407-110
UBF-N-2 PE160/17	160	1000	600	100	0,18	1,8	74	221-3407-160
UBF-N–2 PE225/17	225	1000	680	100	0,14	1,4	74	221-3407-225
UBF-N-2 PE315/17	315	1000	820	100	0,10	1,0	74	221-3407-315
UBF-N-2 PE355/17	355	1000	1000	100	0,06	0,6	90	221-3407-355
UBF-N-2 PE400/17	400	1000	1080	100	0,05	0,5	90	221-3407-400
UBF-N-2 PE450/17	450	1000	1160	100	0,04	0,4	90	221-3407-450

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm)

L - length of the loading tube to the rear balloon (from the rear side of the rear balloon to the fitting set)

L1, L2 - for dimensions following the figure

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

Type UBF-N-MAX

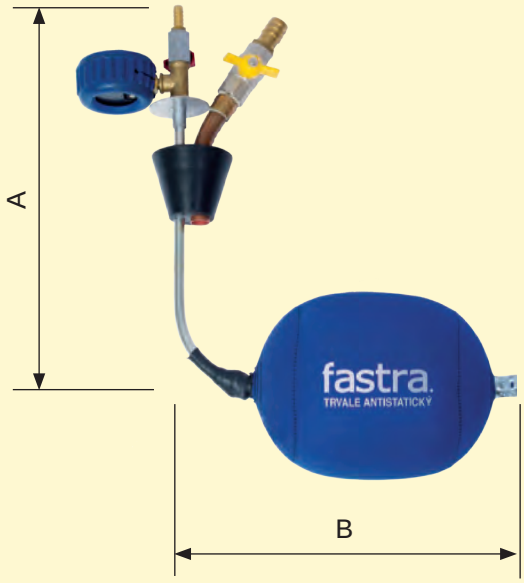
A version with a special sealing plug and an opening/passage allowing for the drainage of the medium (or, as the case may be, other functions like de-aeration, gas drainage, filling with inert gas and the like) from the closed pipeline behind the closing balloon and with a locking system. The locking system (a locking nut and fork) makes it possible for safe and gas-tight but easy and promptly fixing of the closing balloon inside the ballooning adapting piece. This structural design significantly reduces risks during work with flammable gases or other flammable media handling in explosion risks areas. In case of explosion of an explosive mixture in the pipeline, the balloon adapting pieces will remain gas-tight closed and the medium will not leak to the workplace.

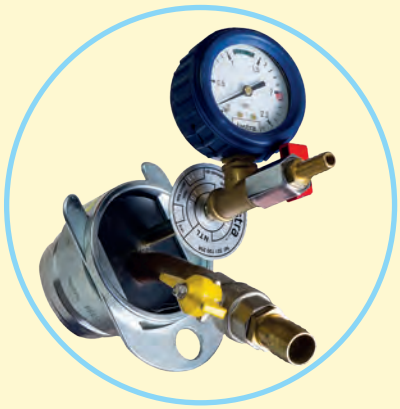
Working part – for properties and description following the sheet 2.2 –3.

Loading part – a fixed loading tube with a sealing plug, an opening/passage ended with a ball valve and a hose extension diameter 20 mm, integrated pressure gauge with a hose extensions diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).





FOR STEEL PIPELINES

Name	For pipeline DN/ID [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–N-MAX DN65	65	390	150	0,25	2,5	57	FHS	221-3500-065
UBF–N-MAX DN80	80	360	210	0,25	2,5	57	FHS	221-3500-080
UBF–N-MAX DN100	100	360	220	0,22	2,2	57	FHS	221-3500-100
UBF–N-MAX DN125	125	360	290	0,20	2,0	57	FHS	221-3500-125
UBF–N-MAX DN150	150	370	290	0,18	1,8	57	FHS	221-3500-150
UBF–N-MAX DN200	200	400	340	0,14	1,4	57	FHX	221-3500-200
UBF–N-MAX DN250	250	440	400	0,12	1,2	57	FHX	221-3500-250
UBF–N-MAX DN300	300	440	500	0,10	1,0	57	FHX	221-3500-300
UBF–N-MAX DN350	350	630	550	0,06	0,6	74	FHXX	221-3500-350
UBF–N-MAX DN400	400	660	620	0,05	0,5	74	FHXX	221-3500-400
UBF–N-MAX DN450	450	660	750	0,04	0,4	90	FHXX	221-3500-450
UBF–N-MAX DN500	500	660	750	0,04	0,4	90	FHXX	221-3500-500

Note: a locking nut and fork are not a part delivery balloons. More information following the sheet 2.2-8

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Type UBF-N-MAX

FOR PE SDR11 PIPELINES							
Name	For pipeline dn/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-MAX PE63/11	63	390	150	0,25	2,5	56	221-3501-063
UBF-N-MAX PE90/11	90	360	210	0,25	2,5	56	221-3501-090
UBF-N-MAX PE110/11	110	360	220	0,20	2,0	56	221-3501-110
UBF-N-MAX PE160/11	160	370	290	0,18	1,8	56	221-3501-160
UBF-N-MAX PE225/11	225	400	340	0,14	1,4	56	221-3501-225
UBF-N-MAX PE315/11	315	440	400	0,10	1,0	56	221-3501-315
UBF-N-MAX PE355/11	355	440	500	0,06	0,6	74	221-3501-355
UBF-N-MAX PE400/11	400	650	550	0,05	0,5	74	221-3501-400
UBF-N-MAX PE450/11	450	660	620	0,04	0,4	90	221-3501-450

FOR PE SDR17 PIPELINES							
Name	For pipeline dn/OD [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	Catalogue No.
UBF-N-MAX PE63/17	63	390	150	0,25	2,5	56	221-3507-063
UBF-N-MAX PE90/17	90	360	210	0,25	2,5	56	221-3507-090
UBF-N-MAX PE110/17	110	360	220	0,20	2,0	56	221-3507-110
UBF-N-MAX PE160/17	160	370	290	0,18	1,8	56	221-3507-160
UBF-N–MAX PE225/17	225	400	340	0,14	1,4	56	221-3507-225
UBF-N-MAX PE315/17	315	440	400	0,10	1,0	56	221-3507-315
UBF-N-MAX PE355/17	355	440	500	0,06	0,6	74	221-3507-355
UBF-N-MAX PE400/17	400	650	550	0,05	0,5	74	221-3507-400
UBF-N-MAX PE450/17	450	660	620	0,04	0,4	90	221-3507-450

Note: a locking nut and fork are not a part delivery balloons. More information following the sheet 2.2-8

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

SDR - standard dimension ratio – dn/en (the rated external diameter in mm/ rated thickness of the wall in mm)

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

Series UBF-AL

Closing balloons series UBF-Al are manually loaded balloons with a protective aluminium para-amide jacket.

The working part of the closing balloon manufactured for a specified internal diameter of the closed pipeline consists of a rubber tube with a high-strength protective jacket. The protective jacket is highly resistant to short-time flame exposure and radiating heat. Therefore these closing balloons are designated primarily for applications where the jacket can be exposed to thermal stress (e.g. welding). For the jacket technical specification following below).

As a rule, the loading part consists of a loading tube with a rubber plug, identification plate and fitting set. The structure of components of the loading part of individual standard manufactured balloons of this series is described on the following sheets of the catalogue, if necessary, it may be deliberately modified as may be required by the customer. (Following the sheet 2.2-1).

For maximum safety, the shelf life of these closing balloons is limited.

The service life (30 months, as a rule) is shown on the identification plate. The balloon may be sent to the manufacturer for the overhaul after the lapse of the service lifetime.

APPLICATION RANGE AND SPECIFICATIONS

Closing pipeline material:
Steel, cast iron, PE, other materials after consultation with the manufacturer

Interior diameter of closed pipelines:
50 to 1400 mm
- following type catalogue sheet

Media:
natural gas, non-aggressive gases, other media, after consultation with the manufacturer

Pressure load:
- **Maximum positive pressure in the closed pipeline** - following the type catalogue sheet
- **Maximum positive pressure in the balloon**
- following the type catalogue sheet

Working temperature:
+5 to +28 °C

Protetcive jacket:
- **Tensile strength:**
2000 N
- **Short-term flame exposure protection:**
A1 – compliance with CSN EN ISO 11612:2008
- **Radiation heat protection:**
version level B1, C4, D1, E3, F1 subject to CSN ISO 11612

Type UBF-AL

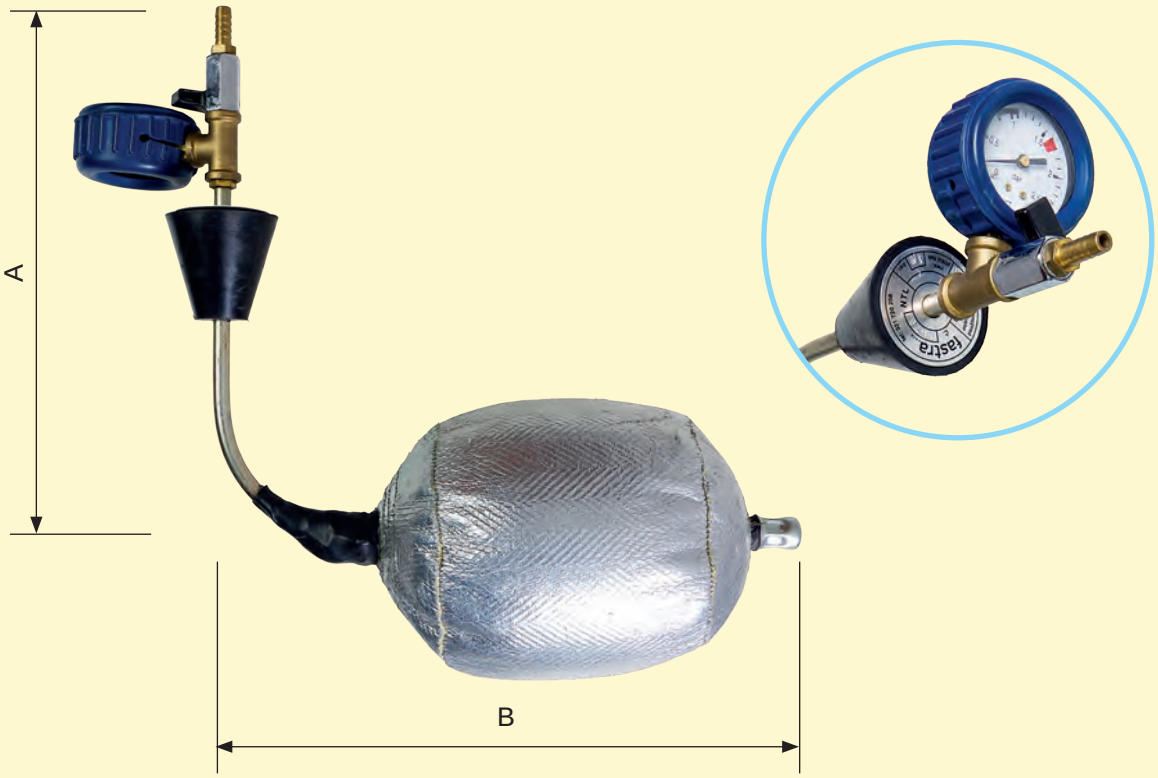
Basic version of the UBF-AL series.

Working part – for properties and description following previous page.

Loading part – a fixed loading tube with a sealing plug, integrated pressure gauge, filling ball valve with a hose extension diameter 10 mm, identification plate.

This type of the closing balloon in this versions is made of materials that must not be exposed to any organic solvents, oil products, fats, acids, caustics and their vapours.

The version made be modified based on customer requirements (following the sheet 2.2-1).



For steel pipelines

Name	For pipeline DN/ID [mm]	A [mm]	B [mm]	P1 [bar]	P2 [bar]	D [mm]	H	Catalogue No.
UBF–AL DN80	80	360	210	0,25	2,5	57	FHS	221-4100-080
UBF–AL DN100	100	360	220	0,22	2,2	57	FHS	221-4100-100
UBF–AL DN125	125	360	290	0,20	2,0	57	FHS	221-4100-125
UBF–AL DN150	150	370	290	0,18	1,8	74	FHXX	221-4100-150
UBF–AL DN200	200	400	340	0,14	1,4	74	FHXX	221-4100-200
UBF–AL DN250	250	440	400	0,12	1,2	90	FHXX	221-4100-250
UBF–AL DN300	300	440	500	0,10	1,0	90	FHXX	221-4100-300
UBF–AL DN400	400	660	620	0,05	0,5	140	flange DN150	221-4100-400
UBF–AL DN500	500	660	750	0,03	0,3	140	flange DN150	221-4100-500

In addition to the above dimensions, balloons may be manufactured with dimensions individually requested by customers.

A, B - for dimensions following the figure (informatively)

P1 - maximum medium pressure in the closed pipeline

P2 - maximum balloon filling pressure

D - minimum diameter of the opening for the balloon loading

H - recommended type of FASTRA ballooning neck for the balloon loading

Closing balloons RVT

Closing balloons RVT are dimension-variable balloons for the temporary closing of the media flow in the pipeline of varying interior diameter.

The working part of the closing balloon is made of a special rubber mixture. The mixture composition is defined with regard to the properties of medium flowing in the pipeline to be closed and mechanical properties of the rubber that allow in combination with a specially designed shape and dimensions for the closing of the pipeline of varying interior diameter.

The loading part consists of various components based on specific balloon application requirements. The structure of the loading part components is further described on the following catalogue sheets, however, if necessary, it may be flexibly modified according to the wish of the customer.

For safety reasons, the service life of some applications used for pipeline closing (e.g. closing of flammable gas pipelines) may be limited in time.

The service life is shown on the identification plate or on the pressed-in edge of the balloon. After the lapse of such a service life period, the product may be sent to the manufacturer for overhaul.

APPLICATION RANGE AND SPECIFICATIONS

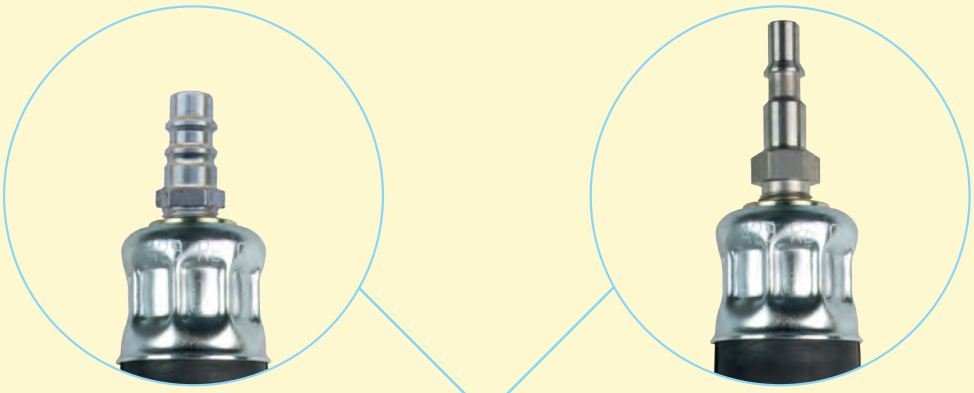
For the application range and specifications of individual types of closing balloons RVT following respective catalogue sheets.

NOTES

RVT for balloon sets

VERSION RVB 2000-F1

VERSION RVB 2010-F1



1

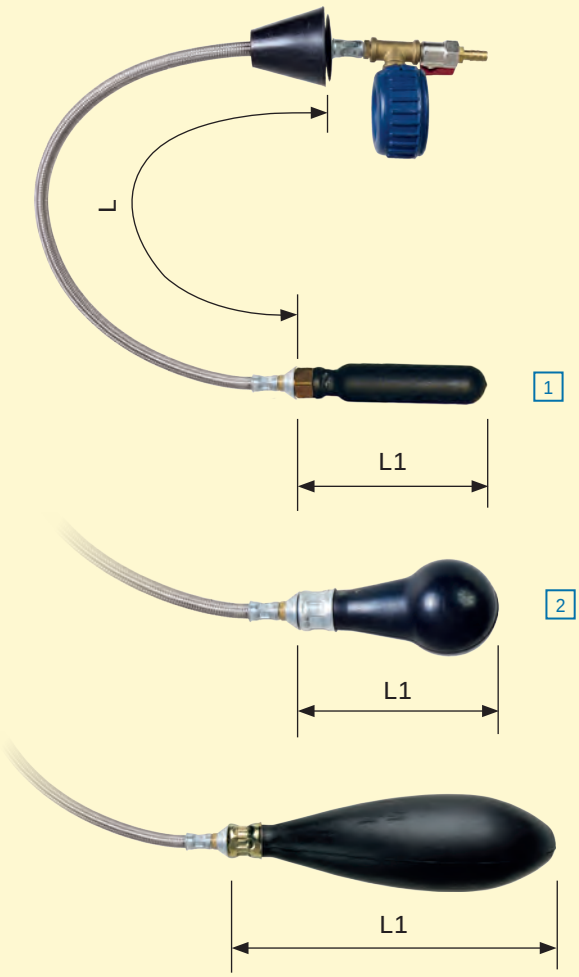
2

Pos.No.	Name	D [mm]	Catalogue No.
1.	RVT 65-130 RVB 2000-F1	65-130	221-5100-010
1.	RVT 65-130 RVB 2010-F1	65-130	221-5101-010
2.	RVT 140-300 RVB 2000-F1	140-300	221-5100-020
2.	RVT 140-300 RVB 2010-F1	140-300	221-5101-020

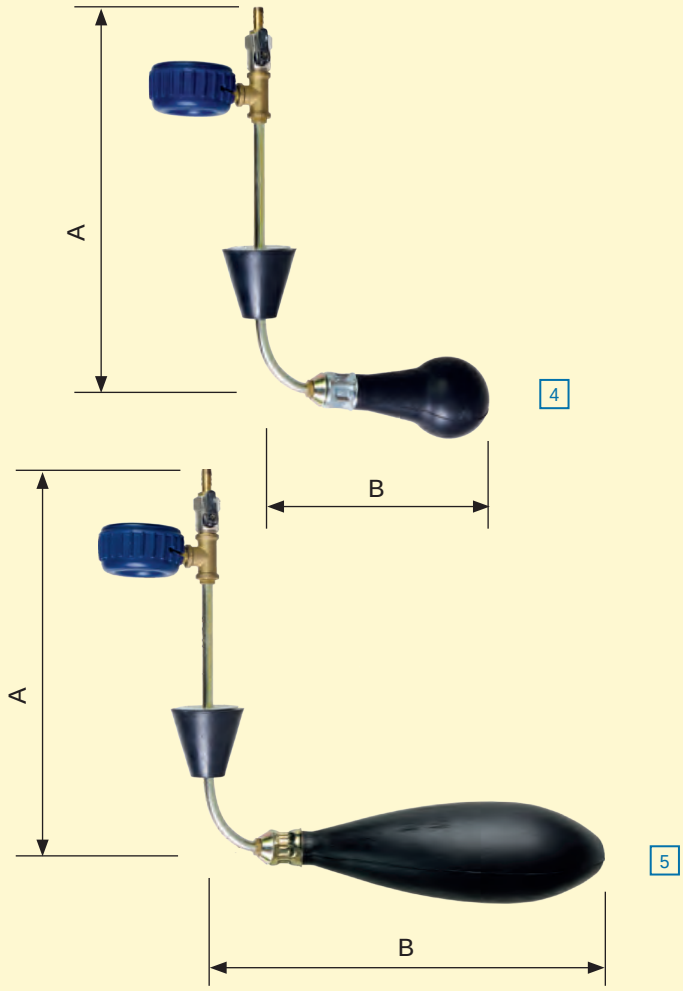
D - range closed pipeline internal diameter

Other RVT

WITH FLEXIBLE LOADING PART



WITH FIXED LOADING PART



FOR LOW PRESSURE PIPELINE

Pos. No.	Name	A [mm]	B [mm]	L [mm]	L1 [mm]	Catalogue No.
1.	RVT 32-80 NTLF	-	-	1000	150	221-5202-010
2.	RVT 65-150 NTLF	-	-	1000	180	221-5202-020
3.	RVT 140-250 NTLF	-	-	1000	340	221-5202-030
4.	RVT 65-150 NTL	340	220	-	-	221-5201-020
5.	RVT 140-250 NTL	340	390	-	-	221-5201-030

FOR SEWERS

Pos. No.	Name	A [mm]	B [mm]	L [mm]	L1 [mm]	Catalogue No.
1.	RVT 32-80 KF	-	-	1000	150	221-5204-010
2.	RVT 80-150 KF	-	-	1000	180	221-5204-020
3.	RVT 140-250 KF	-	-	1000	340	221-5204-030
4.	RVT 65-150 K	340	220	-	-	221-5203-020
5.	RVT 140-250 K	340	390	-	-	221-5203-030

A, B, L1 - for dimensions following the figure (informatively, the "B" dimension as metered at the atmospheric pressure inside the balloon)

L - length of the loading tube (from the pressed in edge of the balloon to the fitting set)

Note:
- The balloon filling pressure is given on thee identification plate.
- Sewer closing balloons do not have sealing cones.

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Special balloons

In the case temporary closing large diameter pipeline from special material or with specific properties transferred medias etc. when is can not be use standard balloons, is necessary use special balloons.

The construction is very specific, because is subordinate purposes their using. Very specific is also material from which are the balloons made. From this reason are this balloons making just for order.

On the picture bellow is mentioned a few examples of special balloons. In the case of your interest of production specific balloons, please contact our business representative or our office.

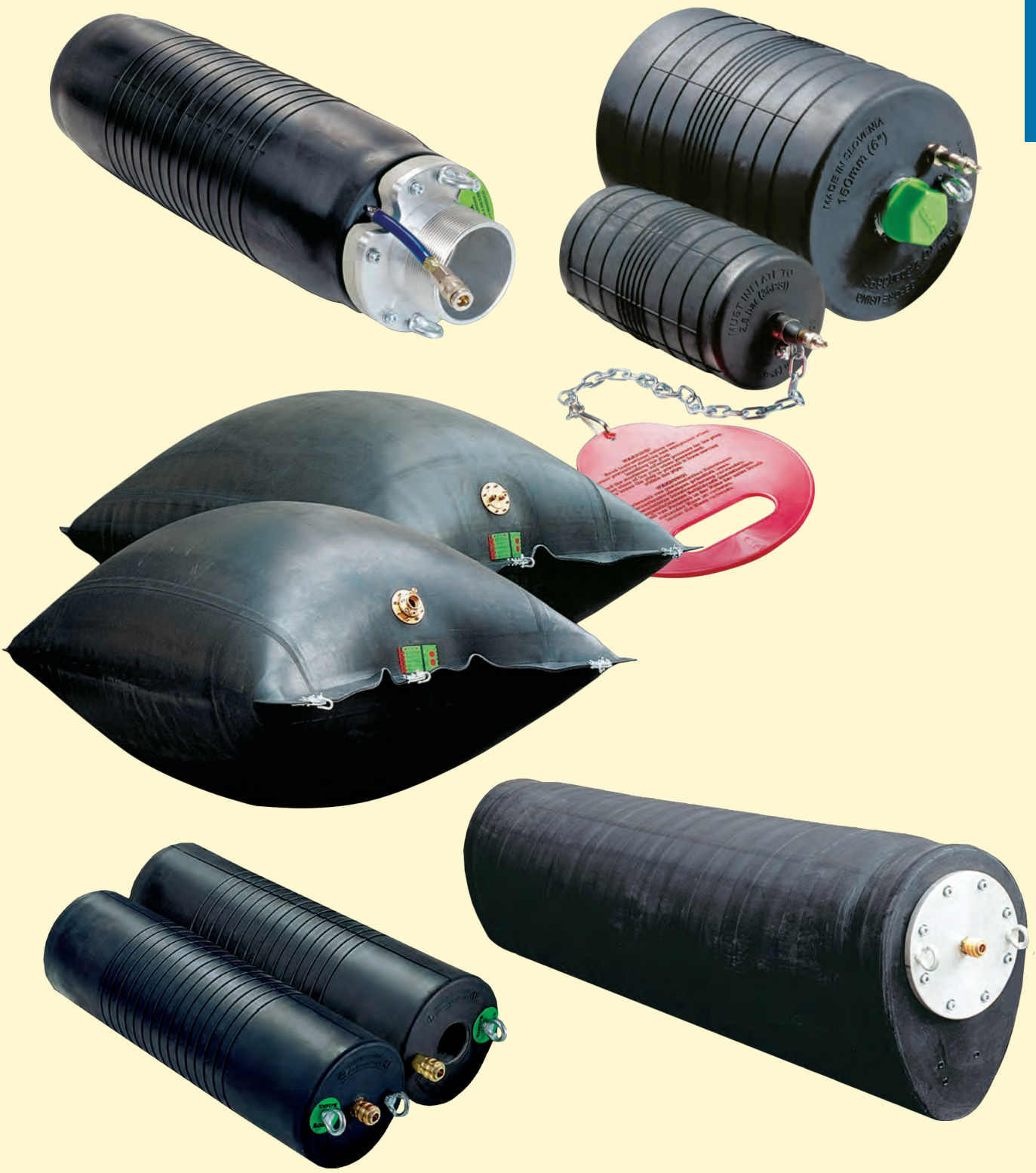
NOTES

Pneumatic sealing bags and packers

Pneumatic sealing bags are using in the area of sewage pipelines. Their purpose is temporary closing pipeline for stopping flow during repair or the closure of part of the pipeline for the performance of pressure tests. Delivered assortment include a wide range of different designs useful for all type sewage pipeline.

Pneumatic packers are using during trenchless piping repairs. Their construction is responsible the requirements of the given pipe repairs. They are delivered in wide assortment types, diameter and lengths.

In the case of your interest about this ware, please contact our business representative or our office.



NOTES

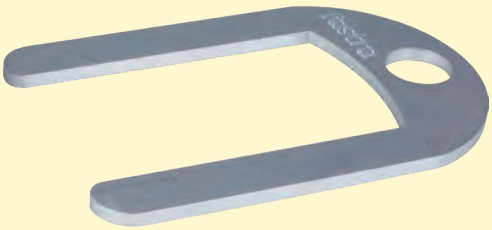
Optional accessories closing balloons

Optional accessories closing balloons is used for increasing safety while using closing balloons.

1

2

3



4

Pos. No.	Name	Catalogue No.
1.	Union nut and fork for UBF-MAX/2,5”	221-8100-001
2.	Union nut and fork for UBF-MAX/4”	221-8100-003
3.	Union nut for UBF-MAX/2,5”	222-8100-011
3.	Union nut for UBF-MAX/4”	222-8100-013
4.	Fork for UBF-MAX/2,5”	222-8100-021
4.	Fork for UBF-MAX/4”	222-8100-023

Locking nut and fork of different connection thread and dimensions may be manufactured on request.

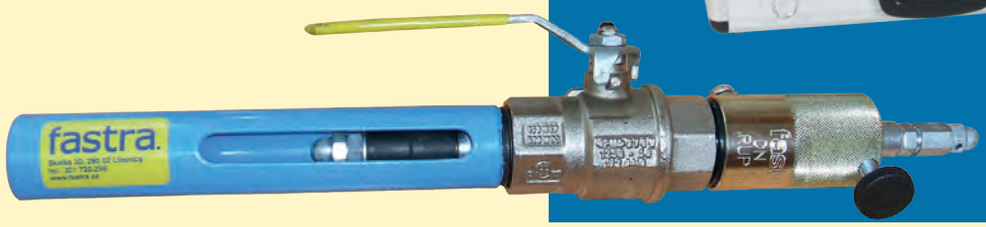
NOTES

fastra.

LINE STOP DEVICE

RUP-F2

for temporary pipeline closing
up to 5 bar



APPLICATION AND DESCRIPTION

The RUP-F2 device is used for temporary closing of pipelines with an interior medium positive pressure and for the follow up replacement of defective closing fittings (ball valve) or short-term pipeline shut-downs using rubber stopplers.

A stoppler made of special antistatic rubber installed in the loading chamber with a de-aeration valve is introduced to the pipeline via a closing fitting by means of loading rod or a flexible cable hose. The pipeline is closed by the extension of the rubber element in the pipeline by turning the control nut provided in the control part of the loading rod or the flexible cable hose.

The flexible cable hose is used primarily at places where there is lack of handling space where the loading rod cannot be used for instance because of distance or pipeline bends between the place of closure and loading.

The RUP-F2 devices are designed and manufactured as kit systems allowing for a high level of variability. Normally they are supplied as the below described sets or sets individual configured based on customer´s requirements.

The devices comply with requirements of CSN EN 1775:2008 art. 8.2.3 as they are conceived so that all works could be done without any media leaks.

The application range of individual sets may be extended using accessory equipment (following the sheet 2.3-2).

APPLICATION RANGE

Closed pipeline material and diameter:

with the loading rod
- steel pipeline DN/ID 15 to 50 mm (1/2“to 2“)*
- PE-HD pipeline dn/OD 20 to 63 mm

with cable hose
- steel pipeline DN/ID 20 to 50 mm (3/4“to 2“)
- PE-HD pipeline dn/OD 25 to 63 mm

Maximum pressure inside the closed pipeline:
up to 5 bar**

Media:
Natural gas, water, other non-aggressive gases and liquids. Other media may be used based on consultation with the manufacturer

Working temperature:
-10/+70°C

* Set RUP-F2/Mini 11 to 14 mm

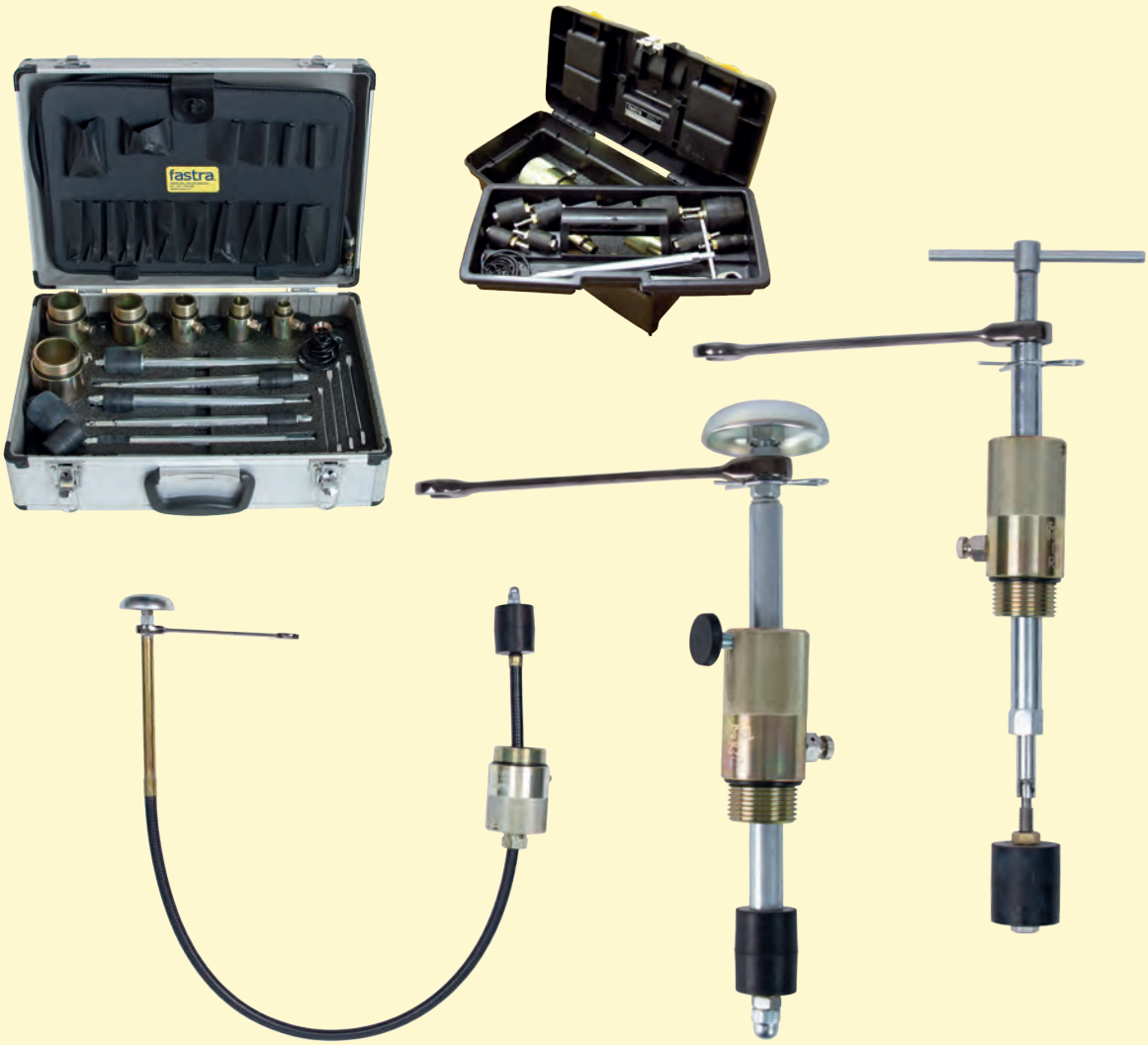
** maximum pressure load based on the type of the set and application method

LINE STOP DEVICE

2.3 Device RUP-F2

Set Description RUP-F2

RUP-F2 set description Standard sets are composed of individual RUP-F2 device elements to allow for systemic and complex execution of works in the scope as specified below.



TECHNICAL PARAMETERS

Total length with the loading rod fully retracted:
T, TL 270-330 mm (depening on the dimension),
Special 340 mm

Maximum protrusion of the loading rod (measured from the chamber edge):
T, TL 150-210 mm (according to the dimension),
Special 150 mm

Set weight including the transport box:
T/TL/L9/10/8 kg, Special 6.5 kg

RANGE OF APPLICATION OF INDIVIDUAL SETS WITH BASIC ACCESSORIES

Set	Accessory	Closed pipe internal diameter		Connection thread dimension	Catalogue No.
		Steel DN/ID [mm]	PE d_n/OD [mm]		
RUP-F2/T	loading rods	15 - 50	20 - 63	G1/2“ to G2“ external*	231-1200-010
RUP-F2/TL	loading rods	15 - 50	20 - 63	G1/2“ to G2“ external*	231-1200-020
	cable hose	20 - 50	25 - 63	G3/4“ to G2“ external*	
RUP-F2/L	cable hose	20 - 50	25 - 63	G3/4“ to G2“ external*	231-1200-030
RUP-F2/special	control key	20 - 50	25 - 63	G3/4“ to G2“ external*	231-1200-040

* Sets with internal thread may be manufactured on request

For the content of individual chapters following the sheet 2.3-1.2

RUP-F2 set elements

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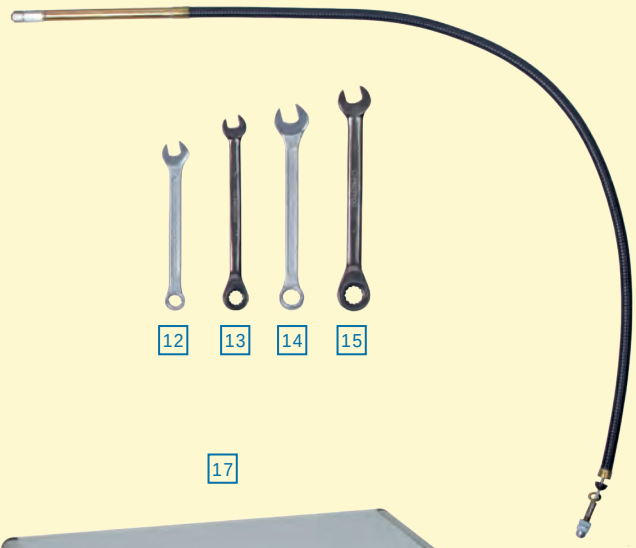

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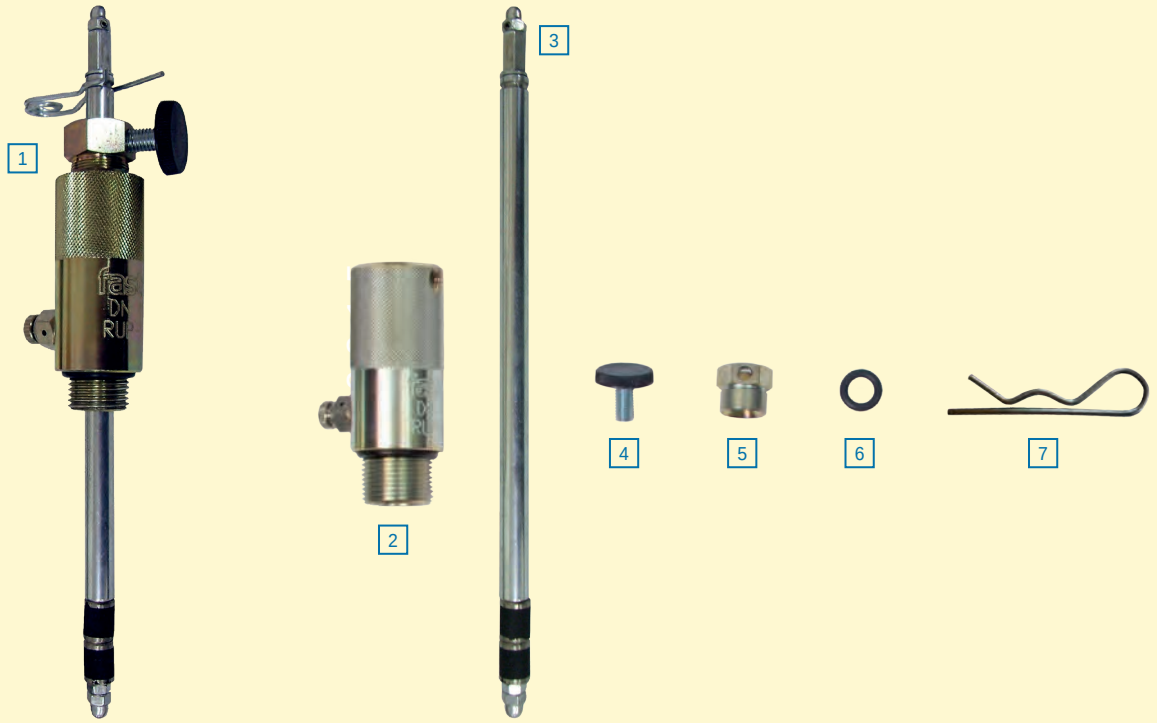
RUP-F2 sets

Pos. No.	Name	Catalogue No.	No. of units per set			
			RUP-F2/T Cat. No. 231-1200-010	RUP-F2/TL Cat. No. 231-1200-020	RUP-F2/L Cat. No. 231-1200-030	RUP-F2/Speciál Cat. No. 231-1200-040
1.	Chamber RUP-F2 DN15	232-1101-020	1	1		
1.	Chamber RUP-F2 DN20	232-1101-030	1	1	1	1
1.	Chamber RUP-F2 DN25	232-1101-040	1	1	1	1
1.	Chamber RUP-F2 DN32	232-1101-050	1	1	1	1
1.	Chamber RUP-F2 DN40	232-1101-060	1	1	1	1
1.	Chamber RUP-F2 DN50	232-1101-070	1	1	1	1
2.	Guide rod RUP-F2 DN15	232-1102-020	1	1		
2.	Guide rod RUP-F2 DN20	232-1102-030	1	1		
2.	Guide rod RUP-F2 DN25	232-1102-040	1	1		
2.	Guide rod RUP-F2 DN32	232-1102-050	1	1		
2.	Guide rod RUP-F2 DN40	232-1102-060	1	1		
2.	Guide rod RUP-F2 DN50	232-1102-070	1	1		
3.	Rubber cylinder DN15	232-1103-020	2	2		
3.	Rubber cylinder DN20	232-1103-030	2	2	2	
3.	Rubber cylinder DN25	232-1103-040	1	1	1	
3.	Rubber cylinder DN32	232-1103-050	1	1	1	
3.	Rubber cylinder DN40	232-1103-060	1	1	1	
3.	Rubber cylinder DN50	232-1103-070	1	1	1	
4.	Rubber cylinder RUP-F2/Special DN20	232-1104-030				2
4.	Rubber cylinder RUP-F2/Special DN25	232-1104-040				2
4.	Rubber cylinder RUP-F2/Special DN32	232-1104-050				2
4.	Rubber cylinder RUP-F2/Special DN40	232-1104-060				2
4.	Rubber cylinder RUP-F2/Special DN50	232-1104-070				2
5.	Control tool RUP-F2/Special	232-1105-001				1
6.	Locking screw M8x20mm	232-1105-010	2	2		
6.	Locking screw M8x30mm	232-1105-011	3	3		
6.	Locking screw M8x40mm	232-1105-012	1	1		
7.	Cable shift 1,2m	232-2002-012		1	1	
8.	Cable shift locking nut	232-1105-021		1	1	
9.	Cable shift sealing ring	303-0114-500		1	1	
10.	Split cotter pin RUP-F2	232-1105-030	1	1		1
11.	Handle RUP-F2	232-1105-031	1	1		
12.	Flat wrench No.10	142-2105-010	1	1		
13.	Ratchet combination wrench No.10	142-2106-010	1	1		
14.	Flat wrench No.13	142-2105-013	1	1	1	
15.	Ratchet combination wrench No.13	142-2106-013	1	1	1	1
16.	Tansport box RUP-F2/T	232-1105-050	1			
17.	Tansport box RUP-F2/TL	232-1105-051		1	1	
16.	Tansport box RUP-F2/Special	232-1105-052				1
18.	Sealing ring set RUP-F2/T	232-1105-040	1			
19.	Sealing ring set RUP-F2/TL	232-1105-041		1	1	
20.	Sealing ring set RUP-F2/Special	232-1105-042				1

Set RUP-F2/Mini

A set designated for the closing of a pipeline with an interior positive pressure at a place where the standard ½´´ closing preparation of the set RUP-F2 cannot be used because of a thicker wall of the pipeline and therefore a smaller internal diameter of the pipeline. The set is supplied with its basic accessories in line with the above specified set element sheet.



Pos. No.	Name	Catalogue No.	No. of units
1.	**RUP-F2/Mini**	**231-1201-001**	
2.	Chamber RUP-F2/Mini (1/2“)	232-1101-010	1
3.	Guide rod RUP-F2/Mini	232-1102-010	1
4.	Locking screw M8x20mm	232-1105-010	1
5.	Locking nut Mini	232-1105-020	1
6.	Sealing ring Mini	303-0110-400	1
7.	Split cotter pin RUP-F2	232-1105-030	1

SET APPLICATION RANGE

Interior diameter of the closed pipeline:
11 - 14 mm

Closed pipeline material:
Steel, PE, other materials may be used subject to prior consultation with the manufacturer.

Media:
Natural gas, water, other non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the closed pipeline:
up to 3 bar

Working temperature: -20/+70°C

TECHNICAL PARAMETERS

Connection thread dimension:
G½“ external to CSN EN 228-1:2003

Total length with the loading rod fully retracted:
255 mm

Maximum protrusion of the loading rod (measured from the chamber edge):
115 mm

Weight:
0,45 kg

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RUP-F2 optional accessories

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Pos. No.	Name	Catalogue No.
1.	Guide rod RUP-F2 separate DN15	232-2001-020
	Guide rod RUP-F2 separate DN20	232-2001-030
	Guide rod RUP-F2 separate DN25	232-2001-040
	Guide rod RUP-F2 separate DN32	232-2001-050
	Guide rod RUP-F2 separate DN40	232-2001-060
	Guide rod RUP-F2 separate DN50	232-2001-070
2.	Cable shift 1,2 m	232-2002-012
	Cable shift 1,5 m	232-2002-016
	Cable shift 2,0 m	232-2002-020
3.	Silicon grease 70g	252-2000-004
4.	Connecting cable	sheet 3.2-3
5.	Preparations OH – removal of small pipeline irregularities and sharp edges	sheet 3.3-1.1

Note:

The pliers connecting cable (pos. No. 4) is provided for the conductive interconnection of the pipeline and the dismantled unit in order to prevent voltage potential when dismantling the unit.

NOTES

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LINE STOP DEVICE

D - F1

for temporary suspension of media flow in pipelines

APPLICATION AND DESCRIPTION

The D-F1 devices are used for the temporary closing of pipelines with interior gas media positive pressure upstream cleaning T-pieces built in distribution pipelines.

The stoppler element made of special antistatic rubber located in the loading chamber with a de-aeration valve is loaded to a section of the pipeline upstream the cleaning T-piece after the dismantling of a blade closure using the loading bar.

The pipeline is closed by extending the rubber element in the pipeline by turning the control nut located in the control part of the loading bar.

The devices are designed so that all works including the closing of the T-piece with a plug could be executed without any media leaks.

The devices D-F1 are designed and manufactured as kit systems allowing for a high level of variability. They are compatible with some elements of the devices RUP-F2 or, as the case may be, UDP-F1 (subject to specific conditions). Normally they are supplied as the below described sets or sets individual configured based on customer´s requirements.

The devices comply with requirements of CSN EN 1775:2008, art. 8.2.3. as they are designed in a way excluding any leak of media during any operation.

WORKING RANGE

Diameter and material of the closed pipeline:
Steel pipeline DN/ID 32 – 80 mm (5/4“ to 2“)

Media:
Natural gas, other non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the closed pipeline:
0,03 bar

Working temperature:
-10/+50°C

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LINE STOP DEVICE

2.4 Device D-F1

Sets D-F1

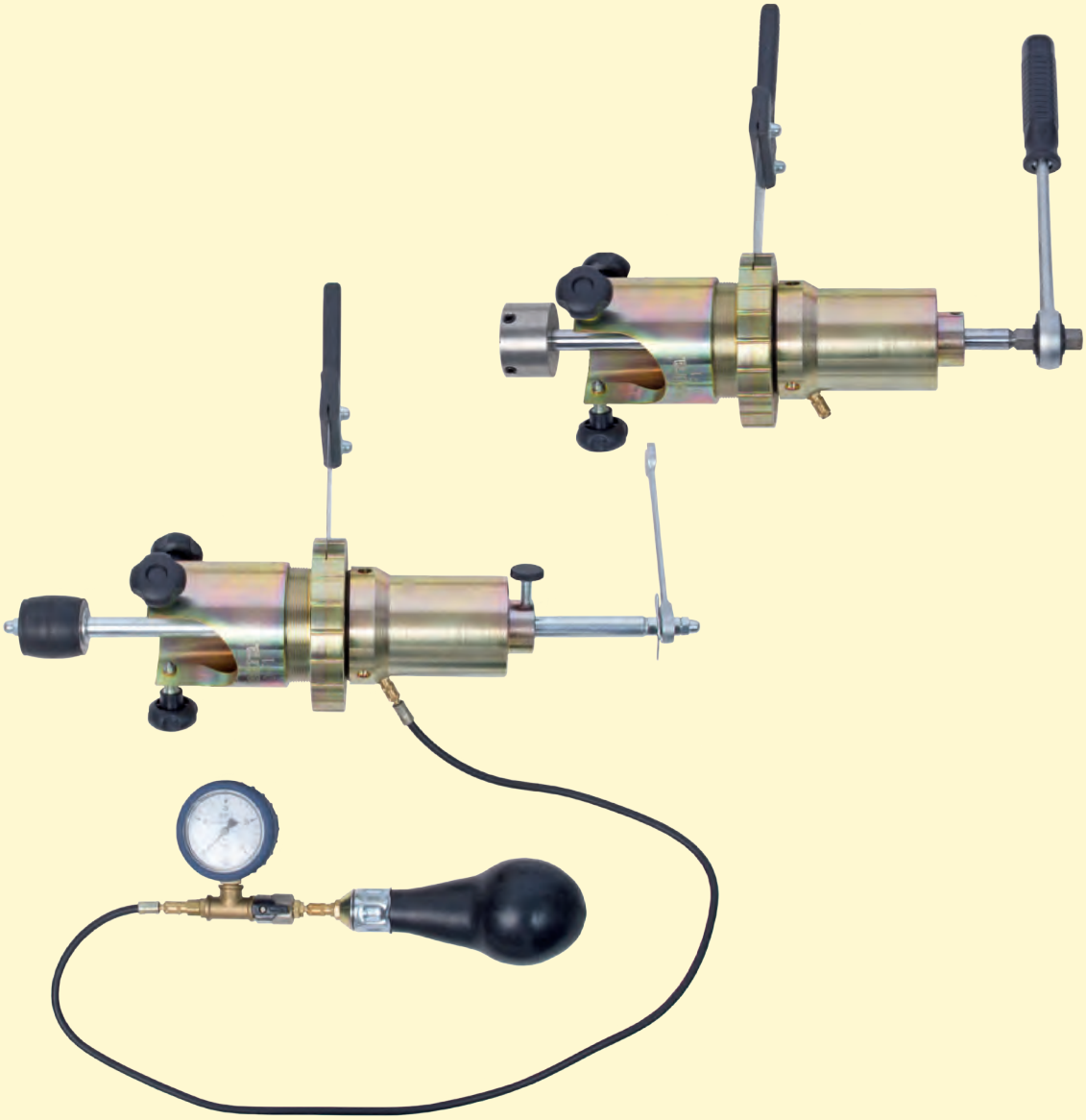
2.4-1.1 Set D-F1/1

2.4-1.2 Set D-F1/2

Set D-F1/1

A set used for temporary closing of pipelines with interior positive pressure of gas media upstream cleaning T-pieces built in the pipeline in the application range specified below.

The set is supplied with its basic accessories as specified below.



SET APPLICATION RANGE

Internal diameter of the closed pipeline:
32 - 50 mm (5/4“ - 2“)

Closed pipeline material:
Steel, non-aggressive gas, other media subject to consultation with the manufacturer

Media:
Natural gas, other non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the closed pipeline:
up to 0,03 bar

Working temperature: -20/+70°C

TECHNICAL PARAMETERS

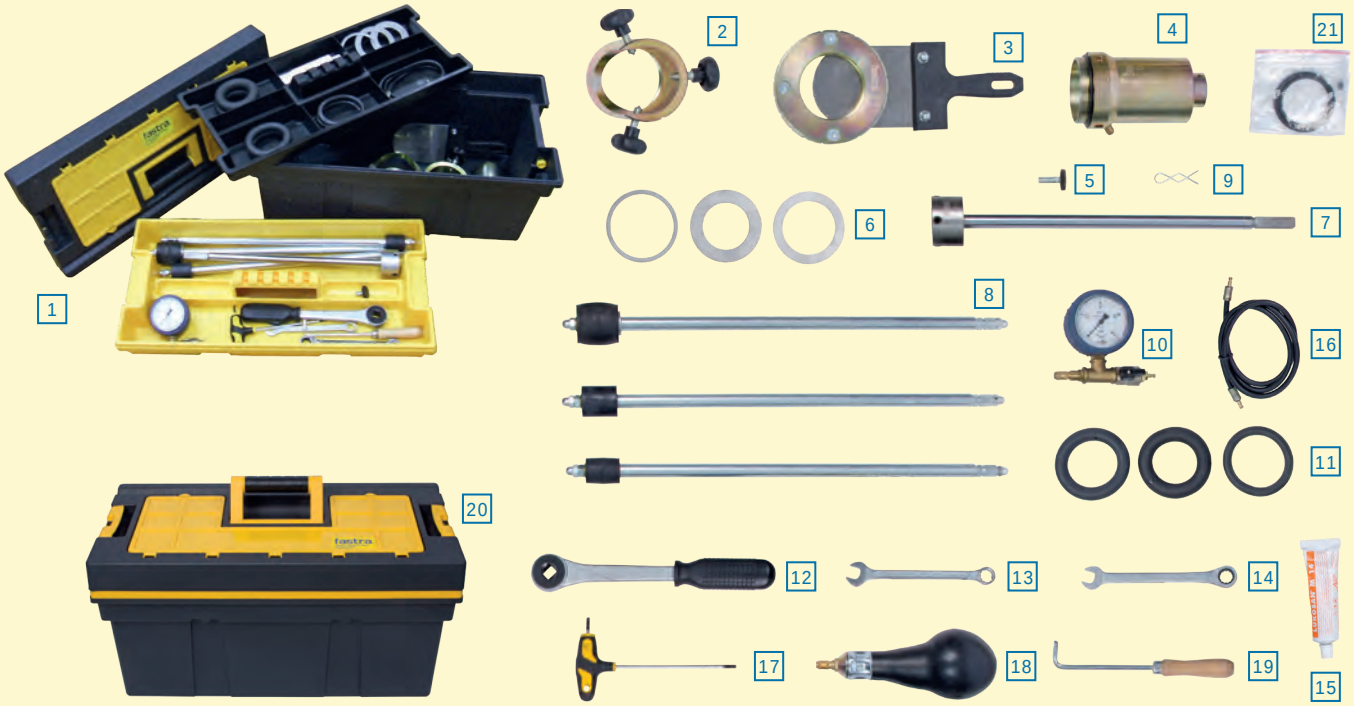
Total length with fully retracted loading or plug bar:
700 mm

Maximum protrusion of the loading bar (metered from the edge of the T-piece):
160 mm

Maximum width without the blade (metered from the T-piece axis in the straight direction):
100 mm

Weight of the assembled set /weight including the transport box:
8 kg / 19 kg

SET D-F1/1

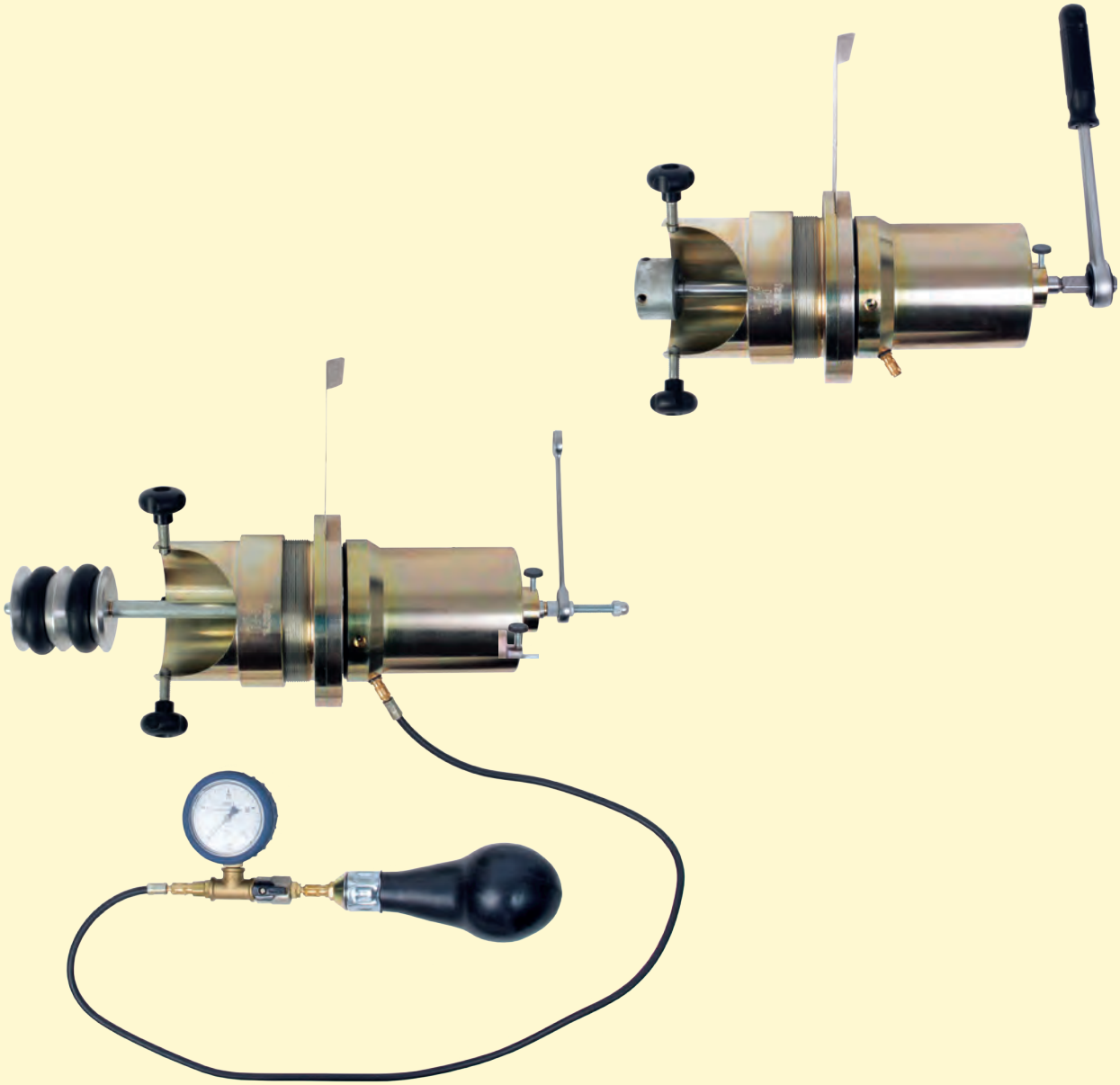


Pos. No.	Name	Catalogue No.	No. of units
1.	**Set D-F1/1**	**241-1100-001**	
	The set contains:		
2.	Fixing part D-F1/1	242-1100-001	1
3.	Part with closure plate D-F1/1	242-1100-002	1
4.	Chamber D-F1/1	242-1100-003	1
5.	Locking screw M8x30mm	232-1105-011	1
6.	Support ring D-F1 5/4“	242-1100-004	1
6.	Support ring D-F1 6/4“	242-1100-005	1
6.	Support ring D-F1 2“	242-1100-006	1
7.	Plugging rod D-F1/1	242-1100-007	1
8.	Guide rod D-F1 5/4“	242-1100-008	1
8.	Guide rod D-F1 6/4“	242-1100-009	1
8.	Guide rod D-F1 2“	242-1100-010	1
9.	Split cotter pin RUP-F2	232-1105-030	1
10.	Pressure gauge part D-F1 0-40 mbar	242-1100-011	1
11.	Sealing ring D-F1 5/4“	242-1100-012	2
11.	Sealing ring D-F1 6/4“	242-1100-013	2
11.	Sealing ring D-F1 2“	242-1100-014	2
12.	Ratchet ½“	142-2103-001	1
13.	Flat wrench No.13	142-2105-013	1
14.	Ratchet combination wrench No.13	142-2106-013	1
15.	Silicon grease 70g	252-2102-011	1
16.	Testing hose D-F1	242-1100-015	1
17.	Allen wrench No.4	142-2103-004	1
18.	Filling balloon D-F1	242-1100-016	1
19.	Sealing ring guide pin D-F1	242-1100-017	1
20.	Transport box D-F1	242-1100-018	1
21.	Spare parts set D-F1/1	242-1100-019	1 set

Set D-F1/2

A set used for temporary closing of pipelines with interior positive pressure of gas media upstream cleaning T-pieces built in the pipeline in the application range specified below.

The set is supplied with its basic accessories as specified below.



SET APPLICATION RANGE

Internal diameter of the closed pipeline:
65 - 80 mm (2,5“ - 3“)

Closed pipeline material:
Steel, non-aggressive gas, other media subject to consultation with the manufacturer

Media:
Natural gas, other non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the closed pipeline:
up to 0,03 bar

Working temperature: -20/+70°C

TECHNICAL PARAMETERS

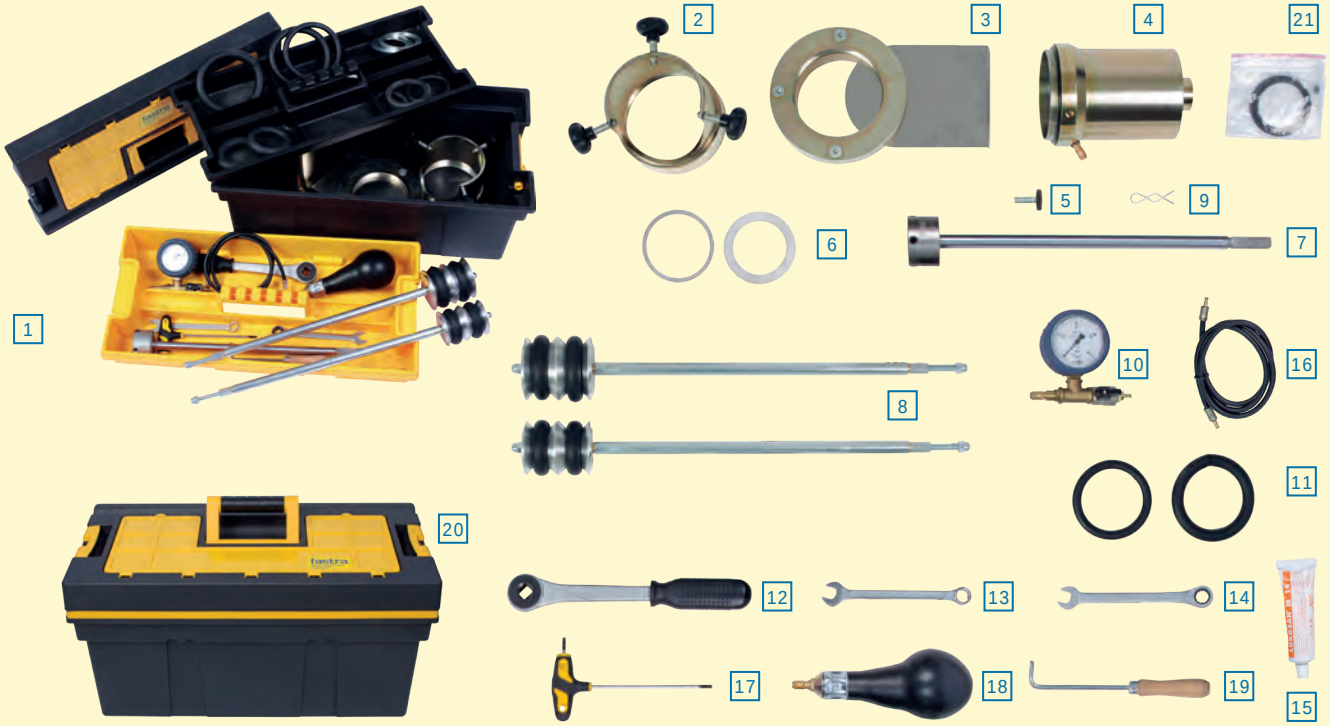
Total length with fully retracted loading or plug bar:
800 mm

Maximum protrusion of the loading bar (metered from the edge of the T-piece):
220 mm

Maximum width without the blade (metered from the T-piece axis in the straight direction):
120 mm

Weight of the assembled set /weight including the transport box:
11 kg / 24 kg

Set D-F1/2



Pos. No.	Name	Catalogue No.	No. of units
1.	**Set D-F1/2**	**241-1200-001**	
	The set includes:		
2.	Fixing part D-F1/2	242-1200-001	1
3.	Part with closure plate D-F1/2	242-1200-002	1
4.	Chamber D-F1/2	242-1200-003	1
5.	Locking screw M8 x30mm	232-1105-011	1
6.	Support ring D-F1 2,5“	242-1200-004	1
6.	Support ring D-F1 3“	242-1200-005	1
7.	Pluging rod D-F1/2	242-1200-007	1
8.	Guide rod D-F1 2,5“	242-1200-008	1
8.	Guide rod D-F1 3“	242-1200-009	1
9.	Split cotter pin RUP-F2	232-1105-030	1
10.	Pressure gauge part D-F1 0-40 mbar	242-1100-011	1
11.	Sealing ring D-F1 2,5“	242-1200-012	2
11.	Sealing ring D-F1 3“	242-1200-013	2
12.	Ratchet ½“	142-2103-001	1
13.	Flat wrench No.13	142-2105-013	1
14.	Ratchet combination wrench No.13	142-2106-013	1
15.	Silicon grease 70g	252-2102-011	1
16.	Testing hose D-F1	242-1100-015	1
17.	Allen wrench No.4	142-2103-004	1
18.	Filling balloon D-F1	242-1100-016	1
19.	Sealing ring loading pin D-F1	242-1100-017	1
20.	Transport box D-F1/2	242-1200-018	1
21.	Spare parts set D-F1/2	242-1200-019	1 set

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PIPELINE CLOSING DEVICE

UDP-F1

for temporary suspension of media flow in pipelines

APPLICATION AND DESCRIPTION

The UDP-F1 device is used for the temporary closing of pipelines with interior gas media positive pressure using closing balloons.

The balloon is made of special antistatic rubber fixed to a plastic hose with pressed in safety quick acting coupling system installed in the loading chamber with a de-aeration valve. It is introduced to the pipeline through a loading fitting. The pipeline is closed upstream a closing element by filling the balloon with air or an inert gas.

The devices UDP-F1 are designed and manufactured as kit systems allowing for a high level of variability. Normally they are supplied as the below described sets or sets individual configured based on customer´s requirements. The application range of individual sets may be extended using optional accessories (following the sheet 2.3-2).

The devices comply with requirements of CSN EN 1775:2008, art. 8.2.3. as they are designed in a way excluding any leak of media during any operation.

WORKING RANGE

Diameter and material of the closed pipeline:
Steel pipeline DN/ID 20-80mm (¾“ to 3“)
PE pipeline d_n/OD 25-90mm

Media:
Natural gas, water, other non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure inside the closed pipeline:
0,6 bar

Maximum balloon filling pressure:
2,0 bar

Working temperature:
-10/+70°C

2.5 Device UDP-F1

Sets UDP-F1

2.5-1.1 Set application range

Set content

2.5-2 **UDP-F1 optional accessories**

Set application range

TECHNICAL PARAMETERS

Total length necessary to install and operate the system (metered along the axis of the loading chamber):
300 mm

Maximum protrusion of the balloon: (metered from the edge of the loading chamber):
800 mm

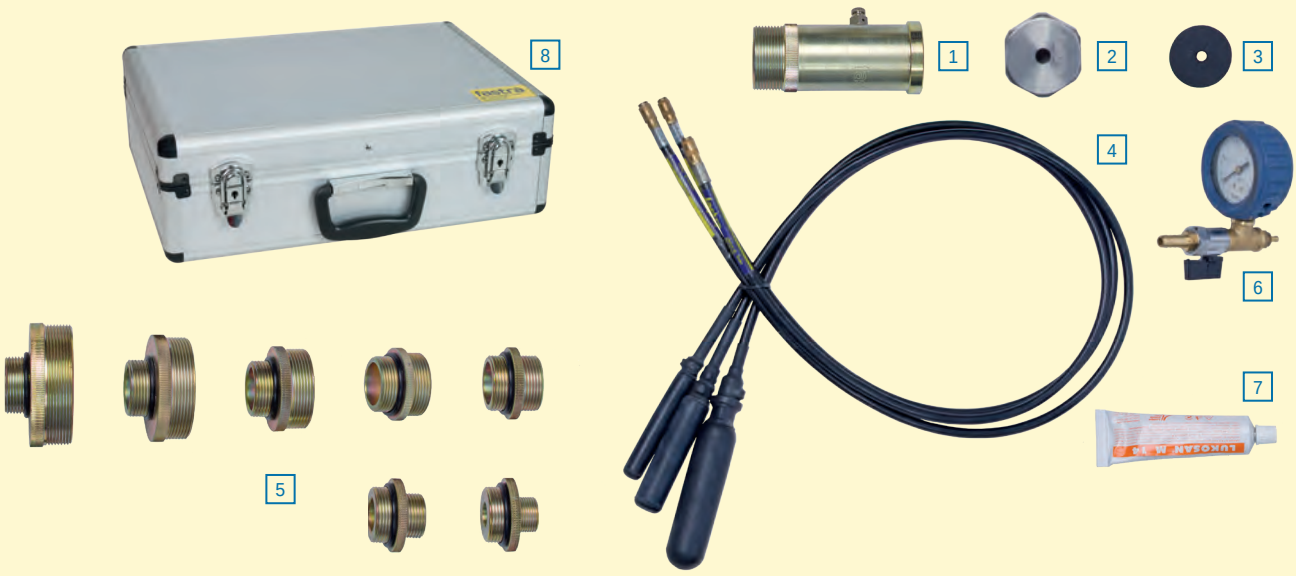
Maximum width (metered from the axis of the loading chamber):
50 mm

Weight of the assembled set/weight including the transport box:
1,8 – 3,0 kg / 6 - 8 kg (depending on the set outfit)

SURVEY OF THE APPLICATION RANGE OF INDIVIDUAL SETS WITH BASIC ACCESSORIES:

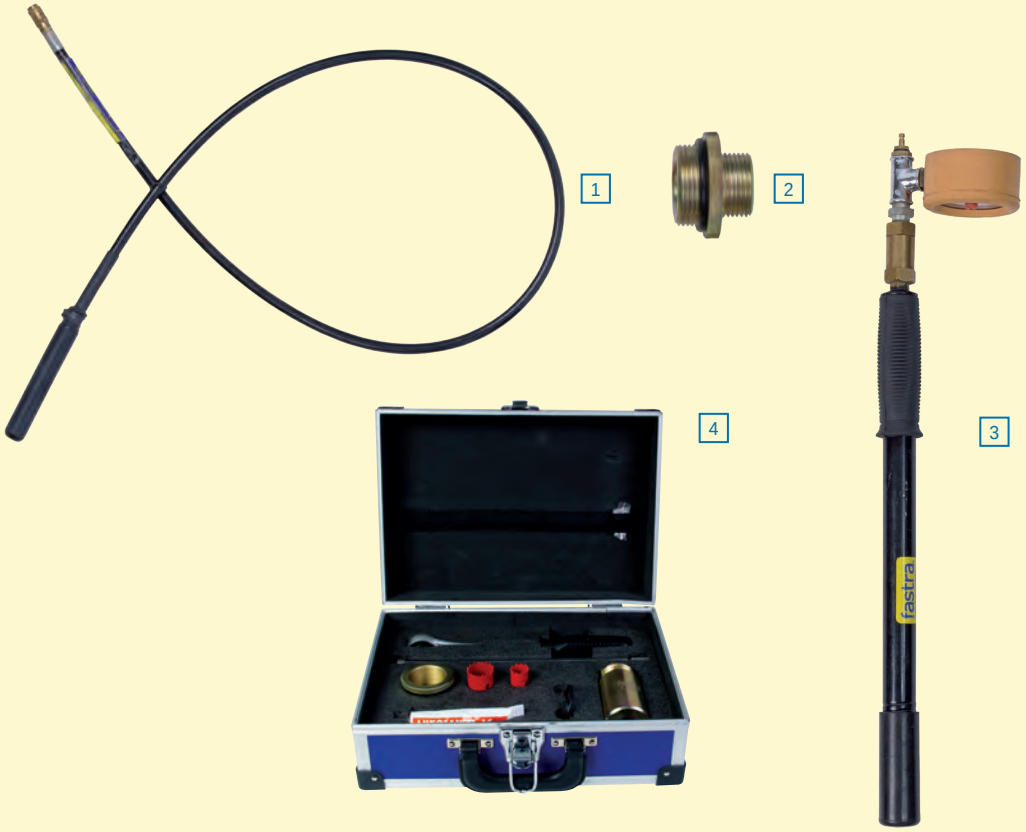
Set	Closed pipeline inter. diameter	Connection thread dim.	Number and type of rubber closing balloons per set	Catalogue No.
UDP-F1/1	20 to 32 mm	G 3/4“ to G 5/4“	2x UDP-F1/M	251-1100-001
UDP-F1/2	32 to 65 mm	G 5/4“ to G 2½“	2x UDP-F1/V	251-1100-002
UDP-F1/3	32 to 80 mm	G 5/4“ to G 3“	2x UDP-F1/VV	251-1100-003
UDP-F1/4	20 to 65 mm	G 3/4“ to G 2½“	1x UDP-F1/M + 1x UDP-F1/V	251-1100-004
UDP-F1/5	20 to 80 mm	G 3/4“ to G 3“	1x UDP-F1/M + 1x UDP-F1/VV	251-1100-005
UDP-F1/6	32 to 80 mm	G 5/4“ to G 3“	1x UDP-F1/V + 1x UDP-F1/VV	251-1100-006
UDP-F1/7	20 to 80 mm	G 3/4“ to G 3“	1x UDP-F1/M + 1x UDP-F1/V + 1x UDP-F1/VV	251-1100-007

Content of individual sets



Pos. No.	Name	Catalogue No.	UDP-F1/1 Cat. No. 251-1100-001	UDP-F1/2 Cat. No. 251-1100-002	UDP-F1/3 Cat. No. 251-1100-003	UDP-F1/4 Cat. No. 251-1100-004	UDP-F1/5 Cat. No. 251-1100-005	UDP-F1/6 Cat. No. 251-1100-006	UDP-F1/7 Cat. No. 251-1100-007
			No. of unit per set						
1.	Chamber UDP-F1	252-2000-001	1	1	1	1	1	1	1
2.	Chamber cap UDP-F1	252-2000-002	1	1	1	1	1	1	1
3.	Sandwich seal UDP-F1	252-2000-003	1	1	1	1	1	1	1
4.	Balloon UDP-F1/M (3/4“ - 5/4“)	252-2001-001	2			1	1		1
4.	Balloon UDP-F1/V (5/4“ - 2,5“)	252-2001-002		2		1		1	1
4.	Balloon UDP-F1/VV (5/4“ - 3“)	252-2001-003			2		1	1	1
5.	Adapter UDP-F1 32-20 mm (5/4“ - 3/4“)	252-2002-001	1			1	1		1
5.	Adapter UDP-F1 32-25 mm (5/4“ - 1“)	252-2002-002	1			1	1		1
5.	Adapter UDP-F1 32-32 mm (5/4“ - 5/4“)	252-2002-003	1	1	1	1	1	1	1
5.	Adapter UDP-F1 32-40 mm (5/4“ - 6/4“)	252-2002-004		1	1	1	1	1	1
5.	Adapter UDP-F1 32-50 mm (5/4“ - 2“)	252-2002-005		1	1	1	1	1	1
5.	Adapter UDP-F1 32-65 mm (5/4“ - 2,5“)	252-2002-006		1	1	1	1	1	1
5.	Adapter UDP-F1 32-80 mm (5/4“ - 3“)	252-2002-007			1		1	1	1
6.	Pressure gauge part UDP-F1 0-2,5 bar	252-2000-005	1	1	1	1	1	1	1
7.	Silicon grease 70g	252-2000-004	1	1	1	1	1	1	1
8.	Transport box UDP-F1	252-2000-006	1	1	1	1	1	1	1

UDP-F1 optional accessories



Pos. No.	Name	Catalogue No.
1.	Balloon UDP-F1/M (3/4" - 5/4")	252-2001-001
	Balloon UDP-F1/V (5/4" - 2,5")	252-2001-002
	Balloon UDP-F1/VV (5/4" - 3")	252-2001-003
2.	Adapter UDP-F1 32-20 mm (5/4" - 3/4")	252-2002-001
	Adapter UDP-F1 32-25 mm (5/4" - 1")	252-2002-002
	Adapter UDP-F1 32-32 mm (5/4" - 5/4")	252-2002-003
	Adapter UDP-F1 32-40 mm (5/4" - 6/4")	252-2002-004
	Adapter UDP-F1 32-50 mm (5/4" - 2")	252-2002-005
	Adapter UDP-F1 32-65 mm (5/4" - 2,5")	252-2002-006
	Adapter UDP-F1 32-80 mm (5/4" - 3")	252-2002-007
3.	Manual pump UDP-F1	252-2003-001
4.	Set SOP - spindle valve partition dismantling	sheet 3.3-1.2

NOTES

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LINE STOP DEVICE

MECHANICAL PLUGS

for temporary pipeline closing

APPLICATION AND DESCRIPTION

Mechanical plugs are systems used for the temporary closing of pipelines. They are loaded to the pipeline after the interruption of the flow in the pipeline as a safety element or in order to close a section of the pipeline for the purpose of pressure tests.

The mechanical plugs is provided with a rubber element that is mechanically squeezed when inside the pipeline in order to push the rubber against the internal wall of the pipeline and to close the pipeline. The mechanical closures are designed either as cask-like or discs given the shape of the rubber element. Both options may be provided with an opening/passage fir the depressurising of the closed section of the pipeline. The ending of the opening/passage may be modified as required by the customer (following the sheet 2.6-3 of this catalogue).

The opening/passage in the below described mechanical plugs is ended with a self-closing quick acting coupling system or a ball valve and a fact acting coupling system for the connection of a vent hose. This part may be arbitrarily modified respecting the requirements of the customer.

The mechanical plugs are delivered individually or in the below described sets individually configured based on customer´s requirements.

APPLICATION RANGE

Closed pipeline diameter:
15 – 1000 mm (and more)

Media:
Natural gas, non-aggressive gases and liquids, other media subject to consultation with the customer.

Maximum pressure in the closed pipeline:
up to 6 bar *

Working temperature:
-20/+70°C

* Maximum pressure subject to the type and version of the closure

LINE STOP DEVICE

2.6 Mechanical plugs

Mechanical rubber plugs

2.6-1.1 Rubber plugs without opening/passage

Rubber plugs with opening/passage

2.6-1.2 Rubber plug sets

Mechanical disc plugs

2.6-2.1 Disc plugs without opening/passage

2.6-2.2 Disc plugs with opening/passage

Mechanical closures accessories

Alternative ending of disc plugs with opening/passage 1“

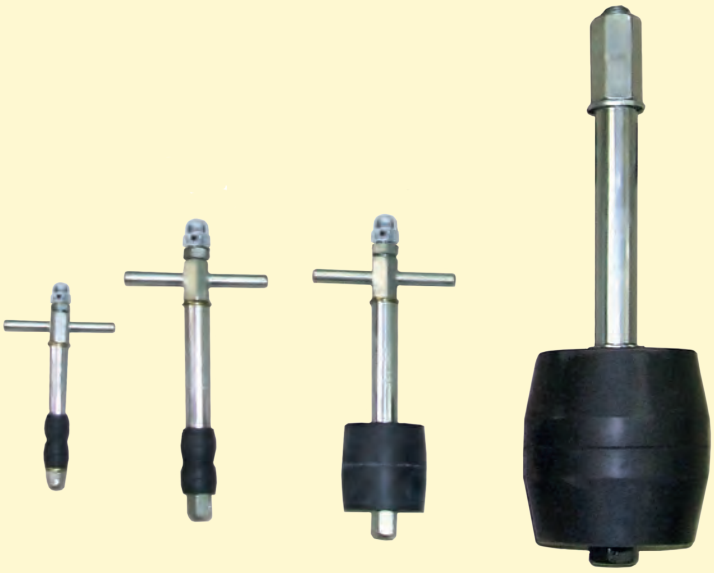
Control keys

Pressure gauge parts, adapters

Cotter pins preventing sliding

Rubber plugs

RUBBER PLUGS WITHOUT THE OPENING/PASSAGE



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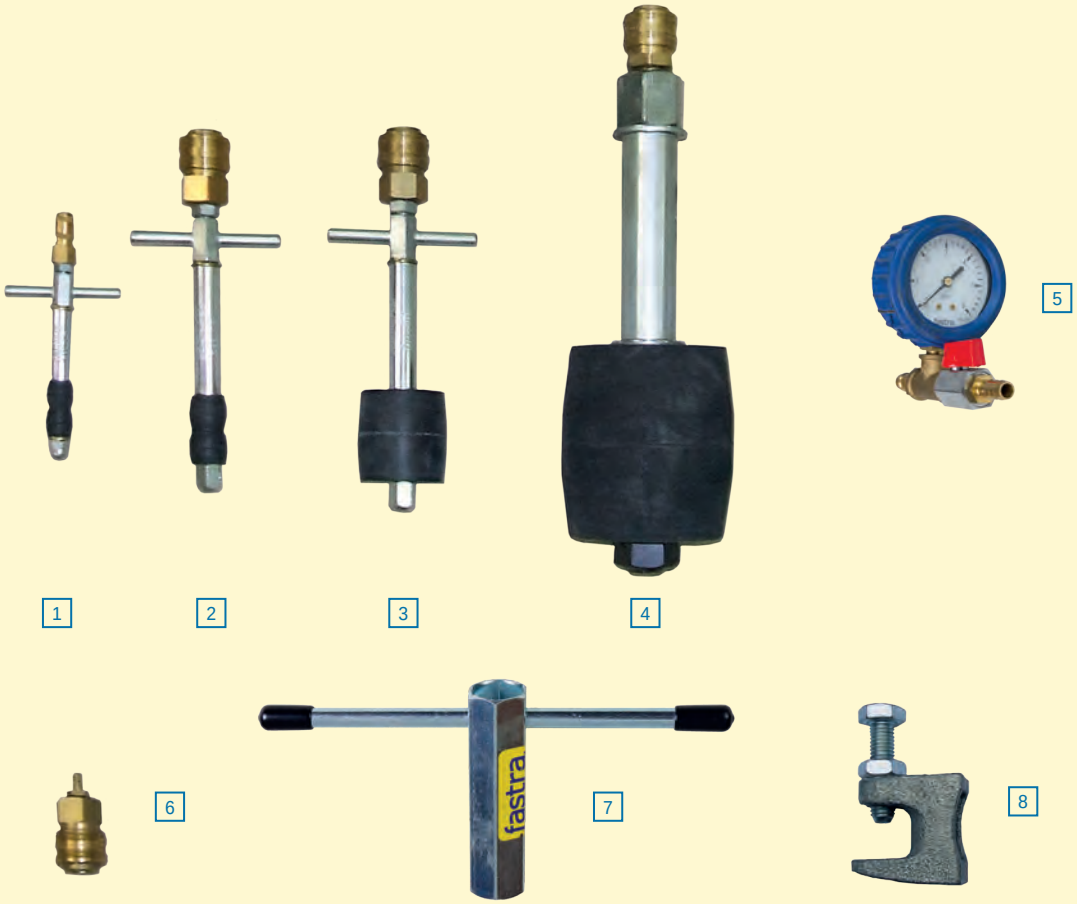
Pos. No.	Name	Application range for internal diameter from to (mm)	Control keys	Catalogue No.
1.	Rubber plug DN15 (1/2“)	14 - 18	—	261-1101-015
2.	Rubber plug DN20 (3/4“)	18 - 24	—	261-1101-020
3.	Rubber plug DN25 (1“)	24 - 30	—	261-1101-025
3.	Rubber plug DN32 (5/4“)	30 - 35	—	261-1101-032
3.	Rubber plug DN40 (6/4“)	35 - 45	—	261-1101-040
3.	Rubber plug DN50 (2“)	45 - 55	—	261-1101-050
4.	Rubber plug DN80	75 - 85	261-3011-024	261-1101-080
4.	Rubber plug DN90	85 - 95	261-3011-024	261-1101-090
4.	Rubber plug DN100	100 - 110	261-3011-024	261-1101-100

Accessories

Pos. No.	Name	Catalogue No.
5.	Control tools	sheet 2.6-3
6.	Fastening device	sheet 2.6-3

Rubber plugs sets

RUBBER PLUG WITH THE OPENING/PASSAGE



Pos. No.	Name	Application range for internal diameter from to (mm)	Control key	Catalogue No.
1.	Rubber plug with flow-thru DN15 (1/2")	14 - 18	—	261-1102-015
2.	Rubber plug with flow-thru DN20 (3/4")	18 - 24	—	261-1102-020
3.	Rubber plug with flow-thru DN25 (1")	24 - 30	—	261-1102-025
3.	Rubber plug with flow-thru DN32 (5/4")	30 - 35	—	261-1102-032
3.	Rubber plug with flow-thru DN40 (6/4")	35 - 45	—	261-1102-040
3.	Rubber plug with flow-thru DN50 (2")	45 - 55	—	261-1102-050
4.	Rubber plug with flow-thru DN80	75 - 85	261-3011-030	261-1102-080
4.	Rubber plug with flow-thru DN90	85 - 95	261-3011-030	261-1102-090
4.	Rubber plug with flow-thru DN100	100 - 110	261-3011-030	261-1102-100

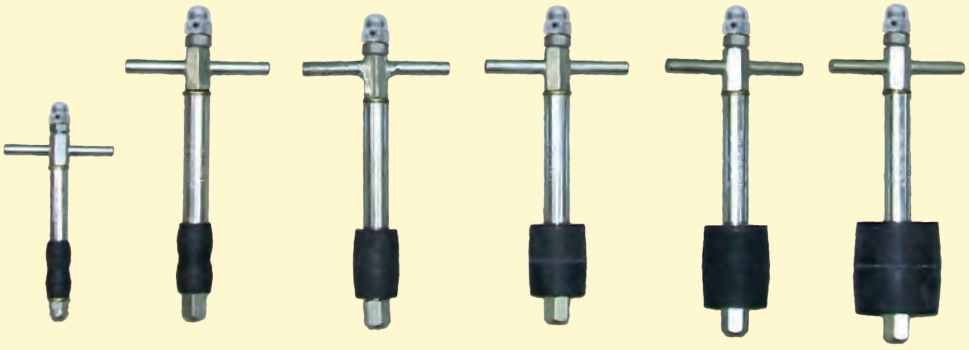
Accessories

Pos. No.	Name	Catalogue No.
5.	Pressure gauge part straight	sheet 1.4-2.3
6.	Quick coupler adapter	261-3012-010
7.	Control tools	sheet 2.6-3
8.	Fastening device	sheet 2.6-3

Rubber plugs sets

SET SU

Set of rubber plug without the opening/passage, range DN15 to DN50 (1/2“ to 2“)



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4

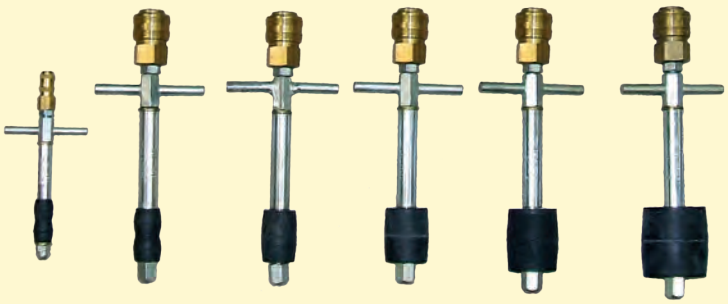
Pos. No.	Name	Catalogue No.	No. of units
	Set SU	**261-1201-001**	
	The set contains:		
1.	Rubber plug DN15 (1/2")	261-1101-015	1
2.	Rubber plug DN20 (3/4")	261-1101-020	1
3.	Rubber plug DN25 (1")	261-1101-025	1
3.	Rubber plug DN32 (5/4")	261-1101-032	1
3.	Rubber plug DN40 (6/4")	261-1101-040	1
3.	Rubber plug DN50 (2")	261-1101-050	1
4.	Transport box SU	262-1201-010	1

Rubber plugs sets

SU-K SET

The set of mechanical rubber plug with an opening/passage, range DN 15 to DN 50 (1/2“ - 2“). The set includes a pressure gauge part allowing the monitoring of pipeline section pressure.

1



2 3 4 4 4 4

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6

7

Pos. No.	Name	Catalogue No.	No. of units
1.	**Set SU-K**	**261-1202-001**	
	The set contains:		
2.	Rubber plug with flow-thru DN15 (1/2")	261-1102-015	1
3.	Rubber plug with flow-thru DN20 (3/4")	261-1102-020	1
4.	Rubber plug with flow-thru DN25 (1")	261-1102-025	1
4.	Rubber plug with flow-thru DN32 (5/4")	261-1102-032	1
4.	Rubber plug with flow-thru DN40 (6/4")	261-1102-040	1
4.	Rubber plug with flow-thru DN50 (2")	261-1102-050	1
5.	Pressure gauge part straight 0 - 1,6 bar	142-2404-160	1
6.	Quick coupler adapter F 7,2/M mini	261-3012-010	1
7.	Transport box SU	262-1202-010	1

Rubber plugs

Disc closures consist of two (or more) metallic discs with a sealing rubber disc/ring between the metallic ones. Turning the handle the metallic discs gets closer to each other squeezing the sealing rubber disc/ring and pressing it against the interior wall of the pipeline. All disc closures are equipped with a ball bearing in order to reduce the force necessary to control the sealing element squeezing.

TECHNICAL PARAMETERS

For the range of internal parameters of closed pipelines see the table
(other dimensions optional).

Metallic disc material:
Aluminium alloy as a standard, V4A steel upon request

Sealing rubber disc/ring material:
Rubber SBR/NR

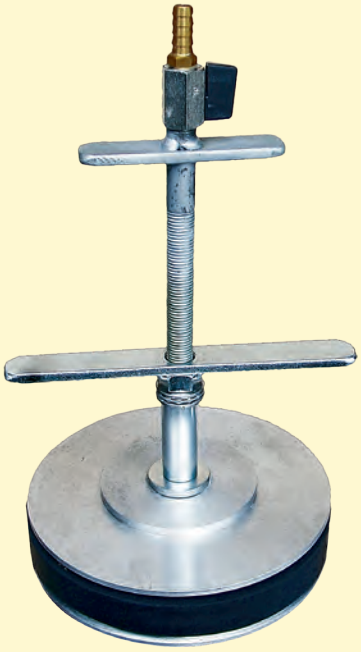
Application range of disc plugs	
DN dimension	Application range for internal diameter from to (mm)
70	65 - 75
80	75 - 85
90	85 - 95
100	95 - 105
110	105 - 115
125	120 - 135
130	125 - 145
140	135 - 155
150	145 - 165
160	155 - 175
175	170 - 190
190	185 - 205
200	195 - 210
210	205 - 225
225	220 - 240
250	245 - 270
260	255 - 280
275	270 - 295
300	295 - 315
310	305 - 320
325	320 - 330
350	335 - 375
375	360 - 415
400	385 - 425
450	435 - 475
500	485 - 525

Rubber plugs without the opening/passage

Expanding rubber plugs single without opening/passage	
Name	Catalogue No.
Expanding rubber plug single DN80	261-2101-080
Expanding rubber plug single DN90	261-2101-090
Expanding rubber plug single DN100	261-2101-100
Expanding rubber plug single DN110	261-2101-110
Expanding rubber plug single DN125	261-2101-125
Expanding rubber plug single DN130	261-2101-130
Expanding rubber plug single DN140	261-2101-140
Expanding rubber plug single DN150	261-2101-150
Expanding rubber plug single DN160	261-2101-160
Expanding rubber plug single DN175	261-2101-175
Expanding rubber plug single DN190	261-2101-190
Expanding rubber plug single DN200	261-2101-200
Expanding rubber plug single DN210	261-2101-210
Expanding rubber plug single DN225	261-2101-225
Expanding rubber plug single DN250	261-2101-250
Expanding rubber plug single DN260	261-2101-260
Expanding rubber plug single DN275	261-2101-275
Expanding rubber plug single DN300	261-2101-300
Expanding rubber plug single DN310	261-2101-310
Expanding rubber plug single DN350	261-2101-350
Expanding rubber plug single DN375	261-2101-375
Expanding rubber plug single DN400	261-2101-400
Expanding rubber plug single DN450	261-2101-450
Expanding rubber plug single DN500	261-2101-500

Expanding rubber plugs double without opening/passage	
Name	Catalogue No.
Expanding rubber plug double DN80	261-2102-080
Expanding rubber plug double DN90	261-2102-090
Expanding rubber plug double DN100	261-2102-100
Expanding rubber plug double DN110	261-2102-110
Expanding rubber plug double DN125	261-2102-125
Expanding rubber plug double DN130	261-2102-130
Expanding rubber plug double DN140	261-2102-140
Expanding rubber plug double DN150	261-2102-150
Expanding rubber plug double DN160	261-2102-160
Expanding rubber plug double DN175	261-2102-175
Expanding rubber plug double DN190	261-2102-190
Expanding rubber plug double DN200	261-2102-200
Expanding rubber plug double DN210	261-2102-210
Expanding rubber plug double DN225	261-2102-225
Expanding rubber plug double DN250	261-2102-250
Expanding rubber plug double DN260	261-2102-260
Expanding rubber plug double DN275	261-2102-275
Expanding rubber plug double DN300	261-2102-300
Expanding rubber plug double DN310	261-2102-310
Expanding rubber plug double DN350	261-2102-350
Expanding rubber plug double DN375	261-2102-375
Expanding rubber plug double DN400	261-2102-400
Expanding rubber plug double DN450	261-2102-450
Expanding rubber plug double DN500	261-2102-500

Rubber plugs with opening/passage



Expanding rubber plugs single with opening/passage	
Name	Catalogue No.
Exp.rubber plug single with flow-thru DN80	261-2201-080
Exp.rubber plug single with flow-thru DN90	261-2201-090
Exp.rubber plug single with flow-thru DN95	261-2201-095
Exp.rubber plug single with flow-thru DN100	261-2201-100
Exp.rubber plug single with flow-thru DN110	261-2201-110
Exp.rubber plug single with flow-thru DN125	261-2201-125
Exp.rubber plug single with flow-thru DN130	261-2201-130
Exp.rubber plug single with flow-thru DN140	261-2201-140
Exp.rubber plug single with flow-thru DN150	261-2201-150
Exp.rubber plug single with flow-thru DN160	261-2201-160
Exp.rubber plug single with flow-thru DN175	261-2201-175
Exp.rubber plug single with flow-thru DN190	261-2201-190
Exp.rubber plug single with flow-thru DN200	261-2201-200
Exp.rubber plug single with flow-thru DN210	261-2201-210
Exp.rubber plug single with flow-thru DN225	261-2201-225
Exp.rubber plug single with flow-thru DN250	261-2201-250
Exp.rubber plug single with flow-thru DN260	261-2201-260
Exp.rubber plug single with flow-thru DN275	261-2201-275
Exp.rubber plug single with flow-thru DN300	261-2201-300
Exp.rubber plug single with flow-thru DN310	261-2201-310
Exp.rubber plug single with flow-thru DN325	261-2201-325
Exp.rubber plug single with flow-thru DN350	261-2201-350
Exp.rubber plug single with flow-thru DN375	261-2201-375
Exp.rubber plug single with flow-thru DN400	261-2201-400
Exp.rubber plug single with flow-thru DN425	261-2201-425
Exp.rubber plug single with flow-thru DN450	261-2201-450
Exp.rubber plug single with flow-thru DN500	261-2201-500

Expanding rubber plugs double with opening/passage	
Name	Catalogue No.
Exp. rubber plug double with flow-thru DN80	261-2202-080
Exp. rubber plug double with flow-thru DN90	261-2202-090
Exp. rubber plug double with flow-thru DN95	261-2202-095
Exp. rubber plug double with flow-thru DN100	261-2202-100
Exp. rubber plug double with flow-thru DN110	261-2202-110
Exp. rubber plug double with flow-thru DN125	261-2202-125
Exp. rubber plug double with flow-thru DN130	261-2202-130
Exp. rubber plug double with flow-thru DN140	261-2202-140
Exp. rubber plug double with flow-thru DN150	261-2202-150
Exp. rubber plug double with flow-thru DN160	261-2202-160
Exp. rubber plug double with flow-thru DN175	261-2202-175
Exp. rubber plug double with flow-thru DN190	261-2202-190
Exp. rubber plug double with flow-thru DN200	261-2202-200
Exp. rubber plug double with flow-thru DN210	261-2202-210
Exp. rubber plug double with flow-thru DN225	261-2202-225
Exp. rubber plug double with flow-thru DN250	261-2202-250
Exp. rubber plug double with flow-thru DN260	261-2202-260
Exp. rubber plug double with flow-thru DN275	261-2202-275
Exp. rubber plug double with flow-thru DN300	261-2202-300
Exp. rubber plug double with flow-thru DN310	261-2202-310
Exp. rubber plug double with flow-thru DN325	261-2202-325
Exp. rubber plug double with flow-thru DN350	261-2202-350
Exp. rubber plug double with flow-thru DN375	261-2202-375
Exp. rubber plug double with flow-thru DN400	261-2202-400
Exp. rubber plug double with flow-thru DN425	261-2202-425
Exp. rubber plug double with flow-thru DN450	261-2202-450
Exp. rubber plug double with flow-thru DN500	261-2202-500

Rubber plugs with opening/passage

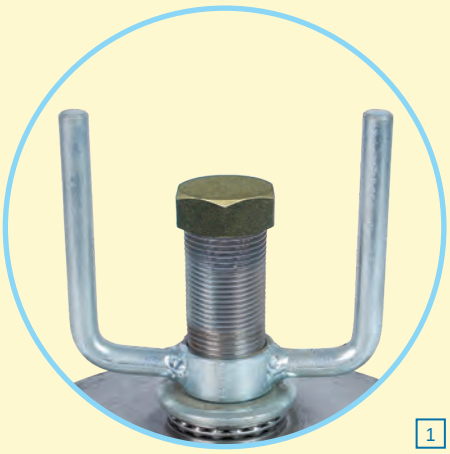
Expanding rubber plug single with flow-thru 1"	
Name	Catalogue No.
Exp.rubber plug single with flow-thru 1" DN80	261-2211-080
Exp.rubber plug single with flow-thru 1" DN90	261-2211-090
Exp.rubber plug single with flow-thru 1" DN100	261-2211-100
Exp.rubber plug single with flow-thru 1" DN110	261-2211-110
Exp.rubber plug single with flow-thru 1" DN125	261-2211-125
Exp.rubber plug single with flow-thru 1" DN130	261-2211-130
Exp.rubber plug single with flow-thru 1" DN140	261-2211-140
Exp.rubber plug single with flow-thru 1" DN150	261-2211-150
Exp.rubber plug single with flow-thru 1" DN160	261-2211-160
Exp.rubber plug single with flow-thru 1" DN175	261-2211-175
Exp.rubber plug single with flow-thru 1" DN190	261-2211-190
Exp.rubber plug single with flow-thru 1" DN200	261-2211-200
Exp.rubber plug single with flow-thru 1" DN210	261-2211-210
Exp.rubber plug single with flow-thru 1" DN225	261-2211-225
Exp.rubber plug single with flow-thru 1" DN250	261-2211-250
Exp.rubber plug single with flow-thru 1" DN260	261-2211-260
Exp.rubber plug single with flow-thru 1" DN275	261-2211-275
Exp.rubber plug single with flow-thru 1" DN300	261-2211-300
Exp.rubber plug single with flow-thru 1" DN310	261-2211-310
Exp.rubber plug single with flow-thru 1" DN350	261-2211-350
Exp.rubber plug single with flow-thru 1" DN375	261-2211-375
Exp.rubber plug single with flow-thru 1" DN400	261-2211-400
Exp.rubber plug single with flow-thru 1" DN450	261-2211-450
Exp.rubber plug single with flow-thru 1" DN500	261-2211-500

Expanding rubber plugs double with opening/passage 1"	
Name	Catalogue No.
Exp. rubber plug double with flow-thru 1" DN80	261-2212-080
Exp. rubber plug double with flow-thru 1" DN90	261-2212-090
Exp. rubber plug double with flow-thru 1" DN100	261-2212-100
Exp. rubber plug double with flow-thru 1" DN110	261-2212-110
Exp. rubber plug double with flow-thru 1" DN125	261-2212-125
Exp. rubber plug double with flow-thru 1" DN130	261-2212-130
Exp. rubber plug double with flow-thru 1" DN140	261-2212-140
Exp. rubber plug double with flow-thru 1" DN150	261-2212-150
Exp. rubber plug double with flow-thru 1" DN160	261-2212-160
Exp. rubber plug double with flow-thru 1" DN175	261-2212-175
Exp. rubber plug double with flow-thru 1" DN190	261-2212-190
Exp. rubber plug double with flow-thru 1" DN200	261-2212-200
Exp. rubber plug double with flow-thru 1" DN210	261-2212-210
Exp. rubber plug double with flow-thru 1" DN225	261-2212-225
Exp. rubber plug double with flow-thru 1" DN250	261-2212-250
Exp. rubber plug double with flow-thru 1" DN260	261-2212-260
Exp. rubber plug double with flow-thru 1" DN275	261-2212-275
Exp. rubber plug double with flow-thru 1" DN300	261-2212-300
Exp. rubber plug double with flow-thru 1" DN310	261-2212-310
Exp. rubber plug double with flow-thru 1" DN350	261-2212-350
Exp. rubber plug double with flow-thru 1" DN375	261-2212-375
Exp. rubber plug double with flow-thru 1" DN400	261-2212-400
Exp. rubber plug double with flow-thru 1" DN450	261-2212-450
Exp. rubber plug double with flow-thru 1" DN500	261-2212-500

Mechanical plugs accessories

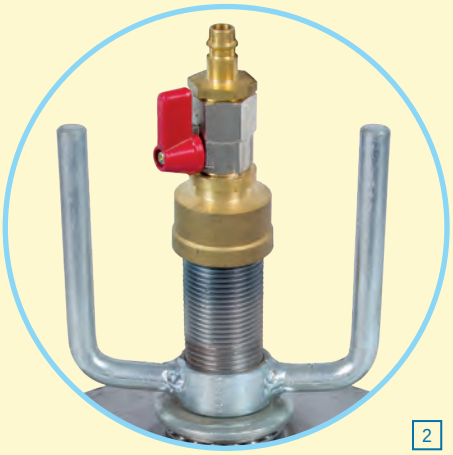
ALTERNATIVE ENDING OF MECHANICAL DISC PLUGS WITH THE PASSAGE/OPENING 1“

Screw plug end



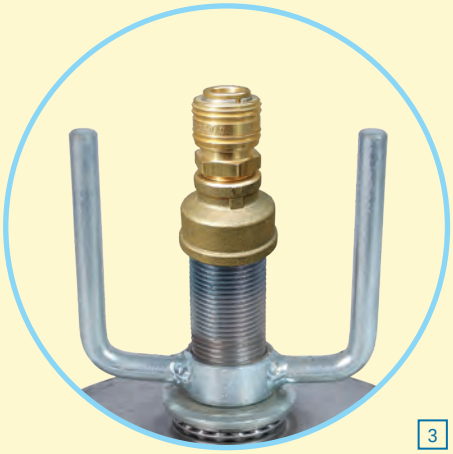
1

Ball valve ½“ and male quick acting coupling system end



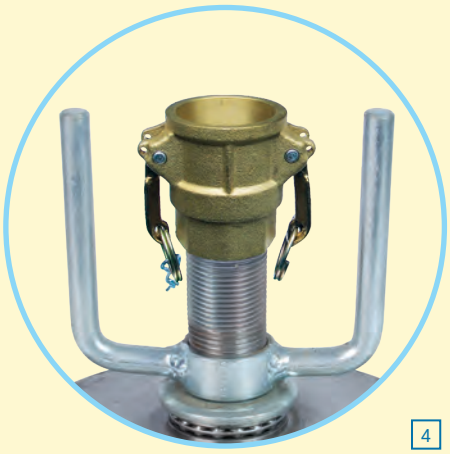
2

Female qick acing coupling system end



3

KAMLOCK quick acting coupling device DN25 end



4

Alternative ending of mechanical disc plugs with the passage/opening 1"

Pos. No.	Description	Marking (and name)	Catalogue No.
1.	Termination screw nut	/Z	261-3001-&&&
2.	Termination KK 1/2“ and male quick coupler	/KK M	261-3002-&&&
3.	Termination female quick coupler	/F	261-3003-&&&
4.	Termination quick coupler KAMLOCK DN25	/K25	261-3004-&&&

&&& – closure dimension (last three number of catalogue number applicative disc plugs with opening/passage 1”)

Mechanical plugs accessories

CONTROL TOOLS

Name	Catalogue No.
Control tool No. 24	261-3011-024
Wrench No. 30	261-3011-030

PRESSUREGAUGEPARTS,ADAPTERS

Pos. No.	Name	Catalogue No.
1.	Pressure gauge part straight	sheet 1.4-2.3
2.	Quick coupler adapter F7,2/M mini	261-3012-010

PIPE FASTENING DEVICES

Pos. No.	Name	Catalogue No.
1.	Pipe fastening device M	261-3013-001
2.	Pipe fastening device V	261-3013-002

3. OTHER DEVICES AND ACCESSORIES

OTHER DEVICES AND ACCESSORIES

fastra.

OTHER DEVICES AND ACCESSORIES

S 1212

Straight pneumatic driven saw

The compressed air straight saw S1212 is a system designated for straight transversal cutting of pipelines and full circular cross section profiles.*

The compressed air drive unit is suspended to a fixing preparation attached to the pipeline to be cut. The fixing preparation provides for precise alignment of the drive unit and thus for the correct geometry and stability of the cut and so provides for the execution of askew cuts (deviation from the transversal upright direction): the fixing preparation may be equipped with a compressed air push on system, in such a case the drive is supplied with a push on system holder.

Compressed air for the drive of the saw has to be properly treated in order to separate water and add some lubrication agent, for instance by an air treatment unit (following the sheet 3.3-1 of this catalogue).

Normally, the system is supplied with an explosion-proof drive unit that complies with requirements of the Government Regulation No. 23/2003 Coll. for works in the zone 2 subject to the Government

Regulation No. 406/2004 Coll. her profile cutting is possible subject to consultation with the manufacturer.

APPLICATION RANGE

Cut pipeline diameter:
Max. 700 mm (depending on the type of the set)

Diameter of the cut full circular profile:
Max: 250 mm

Deviation from the transversal upright direction:
15 °

Cut material:
Steel, cast iron, plastic (depending on the used Saw blade)

Working temperature: -10/+45°C**

**The bottom limit of the temperature range may be limited when using the compressed air drive depending on measures taken to prevent freezing of condensate in the compressed air system. The upper limit may be increased subject to consultation with the manufacturer.

TECHNICAL PARAMETERS

Air working pressure:
6 bar

Air consumption at load:
1.5 cubic metre / min

Internal diameter of the connecting hose:
At least 13 mm

Number of swings of the saw blade:
330 / min

length of the swing of the saw blade:
60 mm

Saw blade length:
300 – 970 mm

OTHER DEVICES AND ACCESSORIES

3.1 Device S1212

Sets S1212

3.1-1.1 Set S1212

Set S1212/P

3.1-2 **Optional accessories S1212**

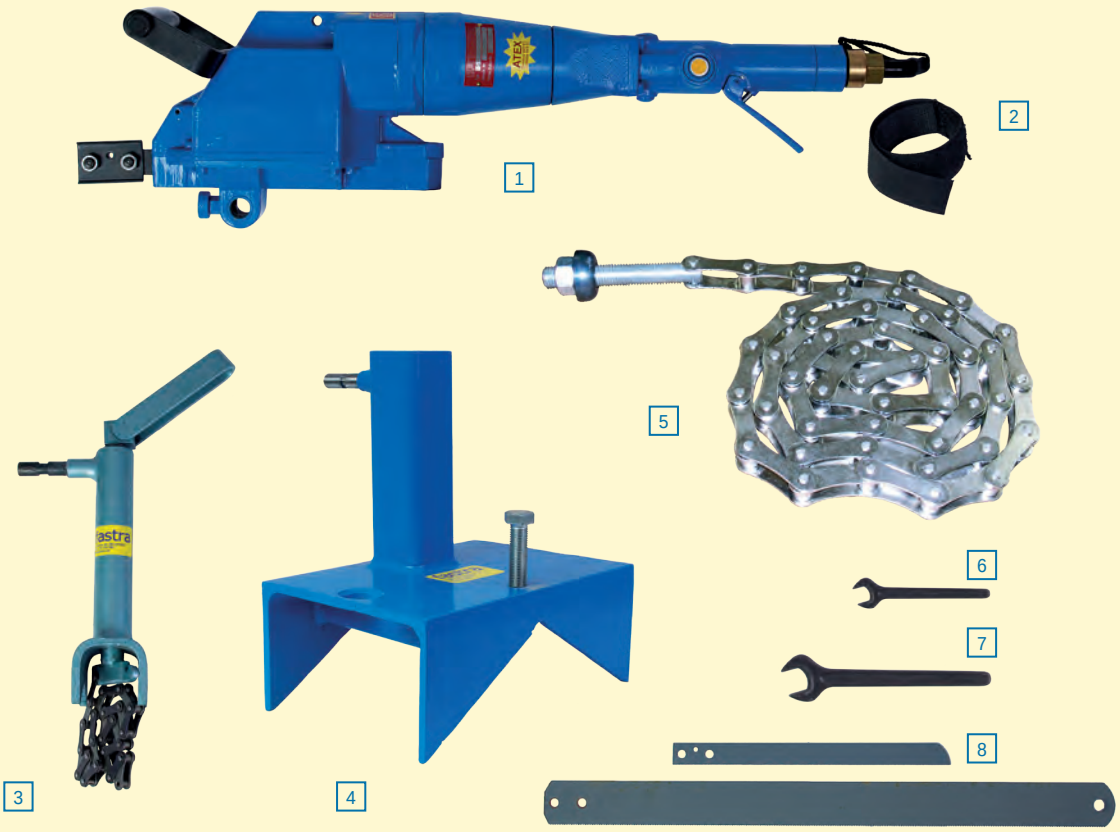
Set S1212

The set is designated for straight transversal cutting of pipelines, diameter range DN/ID 65-300 mm or, as the case may be, other materials in the range as specified on the sheet 3.1. The fixing preparations are not provided with the compressed air push on system.

Maximum height above the surface of the cut pipeline: 800 mm

Weight of the set with the fixing preparation Dn150-300:19 kg

For other parameters following the sheet 3.1.



Pos. No.	Name	Catalogue No.	No. of units
	Set S 1212	**311-1100-001**	
	Set includes		
1.	Drive unit S1212	312-1100-001	1
2.	Locking tape	312-1100-003	1
3.	Clamping fixture DN65-150	312-1100-004	1
4.	Clamping fixture DN150-300	312-1100-005	1
5.	Clamping chain S1212 300	312-1100-007	2
6.	Side Wrench No. 13	142-2104-013	1
7.	Side Wrench No. 24	142-2104-024	1
8.	Saw blade 25x400 (DN200)	312-2001-400	2
8.	Saw blade 50x600 (DN300-400)	312-2001-600	2

	Optional accessories	
	Saw blades	sheet 3.1-2
	Cutting emulsion	sheet 3.1-2
	Bronze tools	sheet 3.1-2
	Transport box S1212	sheet 3.1-2
	Pneumatic powered accessories	sheet 3.1-2

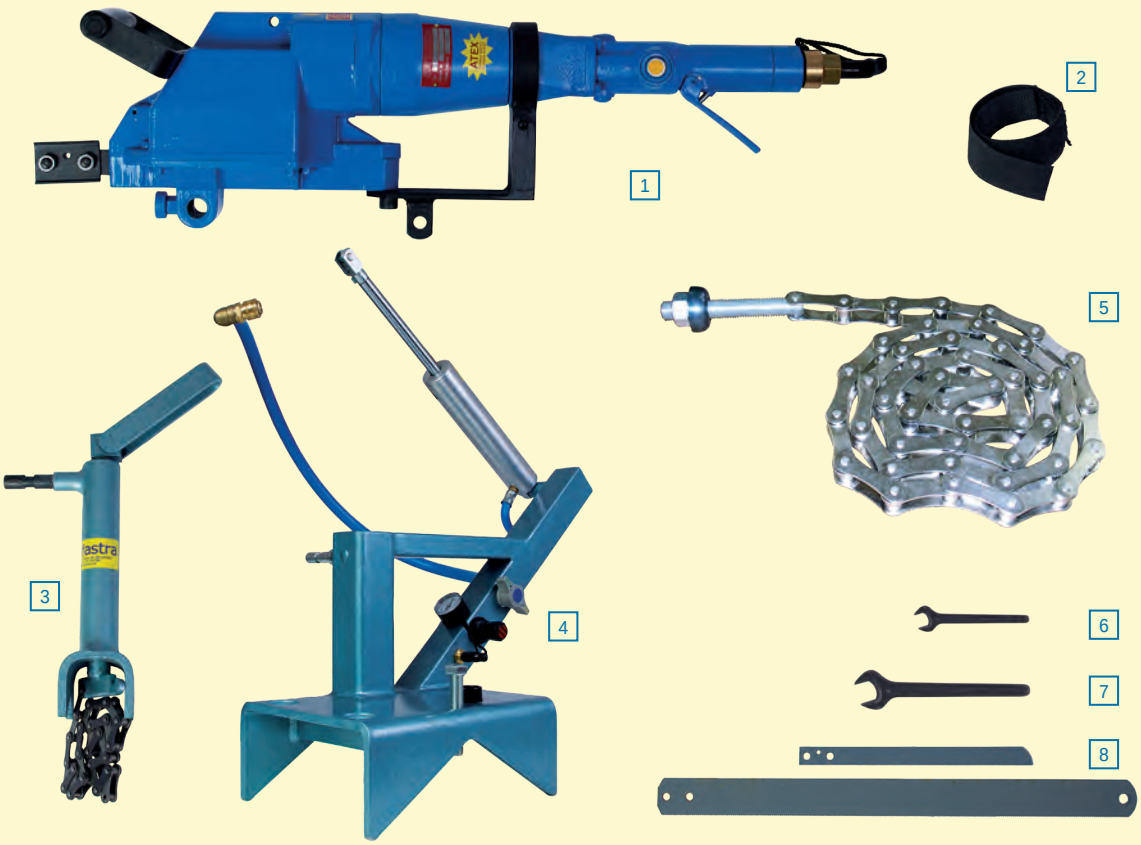
Set S1212/P

The set is designated for straight transversal cutting of pipelines, diameter range DN/ID 65-700 mm or, as the case may be, other materials in the range as specified on the sheet 3.1. The fixing preparation DN150-500 off this set is equipped with the compressed air push on system.

Maximum height above the surface of the cut pipeline: 900 mm

Weight of the set with the fixing preparation Dn150-500/weight with transport box: 28/43 kg

For other parameters following the sheet 3.1.



Pos. No.	Name	Catalogue No.	No. of units
	Set S 1212/P	**311-1100-002**	
	Set includes		
1.	Drive unit S1212/P	312-1100-002	1
2.	Locking tape	312-1100-003	1
3.	Clamping fixture DN65-150	312-1100-004	1
4.	Clamping fixture DN150-500/P	312-1100-006	1
5.	Clamping chain S1212 700	312-1100-009	2
6.	Side wrench No. 13	142-2104-013	1
7.	Side wrench No. 24	142-2104-024	1
8.	Saw blade 25x400 (DN200)	312-2001-400	2
8.	Saw blade 50x770 (DN700)	312-2001-770	2

	Optional accessories	
	Saw blades	sheet 3.1-2
	Cutting emulsion	sheet 3.1-2
	Bronze tools	sheet 3.1-2
	Transport box S1212	sheet 3.1-2
	Pneumatic powered accessories	sheet 3.1-2

Optional accessories S 1212

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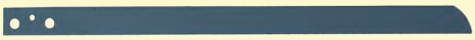

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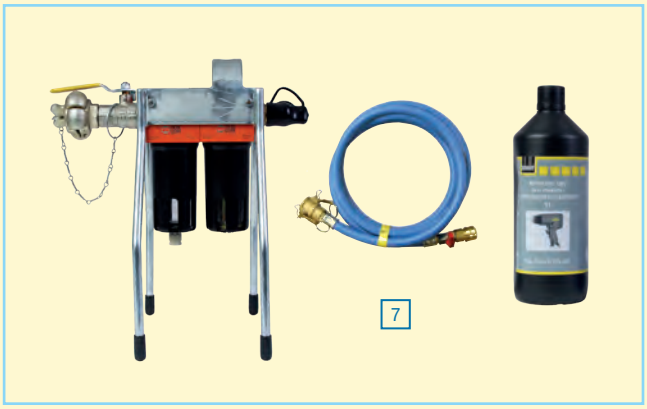

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Pos. No.	Name	Catalogue No.
1.	Saw blade 25x200	312-2001-200
	Saw blade 25x300 (DN100)	312-2001-300
	Saw blade 25x400 (DN200)	312-2001-400
	Saw blade 25x500 (DN 300)	312-2001-500
2.	Saw blade 50x600 (DN300-400)	312-2001-600
	Saw blade 50x770 (DN500)	312-2001-770
	Saw blade 50x970 (DN700)	312-2001-970
3.	Cutting emulsion	312-2002-001
4.	Bronze hammer (non-sparking)	312-2003-001
5.	Bronze flange wedge (non-sparking)	312-2003-002
6.	Transport box S1212	312-3004-001
7.	Pneumatic accessories - air treatment, hose, lube oil	sheet 3.3-2

NOTES

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OTHER DEVICES AND ACCESSORIES

UPU

Versatile push on fastening device

APPLICATION AND DESCRIPTION

The versatile push on device UPU is a system used primarily when working with steel pipelines for:

- right and safe fixing of repair patches
- sliding sleeve SMU or other pipe element handling
- electrical connection of pipeline sections subject to cutting or joining works
- conductive connection of the welding set with the pipeline

The threaded spindle with a nut that is, depending on the version, ended with rotary-fixed push on angular piece or level arm. In versions equipped with the push on angular piece, the nut goes with hooks for fixing of chain links. The version with arms has the nut integrated to the push on device arm. Both arms are provided with pins for the fixing of the chain links.

Turning the threaded spindle, the nut moves along the spindle and tightens the hooked (fixed) chain as wound around the pipeline with very tight attachment to the pipeline.

Normally, UPU devices are supplied as the below described sets or individually depending on the customers´ request.

APPLICATION RANGE

External diameter of wound pipelines
60-600 mm (depending on the type and version)

OTHER DEVICES AND ACCESSORIES

3.2 Set UPU

Set UPU

Name	Catalogue no.	Weight
Set UPU-M1 DN65-300/12	321-1000-001	15,5 kg
Set UPU-M2 DN65-300/20	321-1000-002	17,6 kg
Set UPU-M3 DN65-500/12	321-1000-003	16,3 kg
Set UPU-M4 DN65-500/20	321-1000-004	18,5 kg

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Pos. No.	Name	Catalogue no.	No. of units per set			
			UPU-M1 Cat. No. 321-1000-001	UPU-M2 Cat. No. 321-1000-002	UPU-M3 Cat. No. 321-1000-003	UPU-M4 Cat. No. 321-1000-004
1.	UPU-M	321-1001-001	2	2	2	2
2.	Chain UPU-M DN300	322-3001-130	2	2	-	-
	Chain UPU-M DN500	322-3001-150	-	-	2	2
3.	Connecting cable with connectors 12m	322-3002-012	1	-	1	-
	Connecting cable with connectors 20m	322-3002-020	-	1	-	1
4.	Connector adapter 200/400A	322-3005-000	1	1	1	1
5.	Transport box UPU		1	1	1	1

Preparations UPU

PREPARATIONS UPU-M

Pos. No.	Name	Catalogue no.	Weight
1.	UPU-M DN300	321-1001-300	3,3 kg
	UPU-M DN500	321-1001-500	3,8 kg
	UPU-M DN600	321-1001-600	4,0 kg
2.	UPU-M	321-1001-001	2,5 kg

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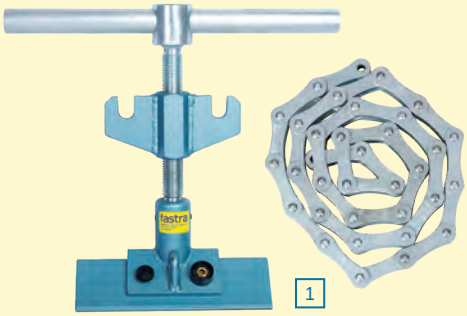
PREPARATIONS UPU-S

Pos. No.	Name	Catalogue no.	Weight
1.	UPU-S DN300	321-1002-300	12,5 kg
	UPU-S DN500	321-1002-500	15,0 kg
2.	UPU-S	321-1002-001	9,5 kg



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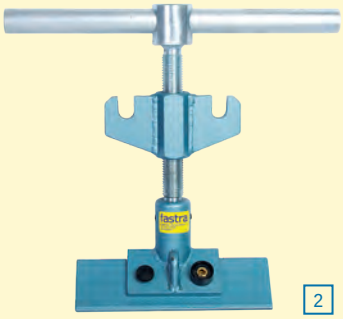

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PREPARATIONSUPU-MAX

Pos. No.	Name	Catalogue no.	Weight
1.	UPU-MAX DN300	321-1003-300	19,5 kg
	UPU-MAX DN500	321-1003-500	23,0 kg

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Optional accessories UPU

Pos. No.	Name	Catalogue no.
1.	Chain UPU-M DN300	322-3001-130
	Chain UPU-M DN500	322-3001-150
	Chain UPU-M DN600	322-3001-160
2.	Chain UPU-S DN300	322-3001-230
	Chain UPU-S DN500	322-3001-250
3.	Chain UPU-MAX DN300	322-3001-330
	Chain UPU-MAX DN500	322-3001-350
4.	Connecting cable with connectors 10m	322-3002-010
	Connecting cable with connectors 12m	322-3002-012
	Connecting cable with connectors 15m	322-3002-015
	Connecting cable with connectors 20m	322-3002-020
5.	Connecting cable with clips 1m	322-3003-010
	Connecting cable with clips 2m	322-3003-020
	Connecting cable with clips 3m	322-3003-030
6.	Connector adapter 200/400A	322-3005-000

NOTES

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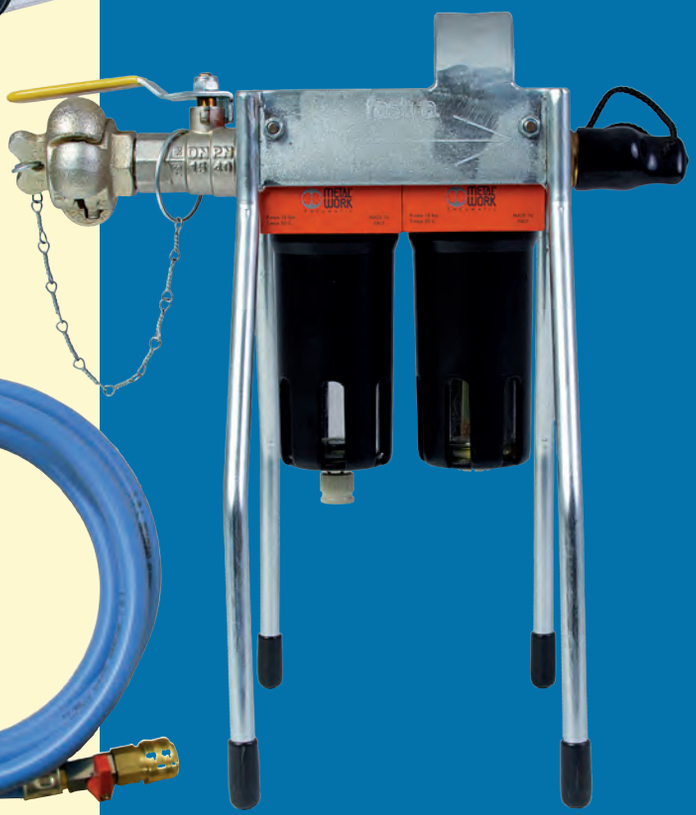
OTHER DEVICES AND ACCESSORIES

ELEMENTS, ACCESSORIES A OPTIONAL ITEMS

- elimination of minor irregularities and sharp edges of pipelines
- dismantling of partitions in spindle valve
- pneumatic accessories



APPLICATION AND DESCRIPTION

Sets, preparations and accessories referred to in this part of the catalogue are used to optimise some works executed when servicing pipeline systems and as a complement to some systems referred to in this catalogue.

OTHER DEVICES AND ACCESSORIES

3.3 Other

Sets

3.3-1.1 Set OH – Elimination of minor irregularities and sharp edges of pipelines

Set SOP – Dismantling of partitions in spindle valves

3.3-2 **Pneumatic accessories**

Air treatment unit

OH set

Preparations are designated for the elimination of minor irregularities following welding and of sharp edges inside pipelines (due to for instance division of steel pipes) built in a part of distribution pipeline next to main gas closing valves.
Preparations are used for the trimming of the pipeline surface in particular prior to the use of the device RUP-F2. A steel loading rod provided with a cone stem mill and hexagonal ending for the fixing of a ratchet key used as a drive provided in the loading chamber with seal and de-aeration valve.
For better occupational safety, the preparation is equipped with a handle and a pin preventing the removal of the rod from the loading chamber with locking bolts.
Normally, the preparations are supplied in the set described below or as may be individually required by the customer.
The preparations comply with requirements of CSN EN 1775:2008, art. 8.2.3. as the they are designed so that all works could be executed without any media leak.

Pos. No.	Name	Catalogue no.	No. of units
1.	**Set OH**	**331-1101-001**	
	Set includes		
2.	Komplet OH DN15	332-1101-001	1
3.	Komplet OH DN20	332-1101-002	1
4.	Split cotter pin	232-1105-030	2
5.	Handle OH	332-1101-003	1
6.	Ratchet combination wrench No. 13	142-2106-013	1
7.	Transport box OH	332-1101-004	1

SET APPLICATION RANGE

Material and internal diameter of the pipeline to be fixed:
Pipelines of steel DN/ID 15 and 20 mm (1/2“ and ¾“)

Media:
Natural gas, non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the pipeline to be fixed:
Up to 3 bar

Working temperature:
-10/+70°C

TECHNICAL PARAMETERS

Dimension of the connection thread:
G1/2“ and G3/4“ to CSN EN 228-1:2003

Total length with fully retracted loading rod:
OH DN15 300 mm, OH DN20 320 mm

Maximum protrusion of the loading rod (metered from the chamber edge):
OH DN15 200 mm, OH DN20 210 mm

Weight of the set including the transport box:
4,5 kg

Set SOP

The set is designated for the elimination of obstacles in valve spindle bodies built in distribution pipelines in particular where the partition in the spindle opening makes it impossible for the UDP-F1 to be used.

A steel drilling bar passes through a chamber provided with a sealing element. The working part of the bar is adapted for the fixing of the drilling bit and in its control part it has a square piece for the setting of the ratchet for manual drilling.

The set complies with requirements of CSN EN 1775: 2008, art. 8.2.3. as the they are designed so that all works could be executed without any media leak.

Pos. No.	Name	Catalogue no.	No. of units
1.	**Set SOP**	**331-1102-002**	
	Set includes		
2.	Chamber SOP	332-1102-001	1
3.	Drilling rod SOP	332-1102-002	1
4.	Adapter SOP	332-1102-003	1
5.	Hole saw FKS 21	142-2200-021	1
	Hole saw FKS 30	142-2200-030	1
6.	Ratchet ½“	142-2103-001	1
7.	Silicon grease 70g	252-2000-004	1
8.	Transport box SOP	332-1102-003	1

SET APPLICATION RANGE

Material and internal diameter of the pipeline to be fixed:
DN 32 and 40 mm (5/4“ and 6/4“)

Media:
Natural gas, non-aggressive gases, other media subject to consultation with the manufacturer.

Maximum pressure in the pipeline to be fixed:
Up to 0,05 bar

Working temperature:
-10/+70°C

TECHNICAL PARAMETERS

Dimension of the connection thread:
G5/4“ and G6/4“ to CSN EN 228-1:2003

Total length with fully retracted loading rod:
5/4“ 350 mm, 6/4“ 360 mm

Maximum protrusion of the loading rod (metered from the chamber edge):
5/4“ 190 mm, 6/4“ 180 mm

Weight of the set including the transport box:
3,5 kg

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AIR TREATMENT UNIT

The system is used to treat compressed air for the compressed air driven devices and tools (drives, driving units etc.). The system is made up of two sections. The section 1 is used to separate water/ condensate from compressed air. In the section 2, special oil is added to lubricate compressed air systems. The system makes it possible to set the required quantity of oil.

Name	Catalogue No.
Air treatment unit*	331-2001-001
Air treatment unit with connection hose L2,5m*	331-2001-002

* Oil for compressed air tools 1L Catalogue No. 332-2002-001 is included in the delivery

TECHNICAL PARAMETERS

Input:
Bayonet coupling SKA 12 (1/2“)

Output:
Plug KAMLOCK DN15

Maximum working pressure:
18 bar

Maximum working temperature (at 10 bar):
50 °C

Warning:

We do not recommend to use any other connecting hose (but the ours) for the connection compressed air tools or devices to the air treatment unit with regard to possible damage due to lack of lubrication.

SPARE PARTS AND ACCESSORIES

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Pos. No.	Name	Catalogue No.
1.	Oil for pneumatic tools 1L	332-2002-001
2.	Connection hose L2,5m	332-2002-002
3.	Container for water separator	332-2002-003
4.	Container for lubrication	332-2002-004
5.	Seal	303-0150-200

NOTES

5. COMPONENTS FOR STEEL PIPES

COMPONENTS FOR STEEL PIPES

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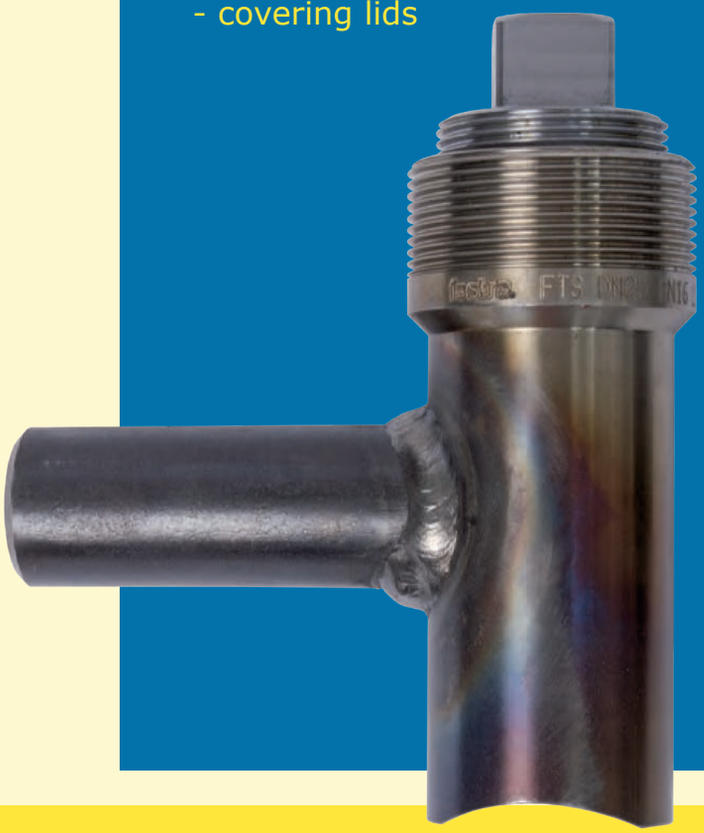
COMPONENTS FOR STEEL PIPES

PIPE FITTINGS FOR PIPELINE DRILLING AND CLOSURE

- shaped fittings
- tee fitting
- Line stop fittings
- covering lids



DESCRIPTION AND USAGE

Fittings for drilling and pipeline closure are steel fittings allowing realization of service and repair work on steel pipelines.

Shape and dimensions of the fittings have been adjusted to intended usage. Connection of fittings and pipeline is made by arc fusion welding (ČSN EN 14610).

We supply a wide range of types and dimensions of fittings for pipeline closure and drilling. Technical specification of types and dimensions of the fittings is indicated in the following data sheets.

APPLICATION

Outside diameter of pipeline to be welded:
26,9mm and more

Maximum diameter of the hole to be drilled in:
up to 90 mm

Operating medium:
Gas in accordance with ČSN EN 437, other media should be consulted

Maximum pressure load: up to 100 bar

Material:
Steel part: steel properties in accordance with ČSN EN 1028-1 and ČSN EN 10208-2

Sealing components: EPDM rubber with properties in accordance with ČSN EN 549

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COMPONENTS FOR STEEL PIPES

5.1 Pipe Fittings for Pipeline Drilling and Closure

5.1-1 FH-Shaped fittings

5.1-1.1 FH-shaped fitting FH with a stopper with an external square end

FH-shaped fitting with a stopper with an internal square end

5.1-2 Tee fitting FT

5.1-2.1 Tee fitting FT with a stopper with an external square end

Tee fitting FT with a stopper with an internal square end

5.1-3 Line stop fitting FS

5.1-3.1 Line stop fitting FS with a stopper with an external square end

Line stop fitting FS with a stopper with an internal square end

5.1-4 Cap FV

Cap FV for pipe fittings with a stopper with an external square end

Cap FV for pipe fittings with a stopper with an internal square end

5.1-5 Pipe plug Z-F1

Shaped Fittings of FH Type

Threaded Shaped fittings of FH type are steel fittings designed for implementation of closing balloons into pipeline, connecting ballooning and drilling sets, realization of by-pass, etc. when servicing or repairing steel pipelines.

There is an outside thread in the upper part of the neck body designed for connection of a drilling/ ballooning set, and there is an inside thread for a closing stopper. The lower part of the body is pre-processed for easier adjustment of welding surface before welding to the pipeline.

Closing stopper is equipped with a sealing O-ring, which ensures sealing of the neck after tightening the stopper. FH-necks are supplied with closing stoppers with external or internal square ends.

Secondary and supplementary sealing of the Shaped fittings may be made through installation of covering lid FV (following 5.1-4 hereof) or through a circumferential sealing weld for which the stopper and the upper part of the neck body have been adjusted.

APPLICATION AND SPECIFICATION

Outside diameter of pipeline to be welded:
60,3 mm and more (depending on the neck type)

Maximum diameter of the hole to be drilled in:
up to 90 mm

Media:
Natural gas, non-aggressive gas, other media should be consulted

Maximum pressure load:
16 up to 100 bar (depending on the type)

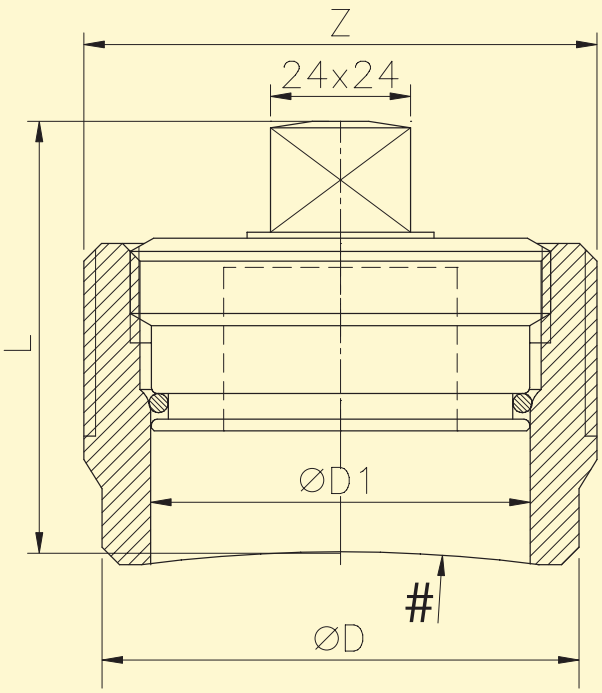
Material of the fitting:
Steel part: steel properties in accordance with ČSN EN 1028-1 and ČSN EN 10208-2

Sealing components: EPDM rubber with properties in accordance with ČSN EN 549

NOTES

Shaped Fitting of FH Type

WITH STOPPER WITH EXTERNAL SQUARE END



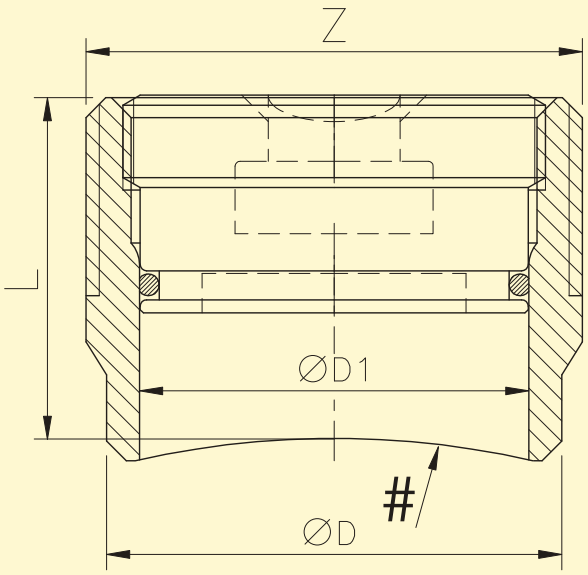
FH shaped fitting with a stopper with an external square end

PN	Name	#	Z	Ø D [mm]	Ø D1 [mm]	L [mm]	Catalogue No.
16	Shaped fitting FH PN16	(no radius)	G2½"	69	59	75	510-1116-000
	Shaped fitting FHM PN16	50	G2"	51	41	65	510-1116-010
	Shaped fitting FHS PN16	65 - 150	G2½"	69	59	67	510-1116-020
	Shaped fitting FHX PN16	over 200	G2½"	69	59	72	510-1116-030
	Shaped fitting FHXX PN16	500	G4"	112	91	87	510-1116-040
40	Shaped fitting FH PN40	(no radius)	G2½"	69	59	75	510-1140-000
	Shaped fitting FHM PN40	50	G2"	51	41	65	510-1140-010
	Shaped fitting FHS PN40	65 - 150	G2½"	69	59	67	510-1140-020
	Shaped fitting FHX PN40	over 200	G2½"	69	59	72	510-1140-030
	Shaped fitting FHXX PN40	500	G4"	105	83	88	510-1140-040
70	Shaped fitting FH PN70	(no radius)	G2½"	69	59	75	510-1170-000
	Shaped fitting FHM PN70	50	G2"	51	41	65	510-1170-010
	Shaped fitting FHS PN70	65 - 150	G2½"	69	59	67	510-1170-020
	Shaped fitting FHX PN70	over 200	G2½"	69	59	72	510-1170-030
	Shaped fitting FHXX PN70	500	G4"	105	83	88	510-1170-040
100	Shaped fitting FH PN100	(no radius)	G2½"	69	59	75	510-1190-000
	Shaped fitting FHM PN100	50	G2"	51	41	65	510-1190-010
	Shaped fitting FHS PN100	65 - 150	G2½"	69	59	67	510-1190-020
	Shaped fitting FHX PN100	over 200	G2½"	69	59	72	510-1190-030
	Shaped fitting FHXX PN100	500	G4"	105	83	88	510-1190-040

- to be welded to pipeline DN/ID [mm]
Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, L - for dimensions following the scheme

Shaped Fitting of FH Type

WITH STOPPER WITH INTERNAL SQUARE END



FH shaped fitting with a stopper with an internal square end

PN	Name	#	Z	Ø D [mm]	Ø D1 [mm]	L [mm]	Catalogue No.
16	Shaped fitting FH-F PN16	(no radius)	G2½"	69	59	55	510-1116-100
	Shaped fitting FHM-F PN16	50	G2"	51	41	45	510-1116-110
	Shaped fitting FHS-F PN16	65 - 150	G2½"	69	59	47	510-1116-120
	Shaped fitting FHX-F PN16	over 200	G2½"	69	59	52	510-1116-130
	Shaped fitting FHXX-F PN16	500	G4"	112	91	67	510-1116-140
40	Shaped fitting FH-F PN40	(no radius)	G2½"	69	59	55	510-1140-100
	Shaped fitting FHM-F PN40	50	G2"	51	41	45	510-1140-110
	Shaped fitting FHS-F PN40	65 - 150	G2½"	69	59	47	510-1140-120
	Shaped fitting FHX-F PN40	over 200	G2½"	69	59	52	510-1140-130
	Shaped fitting FHXX-F PN40	500	G4"	105	83	68	510-1140-140
70	Shaped fitting FH-F PN70	(no radius)	G2½"	69	59	55	510-1170-100
	Shaped fitting FHM-F PN70	50	G2"	51	41	45	510-1170-110
	Shaped fitting FHS-F PN70	65 - 150	G2½"	69	59	47	510-1170-120
	Shaped fitting FHX-F PN70	over 200	G2½"	69	59	52	510-1170-130
	Shaped fitting FHXX-F PN70	500	G4"	105	83	68	510-1170-140
100	Shaped fitting FH-F PN100	(no radius)	G2½"	69	59	55	510-1190-100
	Shaped fitting FHM-F PN100	50	G2"	51	41	45	510-1190-110
	Shaped fitting FHS-F PN100	65 - 150	G2½"	69	59	47	510-1190-120
	Shaped fitting FHX-F PN100	over 200	G2½"	69	59	52	510-1190-130
	Shaped fitting FHXX-F PN100	500	G4"	105	83	68	510-1190-140

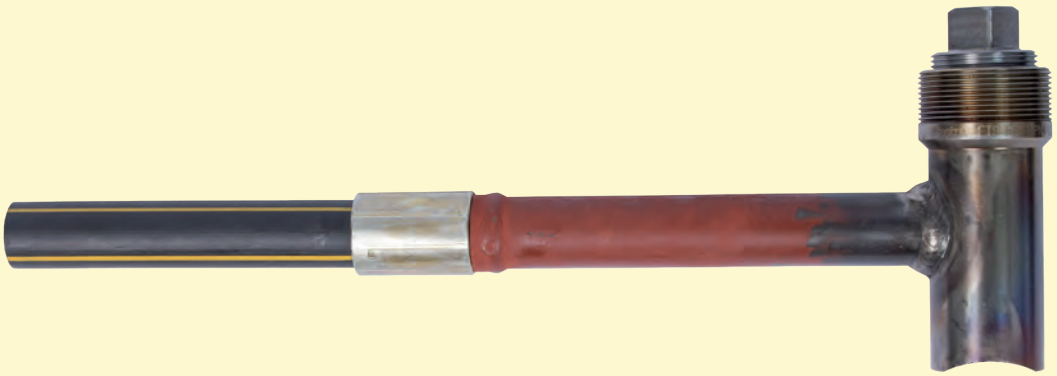
- to be welded to pipeline DN/ID [mm]
Z - - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, L - for dimensions following the scheme

Tee Fitting of FT Type

Tee fitting of FT type are steel fittings designed for realization of branches (connections) through drilling in steel pipeline with internal overpressure with no leakage of medium. After a T-piece is welded on the pipeline and connected with the branch pipe, the pipeline is drilled in and then the T-piece is closed with a stopper with no leakage of media.

There is an outside thread in the upper part of the T-piece designed for connection of a drilling set and there is an inside thread for a closing stopper. The lower part of the body is pre-processed for easier adjustment of welding surface before welding.

As a standard, T-pieces are supplied with a bevel for V-shaped weld located at the end of a branch outlet, or with an adapter steel/PE for connection of the branch pipes. Standard delivery also includes a closing stopper with an external or internal square end and a sealing O-ring. The stopper and the upper part of the T-piece body have been adjusted for possible circumferential sealing weld. Secondary sealing may also be made through installation of covering lid FV (following 5.1-4 hereof).



APPLICATION AND SPECIFICATION

Diameter of the branch pipe:
- steel pipe DN/ID 25 up to 100 mm (1"up to 4")
- PE pipe DN/OD 32 up to 110 mm

Maximum diameter of the drilled hole:
38 up to 89 mm

Outside diameter of pipeline to be welded:
48.3 mm and more

Media:
Natural gas, non-aggressive gas, other media should be consulted

Maximum pressure of medium:
- branch steel pipe – up to 16 bar
- branch PE pipe - up to 4 bar

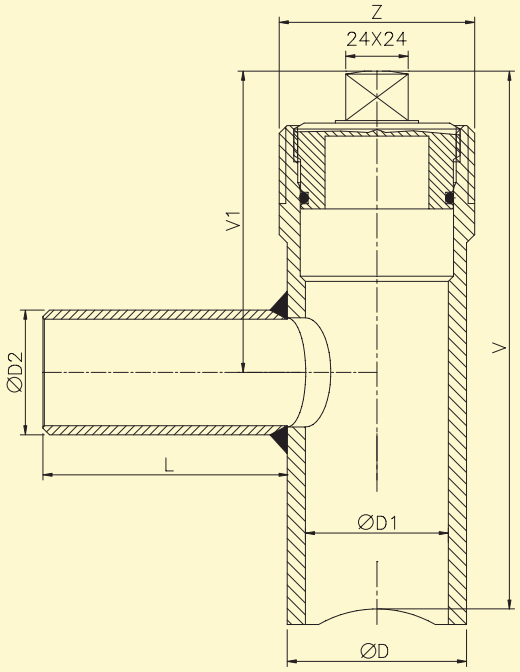
Material of the fitting:
Steel part: steel properties in accordance with ČSN EN 1028-1 and ČSN EN 10208-2

Sealing components: EPDM rubber with properties in accordance with ČSN EN 549

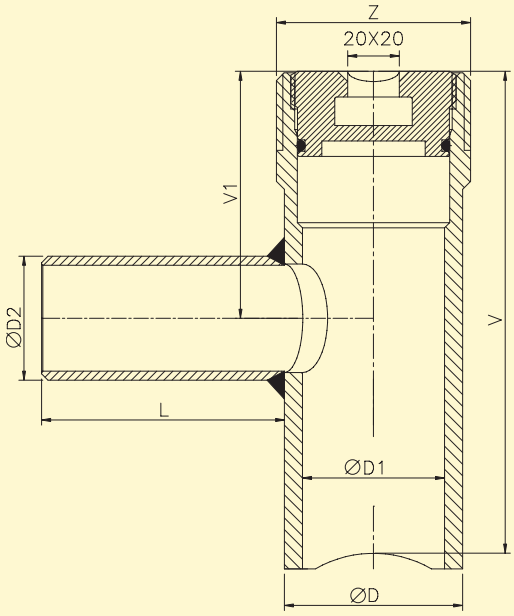
NOTES

Tee Fitting of FT Type

FOR BRANCH STEEL PIPES



With a stopper with an external square end



With a stopper with an internal square end

Tee fittings FT with a stopper with an external square end, designed for branch steel pipes

Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	V1 [mm]	L [mm]	Catalogue No.
Tee fitting FTS DN25	G2"	51	41	33,7 x 3,2	150	91	75	510-2110-025
Tee fitting FTS DN32	G2"	51	41	42,4 x 3,6	150	91	75	510-2110-032
Tee fitting FTX DN40	G2½"	69	55	48,3 x 3,6	210	115	75	510-2110-040
Tee fitting FTX DN50	G2½"	69	55	60,3 x 3,6	210	115	75	510-2110-050
Tee fitting FTXX DN65	G4"	112	91	76,1 x 3,6	220	115	95	510-2110-065
Tee fitting FTXX DN80	G4"	112	91	88,9 x 3,6	220	120	95	510-2110-080
Tee fitting FTXX DN100	G4"	112	91	108,4 x 4,0	220	120	95	510-2110-100

Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, V, V1, L - for dimensions following the scheme
D2 - dimension of steel pipeline to which the branch shall be connected

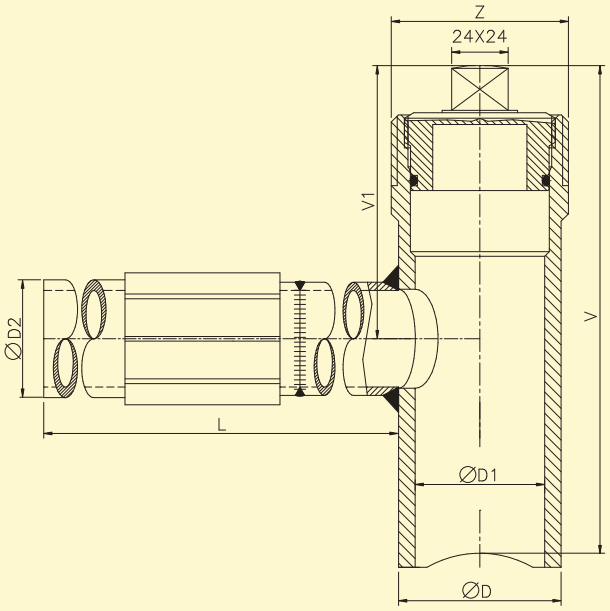
Tee fittings FT with a stopper with an internal square end, designed for branch steel pipes

Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	V1 [mm]	L [mm]	Catalogue No.
Tee fitting FTS-F DN25	G2"	51	41	33,7 x 3,2	130	71	75	510-2111-025
Tee fitting FTS-F DN32	G2"	51	41	42,4 x 3,6	130	71	75	510-2111-032
Tee fitting FTX-F DN40	G2½"	69	55	48,3 x 3,6	190	95	75	510-2111-040
Tee fitting FTX-F DN50	G2½"	69	55	60,3 x 3,6	190	95	75	510-2111-050
Tee fitting FTXX-F DN65	G4"	112	91	76,1 x 3,6	200	95	95	510-2111-065
Tee fitting FTXX-F DN80	G4"	112	91	88,9 x 3,6	200	100	95	510-2111-080
Tee fitting FTXX-F DN100	G4"	112	91	108,4 x 4,0	200	100	95	510-2111-100

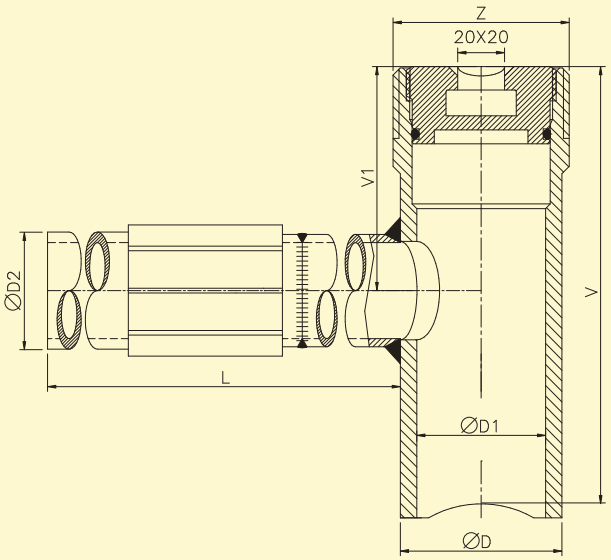
Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, V, V1, L - for dimensions following the scheme
D2 - dimension of steel pipeline to which the branch shall be connected

Tee Fittings of FT Type

FOR BRANCH PE PIPES



With a stopper with an external square end



With a stopper with an internal square end

Tee fittings FT with a stopper with an external square end, designed for branch PE pipes

Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	V1 [mm]	L [mm]	Catalogue No.
Tee fitting FTS PE d32	G2"	51	41	32 x 3,0	150	91	420	510-2120-032
Tee fitting FTS PE d40	G2"	51	41	40 x 3,7	150	91	420	510-2120-040
Tee fitting FTX PE d50	G2½"	69	55	50 x 4,6	210	115	420	510-2120-050
Tee fitting FTX PE d63	G2½"	69	55	63 x 5,8	210	115	420	510-2120-063
Tee fitting FTXX PE d90	G4"	112	91	90 x 5,2	220	120	610	510-2120-090
Tee fitting FTXX PE d110	G4"	112	91	110 x 6,3	220	120	610	510-2120-110

Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, V, V1, L - for dimensions following the scheme
D2 - dimension of PE pipeline to which the branch shall be connected

Tee fittings FT with a stopper with an internal square end, designed for branch PE pipes

Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	V1 [mm]	L [mm]	Catalogue No.
Tee fitting FTS-F PE d32	G2"	51	41	32 x 3,0	130	70	420	510-2121-032
Tee fitting FTS-F PE d40	G2"	51	41	40 x 3,7	130	70	420	510-2121-040
Tee fitting FTX-F PE d50	G2½"	69	55	50 x 4,6	190	95	420	510-2121-050
Tee fitting FTX-F PE d63	G2½"	69	55	63 x 5,8	190	95	420	510-2121-063
Tee fitting FTXX-F PE d90	G4"	112	91	90 x 5,2	200	100	610	510-2121-090
Tee fitting FTXX-F PE d110	G4"	112	91	110 x 6,3	200	100	610	510-2121-110

Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D, D1, V, V1, L - for dimensions following the scheme
D2 - dimension of PE pipeline to which the branch shall be connected

Line Stop Fittings of FS Type

Line stop fittings FS are steel fittings designed for closing the flow of medium, or for realization of by-pass on the pipes where fittings are mounted with welded joints.

There is an outside thread in the upper part of the shaped piece body designed for connection of a drilling/stoppling set, and there is an inside thread for a closing stopper. In the lower part of the body, there is a split sleeve, the inner diameter of which is identical to the outside diameter of the pipe to be closed. After proper installation, the sleeve reinforces the pipeline, the strength of which is affected by drilling in.

As a standard, the shaped pieces FS are supplied with a split sleeve and a closing stopper with an external or internal square end and a sealing O-ring. The stopper and the upper part of the shaped piece body have been adjusted for possible circumferential sealing weld. Secondary sealing may also be made through installation of covering lid FV (following 5.1-4 hereof).

APPLICATION AND SPECIFICATION

Diameter of the pipe to be closed:
- steel pipe DN/ID 20 up to 50 mm (3/4"up to 2")
- outside diameter 26,9 up to 60,3 mm (depending on type of the shaped piece)

Media:
Natural gas, non-aggressive gas, other media should be consulted

Maximum pressure of medium in the pipe to be closed:
up to 16 bar

Material of the shaped piece:
Steel part: steel properties in accordance with ČSN EN 1028-1 and ČSN EN 10208-2

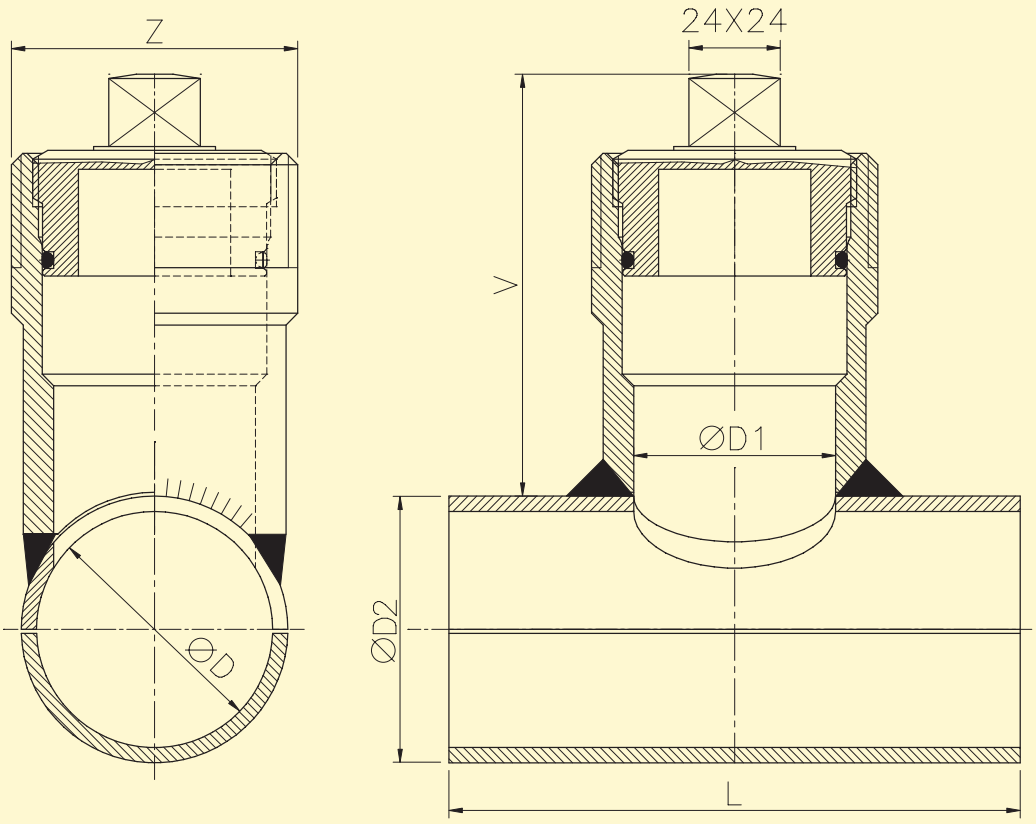
Sealing components: EPDM rubber with properties in accordance with ČSN EN 549

Maximum diameter of the drilled hole:
Ø 20 up to 51 mm (depending on type of the shaped piece)

NOTES

Line Stop Fittings of FS Type

WITH STOPPER WITH EXTERNAL SQUARE END

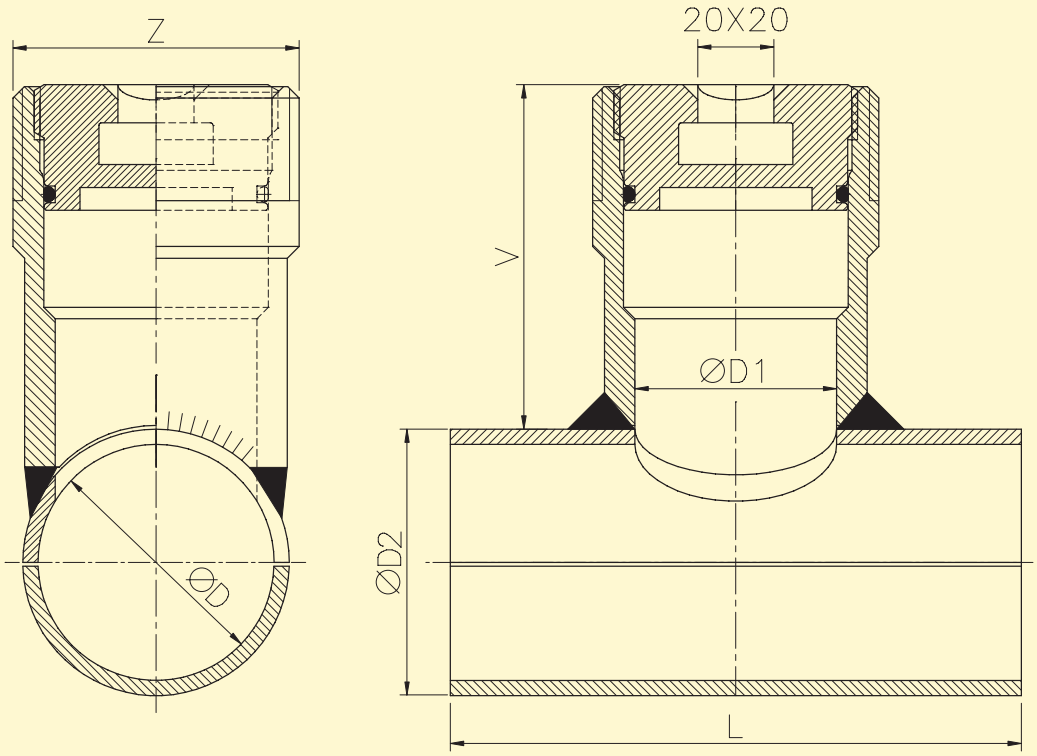


Line stop fitting FS with a stopper with an external square end							
Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	L [mm]	Catalogue No.
Line stop fitting FSS DN20	G 2"	26,9	27	34	95	120	510-3110-020
Line stop fitting FSS DN25	G 2"	33,7	27	42	95	120	510-3110-025
Line stop fitting FSS DN32	G 2"	42,4	37	51	95	150	510-3110-032
Line stop fitting FSS DN40	G 2"	48,3	41	57	95	150	510-3110-040
Line stop fitting FSX DN50	G 2½"	60,3	53	70	110	150	510-3110-050

D - to be welded to pipeline with outside diameter of [mm]
Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D1, D2, V, L - for dimensions following the scheme

Line Stop Fitting of FS Type

WITH STOPPER WITH INTERNAL SQUARE END



Line stop fitting FS with a stopper with an internal square end							
Name	Z	ØD [mm]	ØD1 [mm]	ØD2 [mm]	V [mm]	L [mm]	Catalogue No.
Line stop fitting FSS-F DN20	G 2"	26,9	27	34	75	120	510-3120-020
Line stop fitting FSS-F DN25	G 2"	33,7	27	42	75	120	510-3120-025
Line stop fitting FSS-F DN32	G 2"	42,4	37	51	75	150	510-3120-032
Line stop fitting FSS-F DN40	G 2"	48,3	41	57	75	150	510-3120-040
Line stop fitting FSX-F DN50	G 2½"	60,3	53	70	90	150	510-3120-050

D - to be welded to pipeline with outside diameter of [mm]
Z - outside thread in accordance with ČSN EN ISO 228-1:2003
D1, D2, V, L - for dimensions following the scheme

Cap FV

Cap FV are devices used for secondary closure and sealing of steel fittings for pipeline closure and drilling, equipped with stoppers with internal or external square ends.

On the lid, there is an inside thread used for screwing on a steel fitting. The lid is provided with a sealing O-ring.

On the outside surface, there are flats allowing easier tightening. Identification details are embossed on the top of the lid. The lids have been designed for underground pipelines as well as for the overhead ones.

APPLICATION AND SPECIFICATION

Operating medium:
Natural gas

Permissible temperature:
-30ºC up to +50ºC

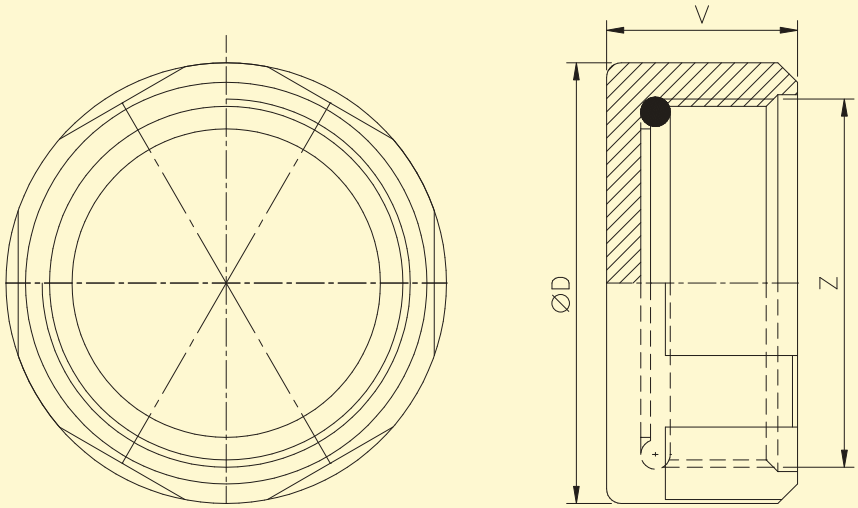
The highest pressure permissible:
100 bar

Material of the lid:
11 523 in accordance with ČSN 41 1523 or an equivalent in accordance with ČSN EN 1594

Material of the sealing O-ring:
NBR rubber

Cap FV

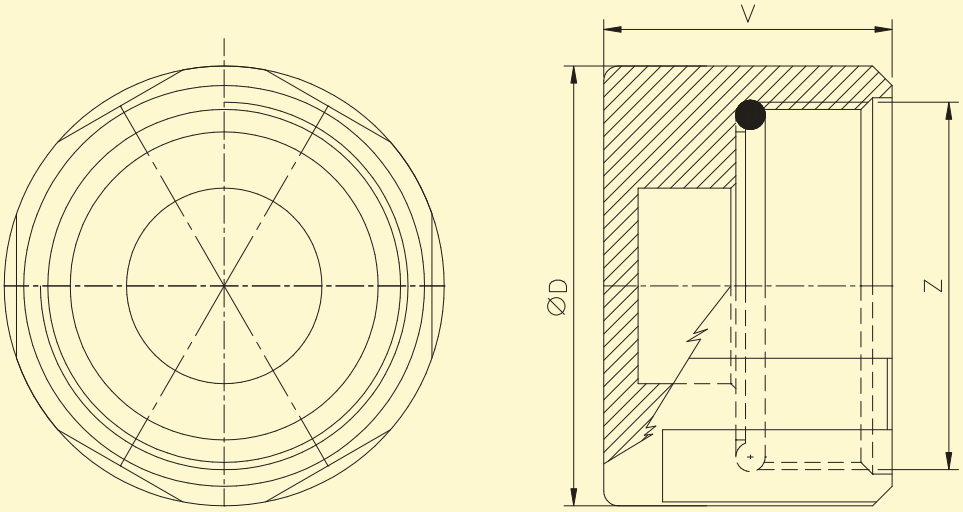
FOR FITTINGS WITH STOPPER WITH INTERNAL SQUARE END



Name	Z	ØD [mm]	V [mm]	Catalogue No.
Cap FV-F 2"	G2"	75	39	510-4002-020
Cap FV-F 2,5"	G2,5"	90	39	510-4002-025
Cap FV-F 4"	G4"	129	49	510-4002-040

Z - inner thread in accordance with ČSN EN ISO 228-1:2003
D, V - for dimensions following the scheme

FOR FITTINGS WITH STOPPER WITH EXTERNAL SQUARE END



Name	Z	ØD [mm]	V [mm]	Catalogue No.
Cap FV 2"	G2"	75	59	510-4001-020
Cap FV 2,5"	G2,5"	90	59	510-4001-025
Cap FV 4"	G4"	129	67	510-4001-040

Z - inner thread in accordance with ČSN EN ISO 228-1:2003
D, V - for dimensions following the scheme

Pipe Plug Z-F1

Pipe plug Z - F1 has been designed for closure and subsequent permanent blanking of pipes made by welding in a case when it is impossible to remove the medium out of the pipeline completely, or in a case when the medium may leak into the pipeline during the blanking process. In the piping containing combustible gas, this appliance eliminates the risk of explosion or fire when blanking the pipeline by welding.

A rubber sealing component threaded into the blanking part. The blanking part has been adjusted for controlling the rubber sealing component and for installation on the pipeline made by welding.

The rubber sealing components are produced with antistatic finish (surface resistance of the closing bodies RO ≤ 109 Ω in accordance with ČSN 33 2030 - Protection against harmful effects of static electricity).

APPLICATION AND SPECIFICATION

Inner diameter of the pipe to be closed:
25 - 50 mm (1" up to 2")

Material of the pipe to be closed:
welding steel, other materials should be consulted with the manufacturer

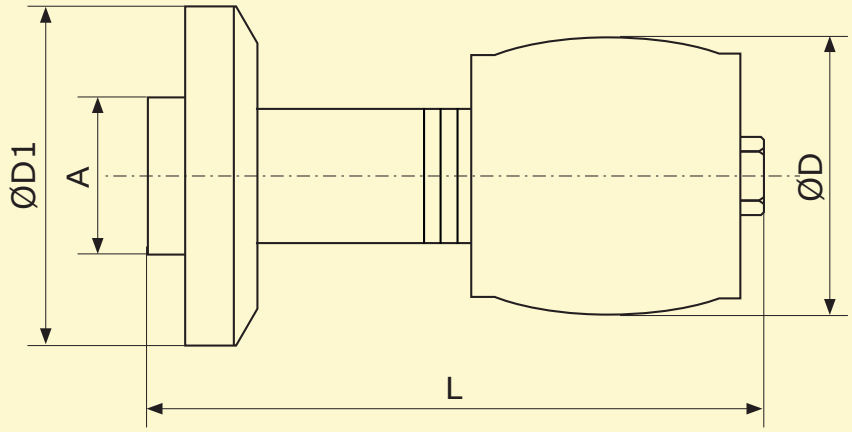
Maximum operating pressure:
(after the installation is completed) 16 bar

Maximum pressure when loading into the pipe:
0,05 bar

Media:
Natural gas, water, non-aggressive gas and liquid, other media should be consulted with the manufacturer

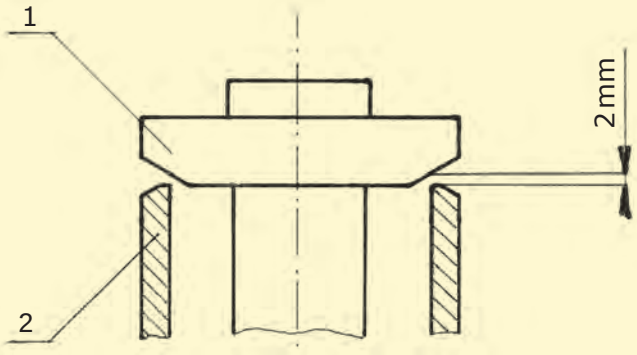
Operating temperature:
-20/+70°C

Pipe Plug Z - F1



Name	ØD [mm]	ØD1 [mm]	L [mm]	A [mm]	Catalogue No.
Pipe plug Z-F1 DN25	25 - 30	35	90	22	271-1100-025
Pipe plug Z-F1 DN32	30 - 35	43	105	22	271-1100-032
Pipe plug Z-F1 DN40	35 - 45	49	105	27	271-1100-040
Pipe plug Z-F1 DN50	45 - 55	60	115	27	271-1100-050

D - application range for pipes with inner diameter from - to
D1, A, L - for dimensions following the scheme
A - wrench square



Scheme of position of the blanking part in the pipe to be blanked before welding

fastra.

COMPONENTS FOR STEEL PIPES

PATCHES FOR REPAIRING PIPES

- with sealing components
- with-blow-off
- special
- accessories

DESCRIPTION AND USAGE

Repair patches for repairing pipeline of product supply system damaged due to corrosion or mechanical impact.

Steel part – a sector of cylindrical part of the piping; its inner diameter follows the outside diameter of the pipe to be repaired. The inner side of the patch is provided with sealing components with high level of thermal resistance

When repairing, the patches shall be attached to the damaged part of the pipe and pressed down using a suitable fixture (e.g. UPU device – following the sheet 3.2 hereof). Sealing located on the inner side of the patch will separate gas-tightly the area of the damaged pipeline and the patch edge intended for making the weld joint.

After checking for any leakage, the patch shall be welded to the pipe. The version with a relief valve ensures pressure relief of the patch sealing when it is attached and this also ensures safe welding. To handle the stopper and safe diversion of the leaking medium outside the installation area, the installation kit FZ-V (following the sheet 5.2-4.1 hereof) must be used. The upper edge of the neck and the stopper of the relief valve have been adjusted for a safety sealing weld to be made after the repair is completed.

Identification details of the patch have been embossed on the outer side of the cylindrical part.

APPLICATION

As a standard, supplied for the pipe with dimensions of:
DN 40 up to DN 500

Pressure load:
PN 16 up to PN 40

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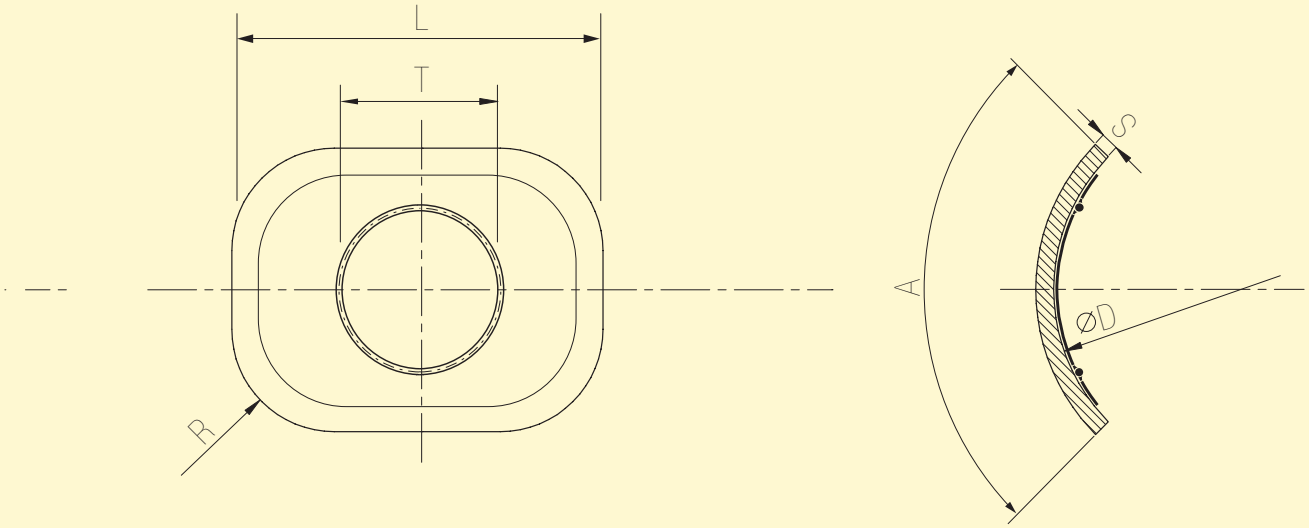
COMPONENTS FOR STEEL PIPES

5.2 Patches for Repairing Pipes

Patches FZS

A patch for repairing pipes of FZS type (hereinafter referred to as a patch) is used to repair locally damaged steel pipelines (e.g. damaged by corrosion or mechanical impact) with no leakage of medium or with leakage of medium, with the highest value of operating pressure up to 16bar. On the inner side, the patch is provided with para-amid insulation and silicone sealing components.

VERSION A



VERSION B

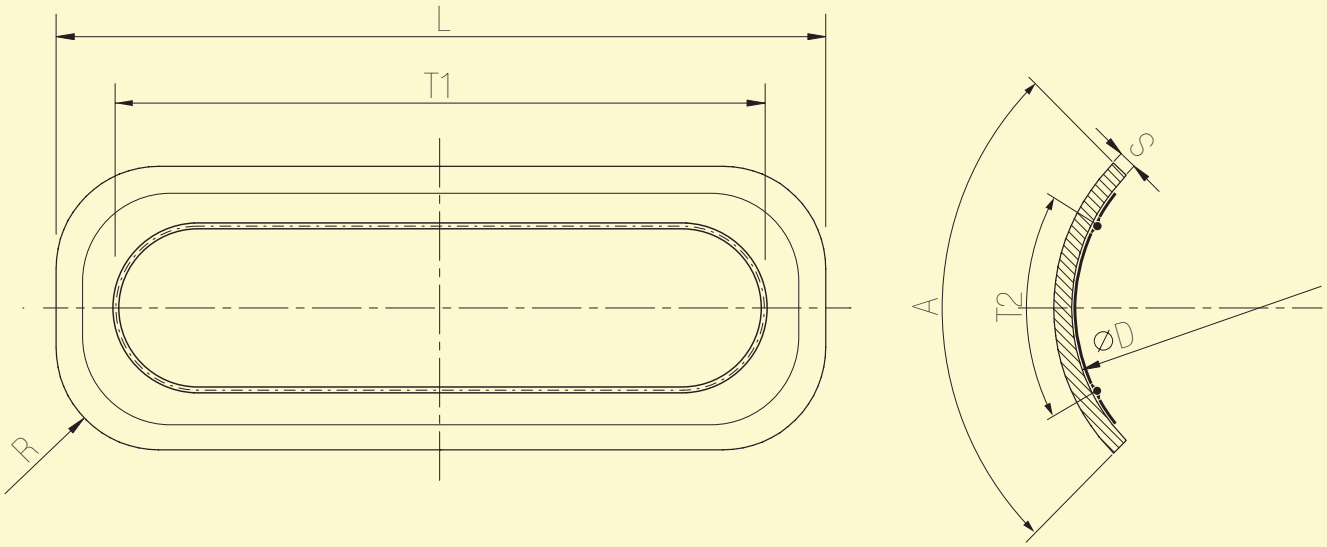


Table of standard dimensions is indicated in the following page.
Other dimensions should be consulted ☎

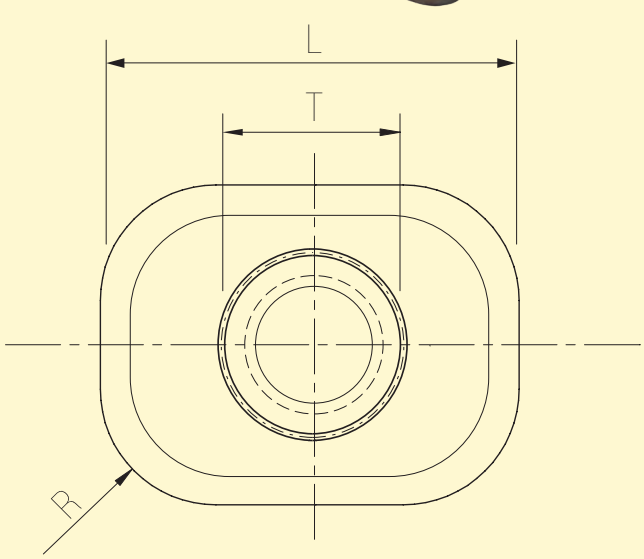
Patches FZS

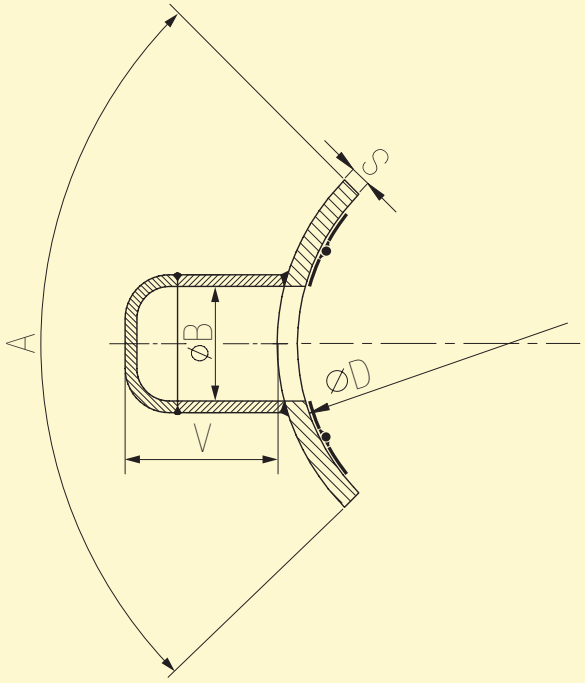
Name - dimension	D [mm]	Version	Steel part					Sealing		Catalogue No.
			L [mm]	A [mm]	O	R [mm]	S [mm]	ø T [mm]	T1 x T2 [mm]	
Patch FZS DN50 x 150	60,3	A	150	85	1/2	10	3,6	41,5	–	520-1115-060
Patch FZS DN50 x 300		B	300	85		10		–	270 x 40	520-1130-060
Patch FZS DN50 x 500		B	500	85		10		–	470 x 40	520-1150-060
Patch FZS DN65 x 150	76,1	A	150	110		14	3,2	41,5	–	520-1115-076
Patch FZS DN65 x 300		B	300	110		14		–	270 x 50	520-1130-076
Patch FZS DN65 x 500		B	500	110		14		–	470 x 50	520-1150-076
Patch FZS DN80 x 150	88,9	A	150	85	1/3	14	4,0	51,5	–	520-1115-088
Patch FZS DN80 x 300		B	300	85		14		–	270 x 50	520-1130-088
Patch FZS DN80 x 500		B	500	85		14		–	470 x 50	520-1150-088
Patch FZS DN100 x 150	108,0	A	150	105	1/3	14	4,0	51,5	–	520-1115-108
Patch FZS DN100 x 300		B	300	105		14		–	260 x 65	520-1130-108
Patch FZS DN100 x 500		B	500	105		14		–	460 x 65	520-1150-108
Patch FZS DN125 x 150	133,0	A	150	130	1/3	17	4,0	71,5	–	520-1115-133
Patch FZS DN125 x 300		B	300	130		17		–	260 x 90	520-1130-133
Patch FZS DN125 x 500		B	500	130		17		–	460 x 90	520-1150-133
Patch FZS DN150 x 150	159,0	A	150	120	1/4	17	4,5	72,0	–	520-1115-159
Patch FZS DN150 x 300		B	300	120		17		–	260 x 80	520-1130-159
Patch FZS DN150 x 500		B	500	170	1/3	17		–	460 x 130	520-1150-159
Patch FZS DN200 x 150	219,1	A	150	160	1/4	19	6,3	92	–	520-1115-219
Patch FZS DN200 x 300		B	300	160		19		–	240 x 100	520-1130-219
Patch FZS DN200 x 500		B	500	225	1/3	19		–	440 x 165	520-1150-219
Patch FZS DN250 x 150	273,0	A	150	150	1/5	19	7,1	92	–	520-1115-273
Patch FZS DN250 x 300		B	300	150		19		–	240 x 90	520-1130-273
Patch FZS DN250 x 500		B	500	275	1/3	19		–	440 x 215	520-1150-273
Patch FZS DN300 x 150	323,9	A	150	200	1/5	23	8,8	92,5	–	520-1115-323
Patch FZS DN300 x 300		B	300	200		23		–	220 x 120	520-1130-323
Patch FZS DN300 x 500		B	500	350	1/3	23		–	420 x 270	520-1150-323
Patch FZS DN350 x 150	355,6	A	150	170	1/6	25	10,0	92,5	–	520-1115-355
Patch FZS DN350 x 300		B	300	170		25		–	220 x 90	520-1130-355
Patch FZS DN350 x 500		B	500	380	1/3	25		–	420 x 300	520-1150-355
Patch FZS DN400 x 200	406,4	A	200	200	1/6	27	10,0	122,5	–	520-1120-406
Patch FZS DN400 x 300		B	300	200		27		–	220 x 120	520-1130-406
Patch FZS DN400 x 500		B	500	435	1/3	27		–	420 x 355	520-1150-406
Patch FZS DN500 x 200	508,0	A	200	245	1/6	30	10,0	122,5	–	520-1120-508
Patch FZS DN500 x 300		B	300	245		30		–	220 x 165	520-1130-508
Patch FZS DN500 x 500		B	500	535	1/3	30		–	420 x 455	520-1150-508

D - outer diameter of the repaired pipeline
O - part of the circuit repaired pipeline covering overlays the patch

Patches FZSD

A patch for repairing pipes of FZS type (hereinafter referred to as a patch) is used to repair locally damaged steel pipelines (e.g. damaged by corrosion or mechanical impact) with no leakage of medium or with leakage of medium, with the highest value of operating pressure up to 16bar, in the points where branches were removed from the pipe. The damaged point shall be covered with a bottom plate that is welded to the cylindrical part of the patch. On the inner side, the patch is provided with para-amid insulation and silicone sealing components.





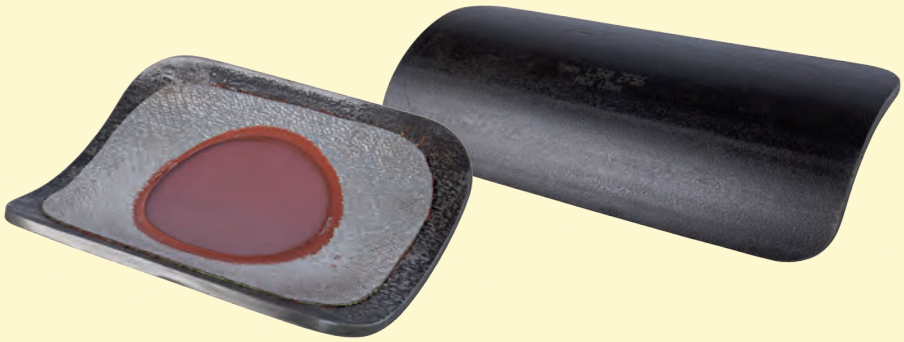
Name - dimension	D [mm]	Steel cylindrical part				Bottom plate		Sealing ø T [mm]	Catalogue No.
		L [mm]	A [mm]	R [mm]	S [mm]	B [mm]	V [mm]		
Patch FZSD DN80	88,9	150	85	14	4,0	40	65	60	520-1200-088
Patch FZSD DN100	108,0	150	105	14	4,0	52	65	80	520-1200-108
Patch FZSD DN125	133,0	150	130	17	4,0	68	75	90	520-1200-133
Patch FZSD DN150	159,0	150	120	17	4,5	80	85	100	520-1200-159
Patch FZSD DN200	219,1	150	160	19	6,3	100	95	140	520-1200-219
Patch FZSD DN250	273,0	150	150	19	7,1	100	110	140	520-1200-273
Patch FZSD DN300	323,9	200	200	23	8,8	100	130	140	520-1200-323

D - outer diameter of the repaired pipeline
Other dimensions should be consulted ☎

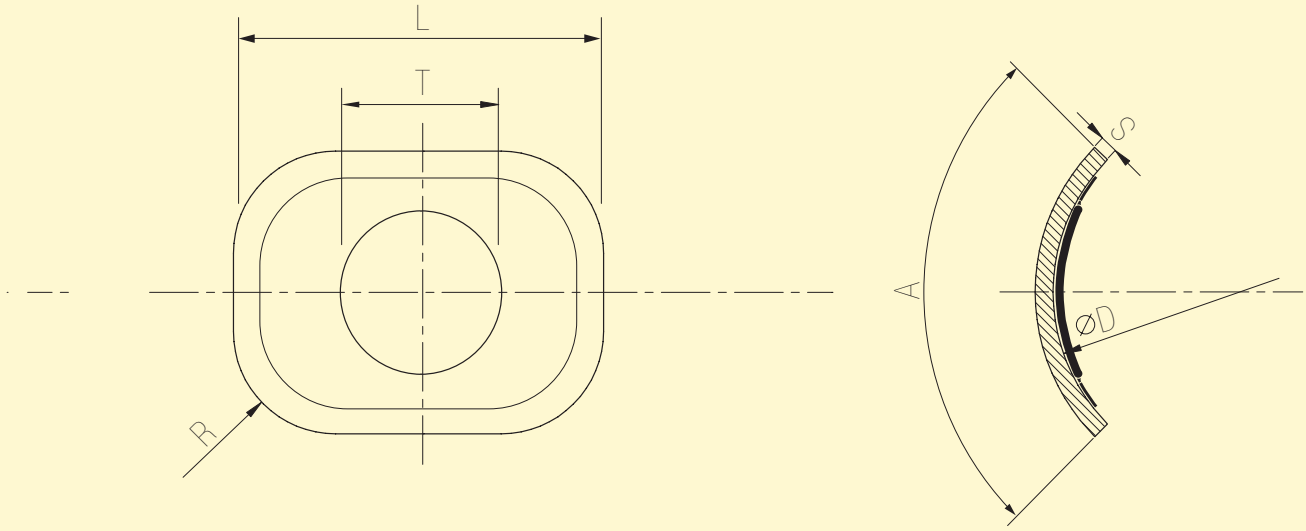
NOTES

Patches FZSV

A patch for repairing pipes of FZS type (hereinafter referred to as a patch) is used to repair locally damaged steel pipelines (e.g. damaged by corrosion or mechanical impact) with no leakage of medium or with leakage of medium, with the highest value of operating pressure up to 16bar. On the inner side, the patch is provided with para-amid insulation and silicone sealing components.



VERSION A



VERSION B

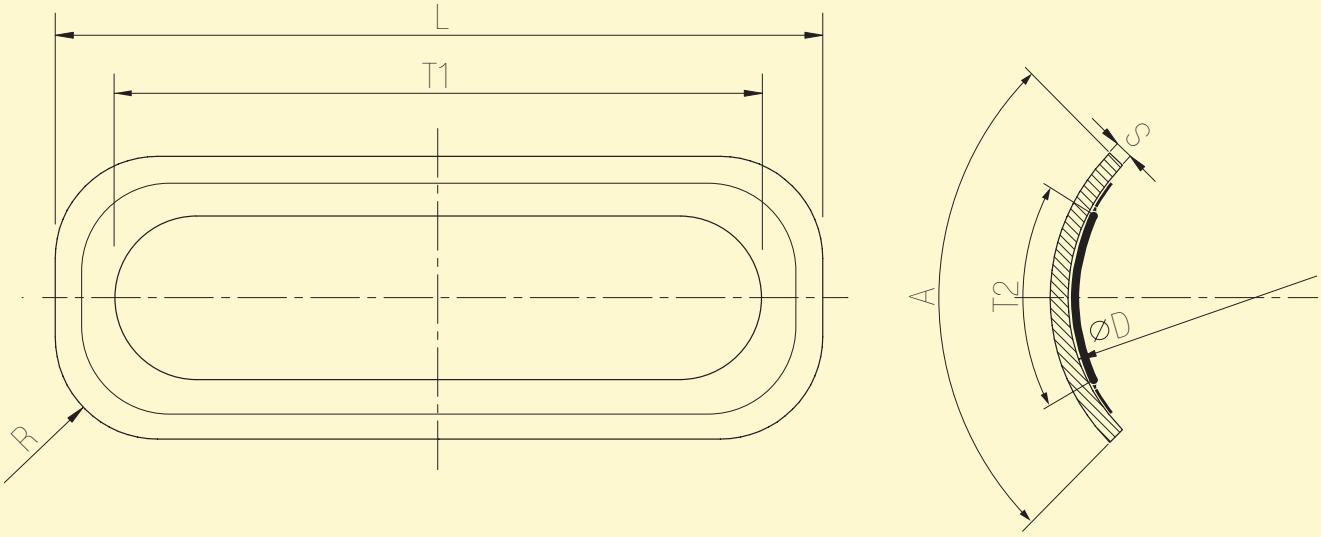


Table of standard dimensions is indicated in the following page.
Other dimensions should be consulted ☎

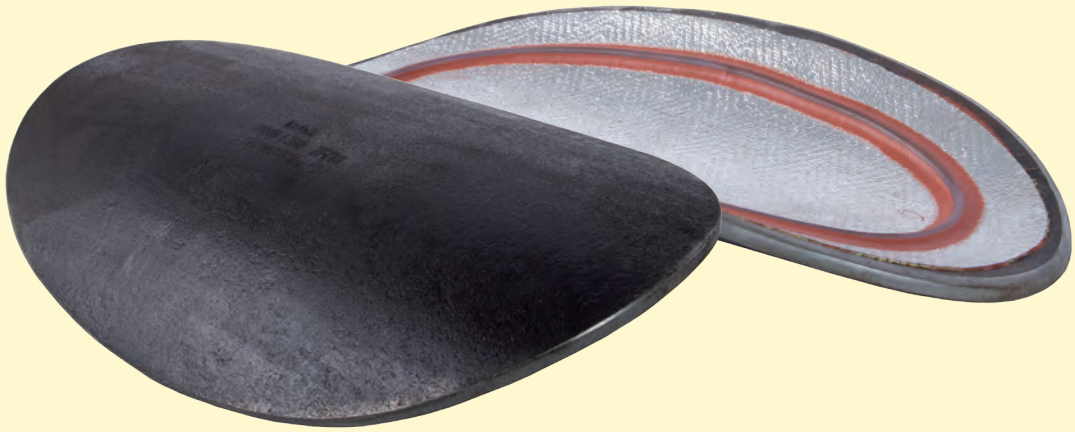
Patches FZSV

Name - dimension	D [mm]	Version	Steel part					Sealing		Catalogue No.
			L [mm]	A [mm]	O	R [mm]	S [mm]	ø T [mm]	T1 x T2 [mm]	
Patch FZSV DN50 x 150	60,3	A	150	85	1/2	10	3,6	41,5	–	520-1315-060
Patch FZSV DN50 x 300		B	300	85		10		–	270 x 40	520-1330-060
Patch FZSV DN80 x 150	88,9	A	150	85	1/3	14	4,0	51,5	–	520-1315-088
Patch FZSV DN80 x 300		B	300	85		14		–	270 x 50	520-1330-088
Patch FZSV DN100 x 150	108,0	A	150	105	1/3	14	4,0	51,5	–	520-1315-108
Patch FZSV DN100 x 300		B	300	105		14		–	260 x 65	520-1330-108
Patch FZSV DN100 x 500		B	500	105		14		–	460 x 65	520-1350-108
Patch FZSV DN125 x 150	133,0	A	150	130	1/3	17	4,0	71,5	–	520-1315-133
Patch FZSV DN125 x 300		B	300	130		17		–	260 x 90	520-1330-133
Patch FZSV DN125 x 500		B	500	130		17		–	460 x 90	520-1350-133
Patch FZSV DN150 x 150	159,0	A	150	120	1/4	17	4,5	72,0	–	520-1315-159
Patch FZSV DN150 x 300		B	300	120		17		–	260 x 80	520-1330-159
Patch FZSV DN150 x 500		B	500	170	1/3	17		–	460 x 130	520-1350-159
Patch FZSV DN200 x 150	219,1	A	150	160	1/4	19	6,3	92	–	520-1315-219
Patch FZSV DN200 x 300		B	300	160		19		–	240 x 100	520-1330-219
Patch FZSV DN200 x 500		B	500	225	1/3	19		–	440 x 165	520-1350-219
Patch FZSV DN250 x 150	273,0	A	150	150	1/5	19	7,1	92	–	520-1315-273
Patch FZSV DN250 x 300		B	300	150		19		–	240 x 90	520-1330-273
Patch FZSV DN250 x 500		B	500	275	1/3	19		–	440 x 215	520-1350-273
Patch FZSV DN300 x 150	323,9	A	150	200	1/5	23	8,8	92,5	–	520-1315-323
Patch FZSV DN300 x 300		B	300	200		23		–	220 x 120	520-1330-323
Patch FZSV DN300 x 500		B	500	350	1/3	23		–	420 x 270	520-1350-323

D - outer diameter of the repaired pipeline
O - part of the circuit repaired pipeline covering overlays the patch

Patches FZV

A patch for repairing pipes of FZV type (hereinafter referred to as a patch) is used to repair locally damaged steel pipelines (e.g. damaged by corrosion or mechanical impact) with no leakage of medium or with leakage of medium, with the highest value of operating pressure up to 40 bar.



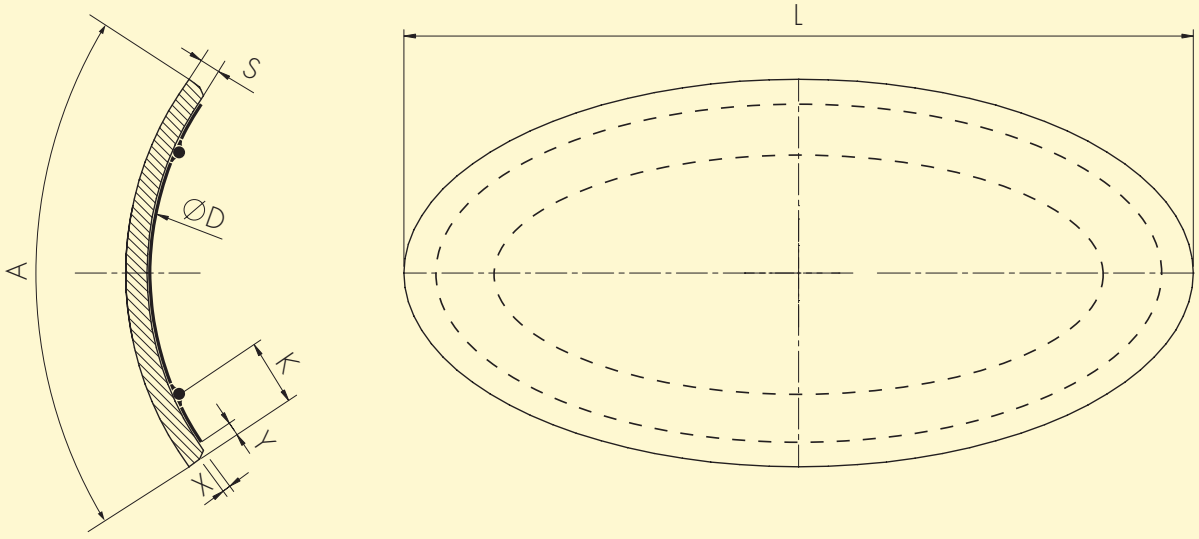


Table of standard dimensions is indicated in the following page.
Other dimensions should be consulted ☎

Permissible overpressure of medium in the damaged piping when the patch is being applied:
max. 500 kPa

Permissible leakage of medium out of the damaged piping when the patch is being applied:
max. 50 m^3/hour

For other technical parameters following 5.2

Patches FZV

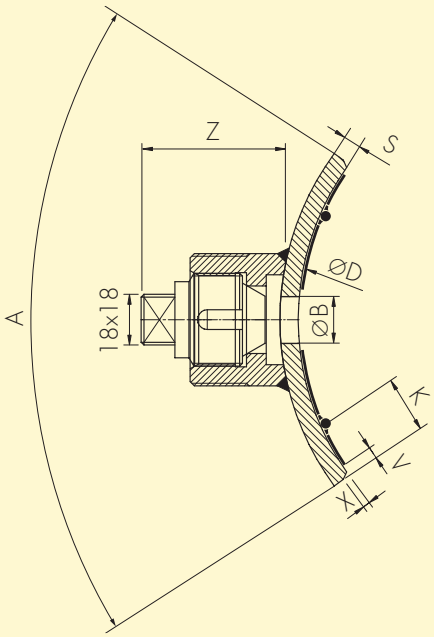
Name - dimension	D [mm]	L [mm]	Patch width		Patch wall		Inner side		Catalogue No.
			A [mm]	O	S [mm]	bevel 45°/X [mm]	K [mm]	Y [mm]	
Patch FZV DN50 x 150	60,3	150	100	1/2	5,0	1,6	15	5	520-2115-060
Patch FZV DN65 x 150	76,1	150	130	1/2					520-2115-076
Patch FZV DN80 x 150	88,9	150	100	1/3	6,3	1,6			520-2115-088
Patch FZV DN80 x 300		300	150	1/2					520-2130-088
Patch FZV DN80 x 500		500	150						520-2150-088
Patch FZV DN100 x 150	108	150	115	1/3	7,1	1,7	20	10	520-2115-108
Patch FZV DN100 x 300		300	180	1/2					520-2130-108
Patch FZV DN100 x 500		500	180						520-2150-108
Patch FZV DN125 x 150	133	150	145	1/3	6,3	1,6			520-2115-133
Patch FZV DN125 x 300		300	145						520-2130-133
Patch FZV DN125 x 500		500	145						520-2150-133
Patch FZV DN150 x 150	159	150	125	1/4	7,1	1,7	30		520-2115-159
Patch FZV DN150 x 300		300	170	1/3					520-2130-159
Patch FZV DN150 x 500		500	170						520-2150-159
Patch FZV DN200 x 150	219,1	170	170	1/4	7,1	1,7	30	10	520-2115-219
Patch FZV DN200 x 300		300	230	1/3					520-2130-219
Patch FZV DN200 x 500		500	230						520-2150-219
Patch FZV DN250 x 150	273	175	175	1/5	10,0	2,5			520-2115-273
Patch FZV DN250 x 300		300	220	1/4					520-2130-273
Patch FZV DN250 x 500		500	295	1/3					520-2150-273
Patch FZV DN300 x 150	323,9	170	170	1/6			40		520-2115-323
Patch FZV DN300 x 300		300	205	1/5					520-2130-323
Patch FZV DN300 x 500		500	350	1/3					520-2150-323
Patch FZV DN350 x 200	355,6	200	190	1/6					520-2120-355
Patch FZV DN350 x 300		300	290	1/4					520-2130-355
Patch FZV DN350 x 500		500	380	1/3					520-2150-355
Patch FZV DN400 x 200	406,4	210	210	1/6					520-2120-406
Patch FZV DN400 x 300		300	325	1/4					520-2130-406
Patch FZV DN400 x 500		500	435	1/3					520-2150-406
Patch FZV DN500 x 200	508	200	200	1/8					520-2120-508
Patch FZV DN500 x 300		320	320	1/5					520-2130-508
Patch FZV DN500 x 500		500	545	1/3					520-2150-508

L, A, S, X, K, Y - for dimensions following the scheme
D - outer diameter of the repaired pipeline
O - part of the circuit repaired pipeline covering overlays the patch

Patches FZVH

A patch for repairing pipes of FZVH type (hereinafter referred to as a patch) is used to repair locally damaged steel pipelines (e.g. damaged by corrosion or mechanical impact) with no leakage of medium or with leakage of medium, with the highest value of operating pressure up to 40 bar.

There is a relief valve mounted to the outer side of the patch; the valve is used to release pressure of the sealing when the patch is applied. To handle the stopper and safe diversion of the leaking medium outside the installation area, the installation kit FZ-V (following 5.2-4.1 hereof) must be used. The upper edge of the neck and the stopper of the relief valve have been adjusted for a safety sealing weld to be made after the repair is completed.



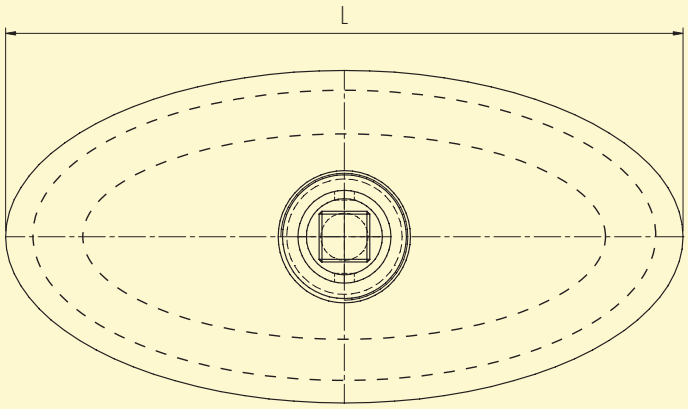


Table of standard dimensions is indicated in the following page.
Other dimensions should be consulted ☎

Permissible overpressure of medium in the damaged piping when the patch is being applied: in accordance with the working procedure approved by the operator

Permissible leakage of medium out of the damaged piping when the patch is being applied: : max. 150 m^3/ hour

For other technical parameters following 5.2

Patches FZVH

Name - dimension	D [mm]	L [mm]	Patch width		Patch wall		Inner side		Catalogue No.
			A [mm]	O	S [mm]	bevel45°/X [mm]	K [mm]	Y [mm]	
Patch FZVH DN50 x 150	60,3	150	100	1/2	5,0	1,6	15	5	520-2215-060
Patch FZVH DN65 x 150	76,1	150	130	1/2					520-2215-076
Patch FZVH DN80 x 150	88,9	150	100	1/3	6,3	1,6			520-2215-088
Patch FZVH DN80 x 300		300	150	1/2					520-2230-088
Patch FZVH DN80 x 500		500	150						520-2250-088
Patch FZVH DN100 x 150	108	150	115	1/3	7,1	1,7	20	10	520-2215-108
Patch FZVH DN100 x 300		300	180	1/2					520-2230-108
Patch FZVH DN100 x 500		500	180						520-2250-108
Patch FZVH DN125 x 150	133	150	145	1/3	6,3	1,6			520-2215-133
Patch FZVH DN125 x 300		300	145						520-2230-133
Patch FZVH DN125 x 500		500	145						520-2250-133
Patch FZVH DN150 x 150	159	150	125	1/4	7,1	1,7			520-2215-159
Patch FZVH DN150 x 300		300	170	1/3					520-2230-159
Patch FZVH DN150 x 500		500	170						520-2250-159
Patch FZVH DN200 x 150	219,1	170	170	1/4			30		520-2215-219
Patch FZVH DN200 x 300		300	230	1/3					520-2230-219
Patch FZVH DN200 x 500		500	230						520-2250-219
Patch FZVH DN250 x 150	273	175	175	1/5	10,0	2,5			520-2215-273
Patch FZVH DN250 x 300		300	220	1/4					520-2230-273
Patch FZVH DN250 x 500		500	295	1/3					520-2250-273
Patch FZVH DN300 x 150	323,9	170	170	1/6			40		520-2215-323
Patch FZVH DN300 x 300		300	205	1/5					520-2230-323
Patch FZVH DN300 x 500		500	350	1/3					520-2250-323
Patch FZVH DN350 x 200	355,6	200	190	1/6					520-2220-355
Patch FZVH DN350 x 300		300	290	1/4					520-2230-355
Patch FZVH DN350 x 500		500	380	1/3					520-2250-355
Patch FZVH DN400 x 200	406,4	210	210	1/6					520-2220-406
Patch FZVH DN400 x 300		300	325	1/4					520-2230-406
Patch FZVH DN400 x 500		500	435	1/3					520-2250-406
Patch FZVH DN500 x 200	508	200	200	1/8					520-2220-508
Patch FZVH DN500 x 300		320	320	1/5					520-2230-508
Patch FZVH DN500 x 500		500	545	1/3					520-2250-508

Z=51mm for all dimensions of the patches (hright of the relief valve)
B=24mm for all dimensions of the patches (diameter of the relief hole)
L, A, S, X, K, Y, Z, B - for dimensions following the scheme
D - outer diameter of the repaired pipeline
O - part of the circuit repaired pipeline covering overlays the patch

Special Patches

Special patches are pipe parts used to repair steel pipelines in a case when it is not possible to use Standard patches of FZS type and FZV type (following 5.2-1.1 up to 5.2-2.2 hereof). These can be used e.g. in bends in the points pipeline branches, etc.

Their shapes and structures are very specific, as they depend on particular conditions in the point to be repaired; they depend especially on operating pressure and shape of the pipeline. However, they are always constructed to ensure maximum safety during application and operation of the patch.

For the above-mentioned reasons they are usually tailor-made.

The pictures below show some examples of the special patches. If you want us to produce a special patch, please contact our sales representatives or the production manager.

Sxample of mounting special patches

NOTES

Installation Set FZ-V

The set is designed for safe application of the patches of FZVH type.

The kit includes relief chamber with a steel stopper rod adjusted for handling the patch stopper, a control key and a wrench. The relief chamber has been adjusted for connection of a hose to vent the leaking medium out of the working area when the patch is being applied.

The kit is supplied in a transport case.

APPLICATION OF THE KIT CONTAINING BASIC EQUIPMENT

Application:
Application of patches of FZVH type made by FASTRA, s.r.o.

Media:
Natural gas, non-aggressive gas, other media should be consulted

Pressure load:
max. 40 bar

Flow of the medium:
max. 150 m^3/hour

Installation Set FZ-V

Position No.	Name	Catalogue No.	
1.	**Set FZ-V**	**521-4101-001**	
	The set includes		
2.	FZV chamber with pressure relief	522-4101-001	1 ks
3.	Plugging rod FZ-V	522-4101-002	1 ks
4.	Control tool FZ-V	522-4101-003	1 ks
5.	Allen wrench no. 3	142-2103-003	1 ks
6.	Pressure hose PYROJACKET 25/3m	522-4101-023	1 ks
7.	Transport box FZ-V	522-4101-010	1 ks

Supplementary equipment		
6.	Pressure hose PYROJACKET 25/5m	522-4101-025
6.	Pressure hose PYROJACKET 25/10m	522-4101-028
8.	Protective anti fire case AL 38/1,5m	522-4102-015

Note:
Hose and fireproof cloths may be produced in various length and diameter on request

fastra.

COMPONENTS FOR STEEL PIPES

COMPACT INSULATION JOINTS

DESCRIPTION AND USAGE

Insulation joints are piping parts that are used to break conductivity of steel pipelines in the points where pipes are separated by insulation. They are especially applied in cathodic protection systems.

Compact insulation joints of SHD type have been designed with circular spark gap (Patent mo. 389367), which ensures their high reliability in operation and longer service life as compared to the systems equipped with the spot type of the spark gap. They are characterized with compact, highly mechanically resistant structure which is applicable in underground pipelines as well as in the overhead ones.

They are produced in wide range of dimensions and versions, for various media, with various connecting ends, external and internal anti-corrosion protection, etc.

Particular specification for each type of insulation joints is indicated in the following data sheets.

On request, insulation joints may be also supplied in accordance customer's requirements and specifications.

APPLICATION

Diameter of the piping:
DN25 up to DN1600 (even more for a special version)

Media :
Gas and liquid – specification is indicated for each type, other media should be consulted

Operating pressure:
PN16 up to PN100 (up to PN320 and more for a special version

Operating temperature:
-10ºC up to +50°C (-40 ºC up to +150°C for a special version)

Material (steel):
In accordance with DIN or EN standards

FASTRA, s.r.o., Libenice 30 - Skalka, 280 02 Kolín, tel.: +420 321 720 258, e-mail: info@fastra.cz, www.fastra.cz

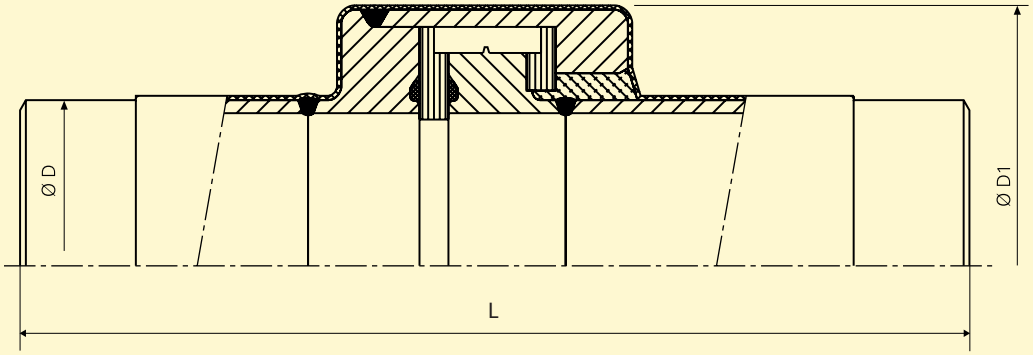
COMPONENTS FOR STEEL PIPES

5.3 Compact Insulation Joints

Type SHD

Operating medium: gas in accordance with ČSN EN 437
Operating temperature: -10°C up to +50°C
Safety factor: S=1,8
Symmetrical version:
Both ends are to be connected by welding
External anti-corrosion protection: shrinking sleeve

Internal anti-corrosion protection:
„Standard“ version - no surface finish (a black pipe)
„Permacor“ version - coated with Permacor PX1
Certification 3.1 in accordance with ČSN EN 10204



Dimension DN	(„inch“)	Ø D [mm]	L [mm] PN 16-100	Ø D1	
				PN 16, 25, 40	PN 70, 100
25	1	33,7	500	78	78
32	1¼	42,4	500	92	92
40	1½	48,3	500	98	98
50	2	60,3	700	110	110
65	2½	76,1	700	130	130
80	3	88,9	700	148	148
100	4	108,0	700	172	172
100	4	114,3	700	172	172
125	5	133,0	700	196	196
125	5	139,7	700	196	196
150	6	159,0	700	222	224
150	6	168,3	700	222	224
200	8	219,1	700	275	288
250	10	273,0	700	328	350
300	12	323,9	700	376	405
350	14	355,6	700	412	442
400	16	406,4	1000	468	508
450	18	457,0	1000	535	575
500	20	508,0	1000	595	630
600	24	610,0	1000	690	745
700	28	711,0	1000	810	865
800	32	813,0	1000	905	975
900	36	914,0	1000	1025	1115
1000	40	1016,0	1000	1130	1230

For catalogue numbers following the following page

Type SHD

Insulation joint SHD PN16		
Name - dimension	Catalogue No.	
	Standard	Permacor
Insulation joint SHD PN16 DN25/33,7 x 3,6	SHD02501600	SHD025016041
Insulation joint SHD PN16 DN32/42,4 x 3,6	SHD03201600	SHDA0000807
Insulation joint SHD PN16 DN40/48,3 x 3,6	SHD04001600	SHDA0000806
Insulation joint SHD PN16 DN50/60,3 x 3,6	SHD05001600	SHD05001604
Insulation joint SHD PN16 DN80/88,9 x 4,0	SHD08001600	SHD080016041
Insulation joint SHD PN16 DN100/108,0 x 4,0	SHD10001612	SHDA0000801
Insulation joint SHD PN16 DN100/114,3 x 4,0	SHD10001600	SHD100016041
Insulation joint SHD PN16 DN125/133,0 x 4,0	SHD12501610	SHDA0000805
Insulation joint SHD PN16 DN125/139,7 x 4,0	SHD12501600	SHD125016041
Insulation joint SHD PN16 DN150/159,0 x 4,5	SHD15001621	SHDA0000802
Insulation joint SHD PN16 DN150/168,3 x 4,5	SHD15001600	SHD150016041
Insulation joint SHD PN16 DN200/219,1 x 4,5	SHD20001600	SHD200016041
Insulation joint SHD PN16 DN250/273,0 x 6,3	SHD25001600	SHD250016041
Insulation joint SHD PN16 DN300/323,9 x 5,6	SHD30001600	SHD300016041
Insulation joint SHD PN16 DN400/406,4 x 6,3	SHD40001600	SHD400016041
Insulation joint SHD PN16 DN500/508,0 x 6,3	SHD50001600	SHDA0000803
Insulation joint SHD PN16 DN600/610,0 x 6,3	SHD60001600	SHDA0000804

Other dimensions should be consulted ☎

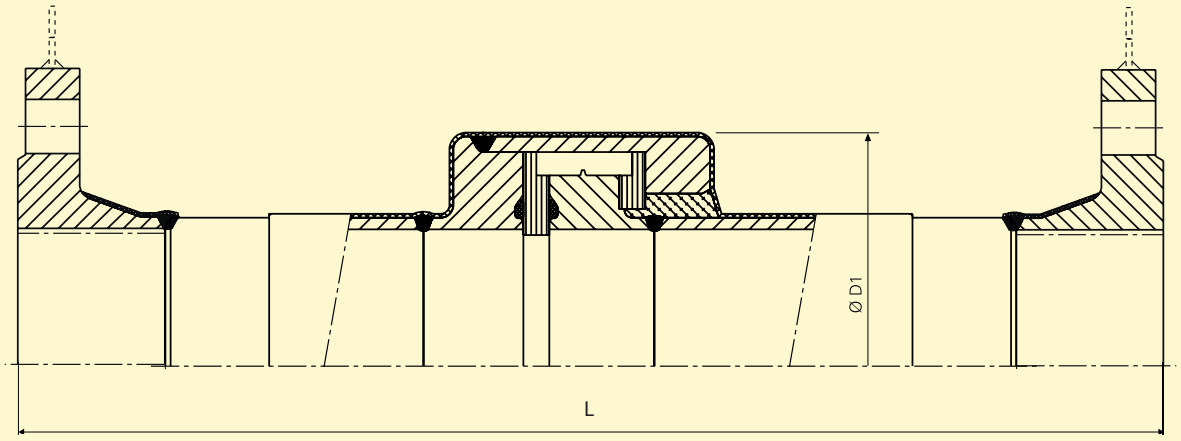
Insulation joint SHD PN40		
Name - dimension	Catalogue No.	
	Standard	Permacor
Insulation joint SHD PN40 DN25/33,7 x 3,6	SHD02504000	SHDA0000866
Insulation joint SHD PN40 DN32/42,4 x 3,6	SHDA0000867	SHDA0000870
Insulation joint SHD PN40 DN40/48,3 x 3,6	SHDA0000868	SHDA0000869
Insulation joint SHD PN40 DN50/60,3 x 4,0	SHD05004000	SHDA0000885
Insulation joint SHD PN40 DN80/88,9 x 4,0	SHD08004000	SHDA0000876
Insulation joint SHD PN40 DN100/108,0 x 4,0	SHDA0000871	SHDA0000872
Insulation joint SHD PN40 DN100/114,3 x 3,6	SHD10004000	SHDA0000877
Insulation joint SHD PN40 DN125/133,0 x 4,0	SHDA0000875	SHDA0000890
Insulation joint SHD PN40 DN125/139,7 x 4,0	SHD12504000	SHDA0000891
Insulation joint SHD PN40 DN150/159,0 x 4,5	SHDA0000873	SHDA0000874
Insulation joint SHD PN40 DN150/168,3 x 4,5	SHD15004000	SHDA0000878
Insulation joint SHD PN40 DN200/219,1 x 4,5	SHD20004000	SHDA0000879
Insulation joint SHD PN40 DN250/273,0 x 6,3	SHD25007000	SHDA0000881
Insulation joint SHD PN40 DN300/323,9 x 7,1	SHD30004000	SHD30004003
Insulation joint SHD PN40 DN400/406,4 x 8,0	SHD40004000	SHDA0000882
Insulation joint SHD PN40 DN500/508,0 x 8,0	SHD50004000	SHDA0000883
Insulation joint SHD PN40 DN600/610,0 x 7,1	SHD60004000	SHDA0000884

Other dimensions should be consulted ☎

Type SHD-F

Operating medium: gas in accordance with ČSN EN 437
Operating temperature: -10°C up to +50°C
Safety factor: S=1,8
Both connecting ends are provided with flanges in accordance with EN 1092 Type 11 in the appropriate pressure class

External anti-corrosion protection:
Interthane 1070 PU
Internal anti-corrosion protection:
no surface finish (a black pipe)
Certification 3.1 in accordance with ČSN EN 10204



Dimension DN	„inch"	Ø D1 [mm]		L [mm]					
		PN 16, 25, 40	PN 70, 100	PN 10	PN 16	PN 25	PN 40	PN 64	ANSI 600
25	1	78	78	200	200	220	220	260	260
32	1¼	92	92	200	200	220	220	290	290
40	1½	98	98	220	220	230	220	300	300
50	2	110	110	220	220	230	230	280	320
65	2½	130	130	220	220	230	240	290	
80	3	148	148	240	240	280	260	300	350
100	4	172	172	240	240	280	280	305	360
125	5	196	196	250	250	320	280	340	400
150	6	222	224	250	250	320	320	360	430
200	8	275	288	280	280	330	360	400	480
250	10	328	350	290	300		380	430	520
300	12	376	405	300	320	350	400	500	550
350	14	412	442	300	330	380	420		
400	16	468	508	300	330	420			

Insulation joint SHD-F PN 16	
Name - dimension	Catalogue No.
Insulation joint SHD-F PN16 DN25	SHF0250160010
Insulation joint SHD-F PN16 DN50	SHF0500160010
Insulation joint SHD-F PN16 DN65	SHF0650160010
Insulation joint SHD-F PN16 DN80	SHF0800160010
Insulation joint SHD-F PN16 DN100	SHF1000160010
Insulation joint SHD-F PN16 DN125	SHF1250160010
Insulation joint SHD-F PN16 DN150	SHF1500160010
Insulation joint SHD-F PN16 DN200	SHF2000160010
Insulation joint SHD-F PN16 DN250	SHF2500160010
Insulation joint SHD-F PN16 DN300	SHF3000160010

Insulation joint SHD-F PN 40	
Name - dimension	Catalogue No.
Insulation joint SHD-F PN40 DN25	SHF0250400010
Insulation joint SHD-F PN40 DN50	SHF0500400010
Insulation joint SHD-F PN40 DN65	SHF0650400010
Insulation joint SHD-F PN40 DN80	SHF0800400010
Insulation joint SHD-F PN40 DN100	SHF1000400010
Insulation joint SHD-F PN40 DN125	SHF1250400010
Insulation joint SHD-F PN40 DN150	SHF1500400010
Insulation joint SHD-F PN40 DN200	SHF2000400010
Insulation joint SHD-F PN40 DN250	SHF2500400010
Insulation joint SHD-F PN40 DN300	SHF3000400010

Other dimensions should be consulted ☎

Type SHD-FS

Certification 3.1 in accordance with ČSN EN 10204

Operating medium: gas in accordance with ČSN EN 437

Safety factor: S=1,8

Operating temperature: -10°C up to +50°C

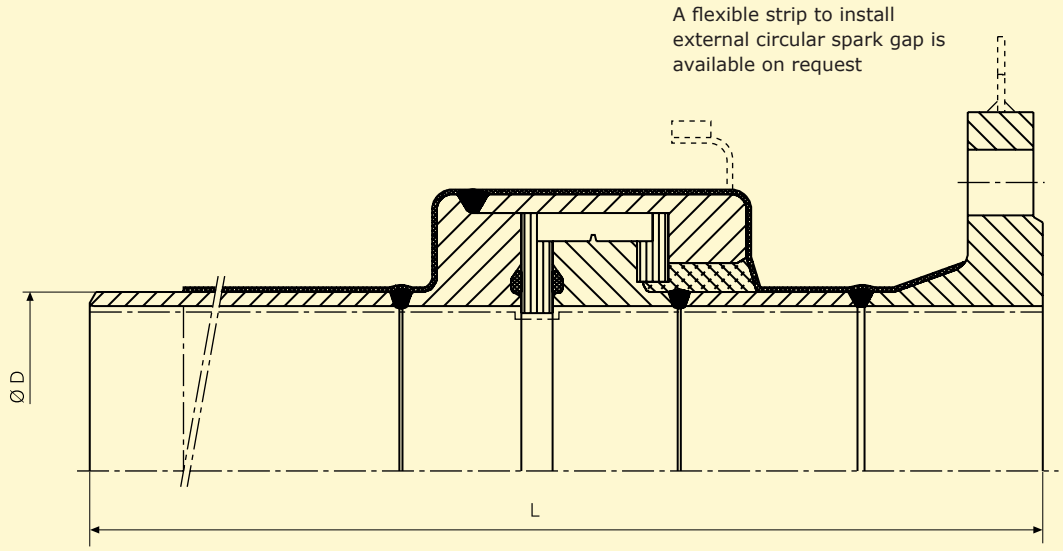
One connecting end is provided with a flange in accordance with EN 1092 Type 11 in the appropriate pressure class

The other connecting end:
Up to PN16 – for connection made by welding /a pipe in accordance with EN 10216

Over PN25 - for connection made by welding /a pipe in accordance with EN 10208

External anti-corrosion protection:
Interthane 1070 PU

Internal anti-corrosion protection:
no surface finish (a black pipe)



Insulation joint SHD-FS PN16			
Name - dimension	Ø D [mm]	L [mm]	Catalogue No.
Insulation joint SHD-FS PN16 DN25	33,7 x 3,6	335	SHFS0250160010
Insulation joint SHD-FS PN16 DN50	60,3 x 3,6	450	SHFS0500160010
Insulation joint SHD-FS PN16 DN65	76,1 x 4,0	450	SHFS0650160010
Insulation joint SHD-FS PN16 DN80	88,9 x 4,0	455	SHFS0800160010
Insulation joint SHD-FS PN16 DN100	114,3 x 4,0	455	SHFS1000160010
Insulation joint SHD-FS PN16 DN125	139,7 x 4,0	460	SHFS1250160010
Insulation joint SHD-FS PN16 DN150	168,3 x 4,5	460	SHFS1500160010
Insulation joint SHD-FS PN16 DN200	219,1 x 4,5	470	SHFS2000160010
Insulation joint SHD-FS PN16 DN250	273,0 x 6,3	485	SHFS2500160010
Insulation joint SHD-FS PN16 DN300	323,9 x 5,6	485	SHFS3000160010

Insulation joint SHD-FS PN40			
Name - dimension	Ø D [mm]	L [mm]	Catalogue No.
Insulation joint SHD-FS PN40 DN25	33,7 x 3,6	335	SHFS0250400010
Insulation joint SHD-FS PN40 DN50	60,3 x 3,6	450	SHFS0500400010
Insulation joint SHD-FS PN40 DN65	76,1 x 4,0	460	SHFS0650400010
Insulation joint SHD-FS PN40 DN80	88,9 x 4,0	460	SHFS0800400010
Insulation joint SHD-FS PN40 DN100	114,3 x 3,6	465	SHFS1000400010
Insulation joint SHD-FS PN40 DN125	139,7 x 4,0	475	SHFS1250400010
Insulation joint SHD-FS PN40 DN150	168,3 x 4,5	475	SHFS1500400010
Insulation joint SHD-FS PN40 DN200	219,1 x 4,5	495	SHFS2000400010
Insulation joint SHD-FS PN40 DN250	273,0 x 6,3	500	SHFS2500400010
Insulation joint SHD-FS PN40 DN300	323,9 x 7,1	530	SHFS3000400010

Other dimensions should be consulted ☎

Compact Insulation Joints SHD Monobloc for Water

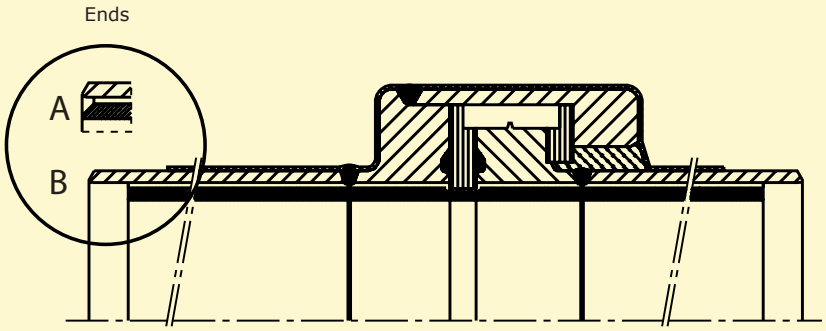
Operating medium: water, fresh water
Operating temperature: +1°C up to +50°C
Asymmetrical version
Connecting ends:
Type SHD - both-sided for connection made welding
Type SHDF - both ends provided with flanges in accordance with EN 1092 Type 11 in the appropriate pressure class
Type SHDFS - one connecting end provided with a flange in accordance with EN 1092 Type 11 in the appropriate pressure class, the other end to be connected by welding

External anti-corrosion protection:
PUR 32-55 1,5mm
Internal anti-corrosion protection: GK3-W ZM
(Vulcanized rubber lining made of KTW and W270)

This version guarantees permanent and 100% insulation between the medium and construction parts. The lining is made along the whole construction length with additional lining made of cement mortar.

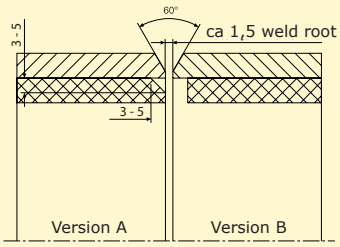
Constructional length has been designed for specific conductivity of water not exceeding 600µS/cm.

TYPE SHD



Asymmetrical, longer side to be mounted towards cathodic protection

Detail of pipe ends to be welded



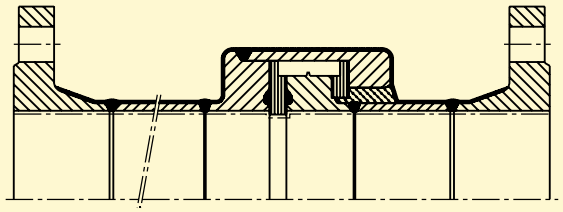
Insulation joint SHD for water PN16

Name - dimension	Ø D [mm]	L [mm]	Catalogue No.
Insulation joint SHD for water PN16 DN80	88,9 x 4,0	1000	SHD080016117
Insulation joint SHD for water PN16 DN100	114,3 x 4,0	1300	SHD100016117
Insulation joint SHD for water PN16 DN150	168,3 x 4,5	1500	SHD150016117
Insulation joint SHD for water PN16 DN200	219,1 x 6,3	1600	SHD200016117
Insulation joint SHD for water PN16 DN250	273,0 x 6,3	1800	SHD250016117
Insulation joint SHD for water PN16 DN300	323,9 x 7,1	1900	SHD300016071
Insulation joint SHD for water PN16 DN400	406,4 x 6,3	2100	SHD400016117
Insulation joint SHD for water PN16 DN500	508,0 x 6,3	2200	SHD500016117
Insulation joint SHD for water PN16 DN600	610,0 x 6,3	2500	SHD600016117
Insulation joint SHD for water PN16 DN700	711,0 x 7,1	2750	SHD700016117
Insulation joint SHD for water PN16 DN800	813,0 x 8,0	2850	SHD800016117
Insulation joint SHD for water PN16 DN900	914,0 x 10,0	3050	SHD900016117
Insulation joint SHD for water PN16 DN1000	1016,0 x 10,0	3200	SHD960016117
Insulation joint SHD for water PN16 DN1200	1220,0 x 12,5	3400	SHD96501663

Other dimensions should be consulted ☎

Compact Insulation Joints SHD Monobloc for Water

TYPE SHD-F



Asymmetrical, longer side to be mounted towards cathodic protection

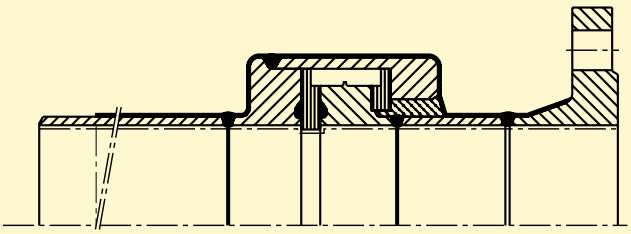
Insulation joint SHD-F for water PN10		
Name - dimension	L [mm]	Catalogue No.
Insulation joint SHD-F for water PN10 DN200	1300	SHDA0000833
Insulation joint SHD-F for water PN10 DN250	1500	SHDA0000834
Insulation joint SHD-F for water PN10 DN300	1600	SHF300010117
Insulation joint SHD-F for water PN10 DN400	1800	SHDA0000835
Insulation joint SHD-F for water PN10 DN500	1900	SHF500010803
Insulation joint SHD-F for water PN10 DN600	2200	SHDA0000836
Insulation joint SHD-F for water PN10 DN700	2450	SHDA0000837
Insulation joint SHD-F for water PN10 DN800	2550	SHDA0000838
Insulation joint SHD-F for water PN10 DN900	2750	SHDA0000839
Insulation joint SHD-F for water PN10 DN1000	2900	SHDA0000840
Insulation joint SHD-F for water PN10 DN1200	3100	SHDA0000841

Insulation joint SHD-F for water - performance PN16		
Name - dimension	L [mm]	Catalogue No.
Insulation joint SHD-F for water PN16 DN80	700	SHF080016117
Insulation joint SHD-F for water PN16 DN100	1000	SHF100016117
Insulation joint SHD-F for water PN16 DN150	1200	SHF150016117
Insulation joint SHD-F for water PN16 DN200	1300	SHF20001663
Insulation joint SHD-F for water PN16 DN250	1500	SHDA0000824
Insulation joint SHD-F for water PN16 DN300	1600	SHDA0000825
Insulation joint SHD-F for water PN16 DN400	1800	SHDA0000826
Insulation joint SHD-F for water PN16 DN500	1900	SHDA0000815
Insulation joint SHD-F for water PN16 DN600	2200	SHDA0000827
Insulation joint SHD-F for water PN16 DN700	2450	SHDA0000828
Insulation joint SHD-F for water PN16 DN800	2550	SHDA0000829
Insulation joint SHD-F for water PN16 DN900	2750	SHDA0000830
Insulation joint SHD-F for water PN16 DN1000	2900	SHDA0000831
Insulation joint SHD-F for water PN16 DN1200	3100	SHDA0000832

Other dimensions should be consulted ☎

Compact Insulation Joints SHD Monobloc for Water

TYPESHD-FS



Asymmetrical, longer side to be mounted towards cathodic protection

Insulation joint SHD-FS for water PN10			
Name - dimension	Ø D [mm]	L [mm]	Catalogue No.
Insulation joint SHD-FS for water PN10 DN200	219,1 x 6,3	1450	SHDA0000859
Insulation joint SHD-FS for water PN10 DN250	273,0 x 6,3	1650	SHDA0000860
Insulation joint SHD-FS for water PN10 DN300	323,9 x 7,1	1750	SHDA0000861
Insulation joint SHD-FS for water PN10 DN400	406,4 x 6,3	1950	SHDA0000862
Insulation joint SHD-FS for water PN10 DN500	508,0 x 6,3	2050	SHFS500010801
Insulation joint SHD-FS for water PN10 DN600	610,0 x 6,3	2350	SHFS600010117
Insulation joint SHD-FS for water PN10 DN700	711,0 x 7,1	2600	SHFS700010117
Insulation joint SHD-FS for water PN10 DN800	813,0 x 8,0	2700	SHFS800010117
Insulation joint SHD-FS for water PN10 DN900	914,0 x 10,0	2900	SHDA0000863
Insulation joint SHD-FS for water PN10 DN1000	1016,0 x 10,0	3050	SHDA0000864
Insulation joint SHD-FS for water PN10 DN1200	1220,0 x 12,5	3250	SHDA0000865

Insulation joint SHD-FS pro vodu PN16			
Name - dimension	Ø D [mm]	L [mm]	Catalogue No.
Insulation joint SHD-FS for water PN16 DN80	88,9 x 4,0	850	SHDA0000846
Insulation joint SHD-FS for water PN16 DN100	114,3 x 4,0	1150	SHDA0000847
Insulation joint SHD-FS for water PN16 DN150	168,3 x 4,5	1350	SHDA0000848
Insulation joint SHD-FS for water PN16 DN200	219,1 x 6,3	1450	SHDA0000849
Insulation joint SHD-FS for water PN16 DN250	273,0 x 6,3	1650	SHDA0000850
Insulation joint SHD-FS for water PN16 DN300	323,9 x 7,1	1750	SHFS300016802
Insulation joint SHD-FS for water PN16 DN400	406,4 x 6,3	1950	SHDA0000851
Insulation joint SHD-FS for water PN16 DN500	508,0 x 6,3	2050	SHDA0000852
Insulation joint SHD-FS for water PN16 DN600	610,0 x 6,3	2350	SHDA0000853
Insulation joint SHD-FS for water PN16 DN700	711,0 x 7,1	2600	SHDA0000854
Insulation joint SHD-FS for water PN16 DN800	813,0 x 8,0	2700	SHDA0000855
Insulation joint SHD-FS for water PN16 DN900	914,0 x 10,0	2900	SHDA0000856
Insulation joint SHD-FS for water PN16 DN1000	1016,0 x 10,0	3050	SHDA0000857
Insulation joint SHD-FS for water PN16 DN1200	1220,0 x 12,5	3250	SHDA0000858

Other dimensions should be consulted ☎

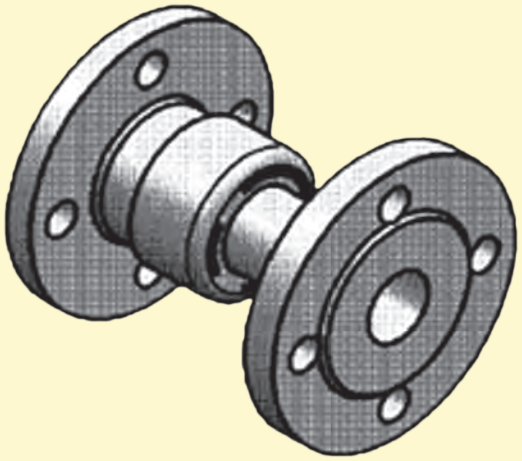
NOTES

Insulation jointe for internal installations

For house installations
Operating medium: Natural gas
Operating pressure : max. PS5

Execution and testing DIN3389 (08/84), DVGW
Thermal resistence: 650°C
Outer coating: Varnish made of artificial resin, yellow RAL1021

Type TSMGGT (external / internal thread)		
Dimension	Catalogue No.	Construction length
DN 25	TS11345000	78mm
DN 32	TS12345000	85mm
DN 40	TS13345000	85mm
DN 50	TS14345000	92mm



Type TSFGT (both sides flange to DIN2633)		
Dimension	Catalogue No.	Construction length
DN 25	TS11115000	130mm
DN 32	Na dotaz	-
DN 40	TS13115000	140mm
DN 50	TS14115000	150mm

NOTES

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COMPONENTS
FOR STEEL PIPES

FLANGE INSULATION JOINTS

Insulation joints are piping parts that are used to break conductivity of steel pipelines in the points where pipes are separated by insulation if the joint needs to detachable.

DESCRIPTION AND USAGE

Diameter of the piping:
DN25 up to DN1200 (or larger)

Media: Gas and liquid – specification is indicated for each type, other media should be consulted z

Operating pressure: PN6 up to PN100

Operating temperature: -10°C up to +50°C

Material (steel):
In accordance with DIN or EN standards

Advantages of the structure:
- maintenance-free – no tightening of screws
- safety – cellular sealing placed in the groove preventing its blow-off
- reliability – long-term elastic sealing
- Technology – no flange installation

Design:
- connecting ends ready to be welded
- as a standard with no internal lining or external anti-corrosion protection
- if requested, with pipes welded on both sides, having the length as requested by the customer
- regarding the structure of the sealing there is no need to retighten the screws after they are tighten initially

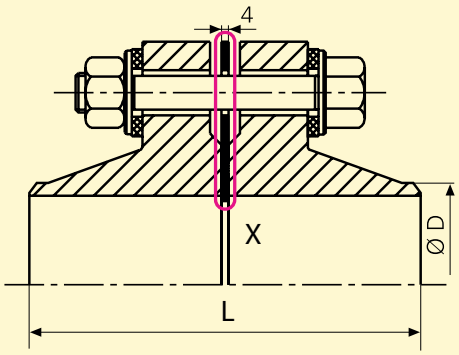
Production and testing:
- as specified by the customer
- in accordance with SCHUCK standards, or in accordance with DIN 3389 (PN4 up to PN16), DIN 1988 (from PN16)
- no pressure test, or pressure test as requested by the customer
- Electric test 2000V
- Insulation and sealing materials conforming to mechanic, electric and thermal requirements of the medium

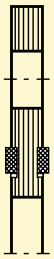
COMPONENTS FOR STEEL PIPES

5.4 Flange Insulation Joints

Type SIF-G

Operating medium: gas in accordance with ČSN EN 437
Operating temperature: -10°C up to +50°C
Flanges in accordance with EN 1092-1 PN16
Insulation sealing: DVGW-approved
Insulation disc: fibre glass
Insulation pipes: Mylar
Connection screws: strength of 5.6





Detail X

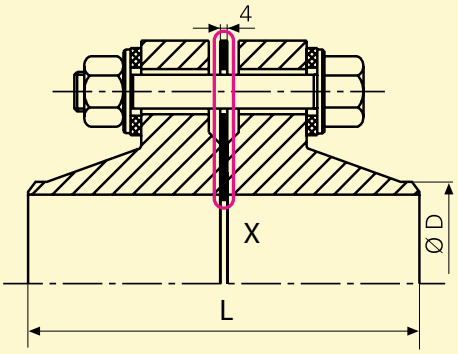
Flange insulation joint SIF-G PN16		
Name - dimension	L [mm]	Catalogue No.
Flange insulation joint SIF-G PN16 DN25	80	SIFG002501
Flange insulation joint SIF-G PN16 DN32	84	SIFG003201
Flange insulation joint SIF-G PN16 DN40	88	SIFG004001
Flange insulation joint SIF-G PN16 DN50	94	SIFG005001
Flange insulation joint SIF-G PN16 DN65	94	SIFG006501
Flange insulation joint SIF-G PN16 DN80	104	SIFG008001
Flange insulation joint SIF-G PN16 DN100	108	SIFG010001
Flange insulation joint SIF-G PN16 DN125	114	SIFG012501
Flange insulation joint SIF-G PN16 DN150	114	SIFG015001
Flange insulation joint SIF-G PN16 DN200	128	SIFG020001
Flange insulation joint SIF-G PN16 DN250	144	SIFG025001
Flange insulation joint SIF-G PN16 DN300	160	SIFG030001
Flange insulation joint SIF-G PN16 DN350	168	SIFG035001
Flange insulation joint SIF-G PN16 DN400	174	SIFG040001
Flange insulation joint SIF-G PN16 DN500	184	SIFG050001
Flange insulation joint SIF-G PN16 DN600	194	SIFG060001
Flange insulation joint SIF-G PN16 DN700	204	SIFG070001
Flange insulation joint SIF-G PN16 DN800	214	SIFG080001
Flange insulation joint SIF-G PN16 DN900	224	SIFG090001
Flange insulation joint SIF-G PN16 DN1000	244	SIFG100001

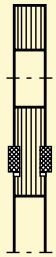
Other dimensions should be consulted ☎

Type SIF-W for water

Operating medium: water
Operating temperature: +1°C up to +50°C
Flanges in accordance with EN 1092-1 PN16 or PN10

Insulation sealing: DVGW-approved
Insulation disc: fibre glass
Insulation pipes: Mylar
Connection screws: strength of 8.8





Detail X

Flange insulation joint SIF-W PN10		
dimension	L [mm]	Catalogue No.
DN200	128	SIFW020000
DN250	140	SIFW025000
DN300	140	SIFW030000
DN350	140	SIFW035000
DN400	148	SIFW040000
DN500	154	SIFW050000
DN600	194	SIFW060000
DN700	164	SIFW070000
DN800	184	SIFW080000
DN900	194	SIFW090000
DN1000	194	SIFW100000

Flange insulation joint SIF-W PN16		
dimension	L [mm]	Catalogue No.
DN25	80	SIFW002501
DN32	84	SIFW003201
DN40	88	SIFW004001
DN50	94	SIFW005001
DN65	94	SIFW006501
DN80	104	SIFW008001
DN100	108	SIFW010001
DN125	114	SIFW012501
DN150	114	SIFW015001
DN200	128	SIFW020001
DN250	144	SIFW025001
DN300	160	SIFW030001
DN350	168	SIFW035001
DN400	174	SIFW040001
DN500	184	SIFW050001
DN600	194	SIFW060001
DN700	204	SIFW070001
DN800	214	SIFW080001
DN900	224	SIFW090001
DN1000	244	SIFW100001

Other dimensions should be consulted ☎

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COMPONENTS FOR STEEL PIPES

BUSHING SLEEVES

DESCRIPTION AND USAGE

Bushing sleeves are used as connection components to connect pipelines that conduct gaseous media.

Structure of each type is different.

Type SMU – self-sealing:
A seal ring(s) placed in the offset(s) of a bushing sleeve is used to seal the joint between the pipe and the sleeve inserted on the pipe. Sealing will be effective for even negligible overpressure in the pipeline. After proper installation, the sleeve shall be welded to the pipe.

Type SU:
Seal rings placed in special recessions of the bushing sleeve are used to seal the joint between the pipe and the sleeve inserted on the pipe. Sealing will be effective after Allen head screws located in the front sides of the sleeve have been tightened.

Description of each type and design is indicated in the following text hereof.

APPLICATION

Operating medium: gas in accordance with EN 437

Piping of pressure class:

type SMU: PN16 up to PN100

type SU: PN16 up to PN40

Piping with nominal diameter of:

type SMU: DN25 up to DN400

type SU: DN500 up to DN800

Operating temperature: -10ºC up to +50ºC

Material:

steel
in accordance with DIN EN 10305/1 and DIN EN 10305/2, EN 10216/2, DIN 1629, DIN 1626 and DIN 2391/C, or equivalent

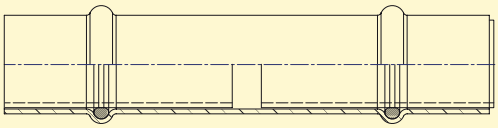
O-ring
EDPM rubber DIN 4060

For underground as well as overhead application

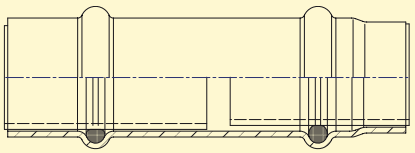
COMPONENTS FOR STEEL PIPES

5.5 Bushing Sleeves

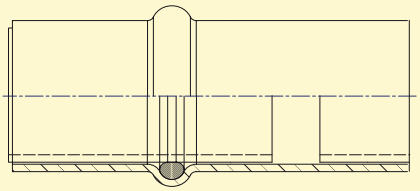
Types



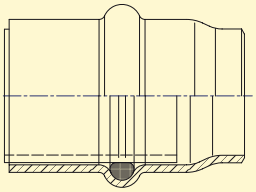
SMU



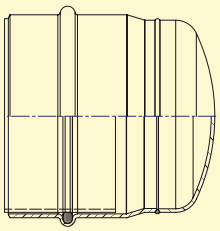
SMU-R



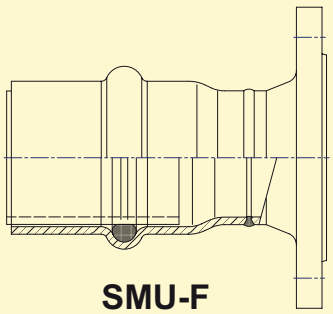
SMU-1



SMU-S



SMU-K

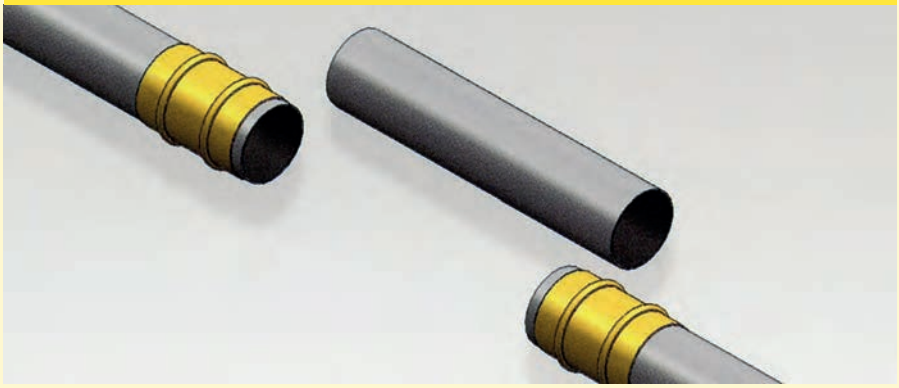


SMU-F

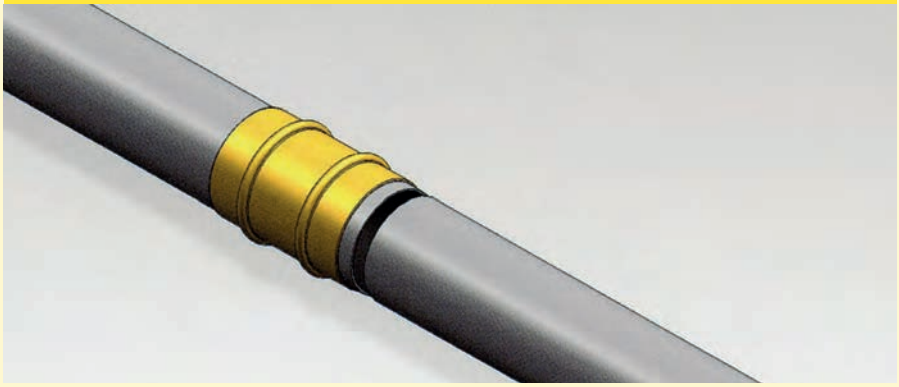
Type	Characteristics	Description
SMU	Symmetric, two seal rings	Both-sided for sleeving, for identical connecting dimensions of the pipes
SMU-R	One-side reduced, two seal rings	Both-sided for sleeving, one-side reduced (different connecting dimensions of the pipes)
SMU-1	Half-sleeve, one seal ring	One-sided for sleeving, one-sided to be welded with a fillet weld
SMU-S	Half-sleeve, one seal ring	One-sided for sleeving, one-sided to be welded with a V-weld
SMU-K	Half-sleeve, one seal ring	One-sided for sleeving, one-sided with an on-welded domed end
SMU-F	Half-sleeve, one seal ring	One-sided for sleeving, one-sided connection flange

Examples of Use

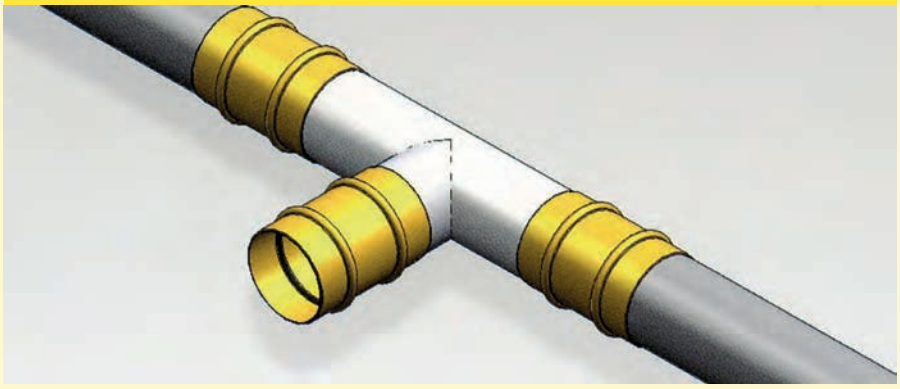
REPAIR



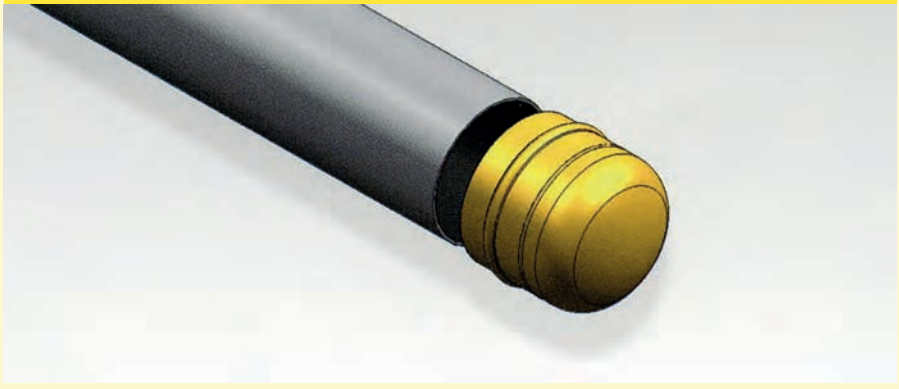
CONNECTION AND REDUCTION



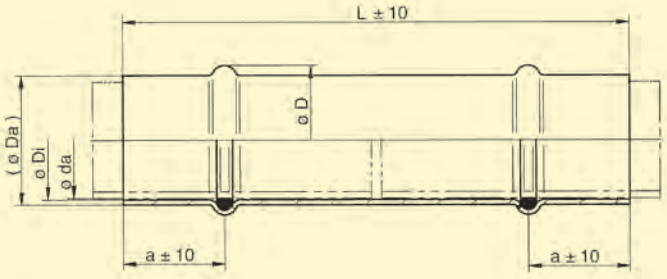
INSERTION OF T-PIECE



SHUT OFF - CLOSURE



Type SMU



Sleeve SMU PN16 (DN25 - DN400)

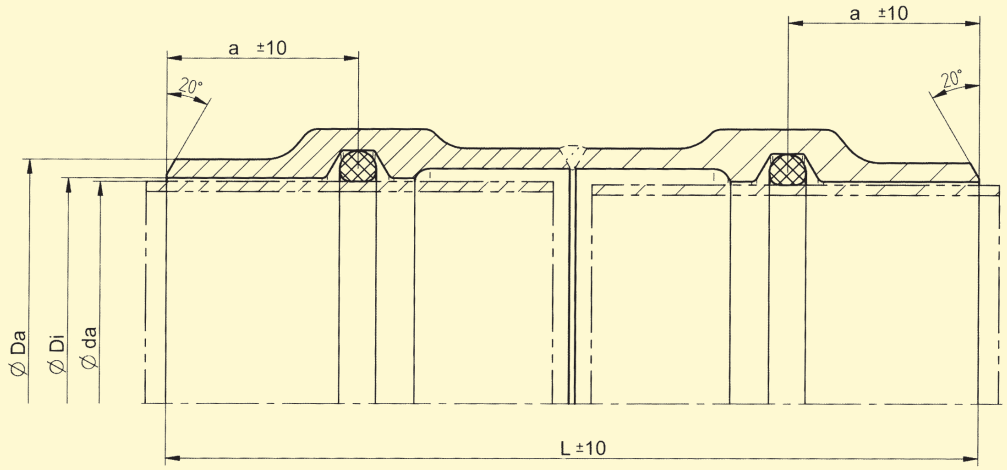
Name - dimension	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
Sleeve SMU PN16 DN25/33,7	33,7	60,5	43	36	105	420	1,6	SMU03342001
Sleeve SMU PN16 DN32/42,4	42,4	78	51,6	44,6	105	420	2	SMU04242001
Sleeve SMU PN16 DN40/48,3	48,3	78	57	50	105	420	2	SMU04842001
Sleeve SMU PN16 DN50/57,0	57	90	66	59	105	420	2,7	SMU05742001
Sleeve SMU PN16 DN50/60,3	60,3	90	70	63	105	420	2,7	SMU06042001
Sleeve SMU PN16 DN65/70,0	70	103,5	82	72	105	420	4,8	SMU07042001
Sleeve SMU PN16 DN65/76,1	76,1	103,5	88,9	78,9	105	420	4,8	SMU07642001
Sleeve SMU PN16 DN80/88,9	88,9	120	101,6	91,6	100	500	6,4	SMU08850001
Sleeve SMU PN16 DN100/108,0	108	138,5	121	111	100	500	7,5	SMU10850001
Sleeve SMU PN16 DN100/114,3	114,3	145	127	117	100	500	8	SMU11450001
Sleeve SMU PN16 DN125/133,0	133	169	145	136	100	500	8,5	SMU13350001
Sleeve SMU PN16 DN125/139,7	139,7	169	152,4	143,4	100	500	8,5	SMU13950001
Sleeve SMU PN16 DN150/159,0	159	198	172,5	162,5	100	500	10,6	SMU15950001
Sleeve SMU PN16 DN150/168,3	168,3	207	182,5	172,5	100	500	11,4	SMU16850001
Sleeve SMU PN16 DN200/211,0	211	258	225,5	214,5	100	500	16	SMU21150000
Sleeve SMU PN16 DN200/214,0	214	258	228,5	217,5	100	500	16	SMU21450001
Sleeve SMU PN16 DN200/216,0	216	258	230,5	219,5	100	500	16	SMU21650001
Sleeve SMU PN16 DN200/219,1	219,1	258	233,5	222,5	100	500	16	SMU21950001
Sleeve SMU PN16 DN250/273,0	273	316	289,5	278,5	100	500	19,5	SMU27350001
Sleeve SMU PN16 DN300/318,0	318	369	336	323	100	500	27	SMU31850001
Sleeve SMU PN16 DN300/323,9	323,9	369	342,1	329,1	100	500	27	SMU32350001
Sleeve SMU PN16 DN400/406,4	406,4	451	423,6	411	100	500	33	SMU40650001
Sleeve SMU PN16 DN400/419,1	419,1	470	443	424	100	400	60	SMU41940001
Sleeve SMU PN16 DN400/426,0	426	475	450	431	100	400	65	SMU42640001

Sleeve SMU PN40 / PN25 (DN80 - DN400)

Name - dimension	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
Sleeve SMU PN40 DN80/88,9	88,9	120	101,6	91,6	100	500	6,4	SMU08850015
Sleeve SMU PN40 DN100/108,0	114,3	145	127	117	100	500	8	SMU10850015
Sleeve SMU PN40 DN100/114,3	114,3	145	127	117	100	500	8	SMU11450015
Sleeve SMU PN40 DN125/133,0	139,7	169	152,4	143,4	100	500	8,5	SMU13350015
Sleeve SMU PN40 DN125/139,7	139,7	169	152,4	143,4	100	500	8,5	SMU13950015
Sleeve SMU PN40 DN150/159,0	159	198	172,5	162,5	100	500	10,6	SMU15950015
Sleeve SMU PN40 DN150/168,3	168,3	207	182,5	172	100	500	11,4	SMU16850015
Sleeve SMU PN40 DN200/219,1	219,1	258	233,5	222,5	100	500	16	SMU21950015
Sleeve SMU PN25 DN250/273,0	273	316	289,5	278,5	100	500	19,5	SMU27350010
Sleeve SMU PN25 DN300/323,9	323,9	369	342,1	329	100	500	27	SMU32350010
Sleeve SMU PN25 DN400/406,4	406,5	451	423,6	411	100	500	33	SMU40650011

Other dimensions should be consulted ☎

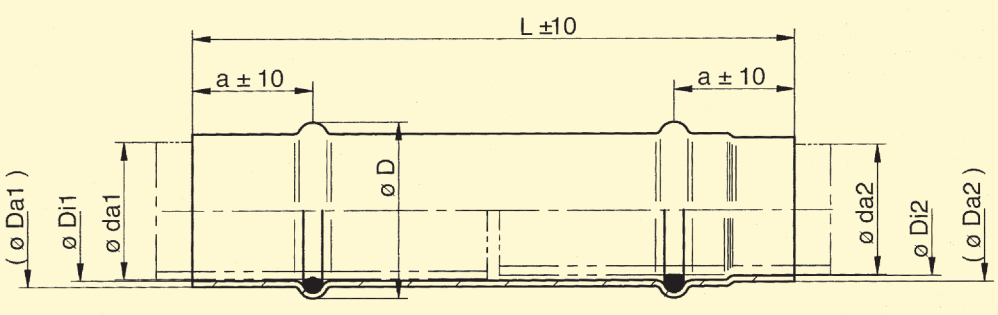
Type SMU



Sleeve SMU PN100								(DN80 - DN300)
Name - dimension	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
Sleeve SMU PN100 DN80/88,9	88,9	114,0	103,0	92,0	95	300	10,00	SMU08830050
Sleeve SMU PN100 DN100/108,0	108,0	134,0	124,0	111,0	95	300	11,00	SMU10830050
Sleeve SMU PN100 DN100/114,3	114,3	137,0	128,0	117,0	95	300	12,00	SMU11430050
Sleeve SMU PN100 DN125/133,0	133,0	154,0	145,0	136,0	95	300	14,00	SMU13310001
Sleeve SMU PN100 DN125/139,7	139,7	161,0	152,0	143,4	95	300	15,00	SMU13910001
Sleeve SMU PN100 DN150/159,0	159,0	187,4	178,0	162,5	95	300	18,00	SMU15930050
Sleeve SMU PN100 DN150/168,3	168,3	202,0	186,0	172,0	95	300	20,00	SMU16830060
Sleeve SMU PN100 DN200/219,1	219,1	250,0	241,0	222,5	95	400	32,00	SMU21940060
Sleeve SMU PN100 DN250/273,0	273,0	306,0	302,0	278,0	100	400	52,00	SMU27340001
Sleeve SMU PN100 DN300/323,9	323,9	357,5	354,0	329,0	100	400	60,00	SMU32340060

Other dimensions should be consulted ☎

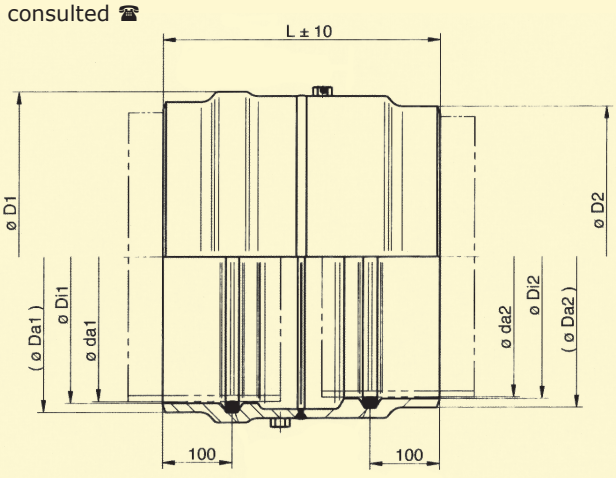
Type SMU-R



Reduced sleeve SMU-R PN16 (DN40 - DN300)

Dimension	ø da 1 [mm]	ø D [mm]	ø Da 1 [mm]	ø Di 1 [mm]	ø da 2 [mm]	ø Da 2 [mm]	ø Di 2 [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN40/48,3 x 44,5	48,3	78,0	57,0	50,0	44,5	53,5	46,5	105	420	2,00	SMUR048044420
DN50/60,3 x 57,0	60,3	90,0	70,0	63,0	57,0	66,0	59,0	105	420	2,70	SMUR060057420
DN80/88,9 x 76,1	88,9	103,5	101,6	91,6	76,1	88,9	78,9	100	460	5,40	SMUR088076500
DN80/88,9 x 80,0	88,9	120,0	101,6	91,6	80,0	92,5	82,5	100	500	6,40	SMUR088080500
DN80/88,9 x 82,5	88,9	120,0	101,6	91,6	82,5	95,2	85,2	100	500	6,40	SMUR088082500
DN80/98,0 x 88,9	98,0	120,0	111,0	101,0	88,9	101,6	91,6	100	500	6,40	SMUR098088500
DN100/114,3 x 108,0	114,3	145,0	127,0	117,0	108,0	121,0	111,0	100	500	8,00	SMUR114108500
DN125/133,0 x 114,3	133,0	169,0	145,0	136,0	114,3	127,0	117,0	100	500	8,30	SMUR133114500
DN125/139,7 x 133,0	139,7	169,0	152,4	143,4	133,0	145,0	136,0	100	500	8,50	SMUR139133500
DN150/168,3 x 133,0	168,3	207,0	182,5	172,5	133,0	145,0	136,0	100	500	10,00	SMUR168133500
DN150/168,3 x 159,0	168,3	207,0	182,5	172,5	159,0	172,5	162,5	100	500	16,00	SMUR168159500
DN200/219,1 x 209,0	219,1	258,0	233,5	222,5	209,0	223,5	212,5	100	500	16,00	SMUR219209500
DN200/219,1 x 211,0	219,1	258,0	233,5	222,5	211,0	225,5	214,5	100	500	16,00	SMUR219211500
DN200/219,1 x 214,0	219,1	258,0	233,5	222,5	214,0	228,5	217,5	100	500	16,00	SMUR219214500
DN200/219,1 x 216,0	219,1	258,0	233,5	222,5	216,0	230,5	219,5	100	500	16,00	SMUR219216500
DN250/273,0 x 263,0	273,0	316,0	289,5	278,5	263,0	279,0	268,0	100	500	19,50	SMUR273263500
DN250/273,0 x 267,0	273,0	316,0	289,5	278,5	267,0	283,0	272,0	100	500	19,50	SMUR273267500
DN300/323,9 x 318,0	323,9	369,0	342,1	329,1	318,0	336,0	323,0	100	500	27,00	SMUR323318500

Other dimensions should be consulted ☎

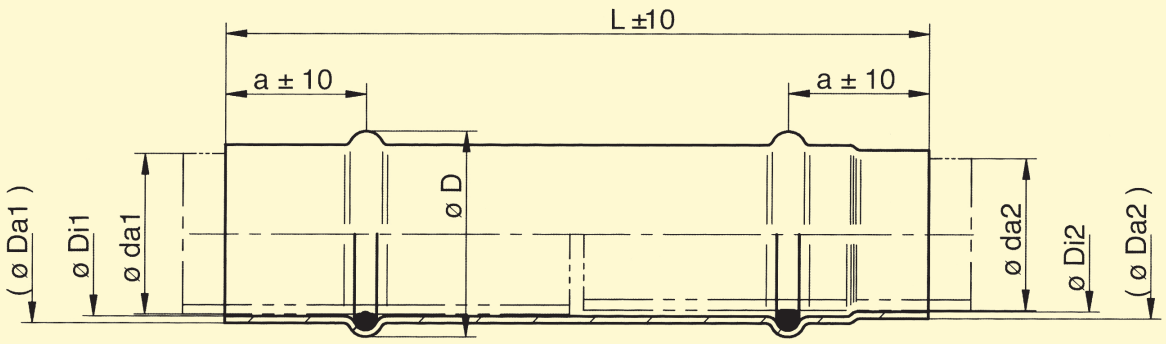


Reduced sleeve SMU-R PN16 (DN400)

Dimension	ø da 1 [mm]	ø Di 1 [mm]	ø Da 1 [mm]	ø D 1 [mm]	ø da 2 [mm]	ø Di 2 [mm]	ø Da 2 [mm]	ø D 2 [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN400/419,0 x 406,4	419,0	424,0	443,0	470,0	406,4	411,0	430,0	457,0	400	60,00	SMUR406419400
DN400/426,0 x 406,4	426,0	431,0	450,0	475,0	406,4	411,0	430,0	457,0	400	65,00	SMUR406426400

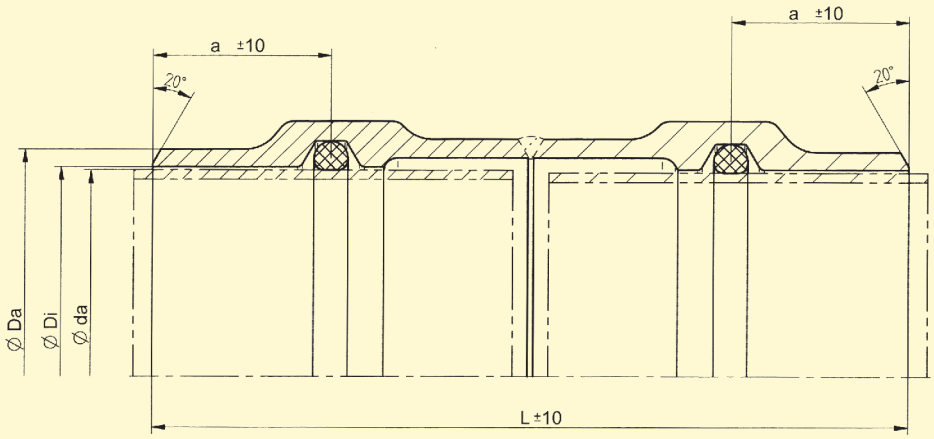
Other dimensions should be consulted ☎

Type SMU-R



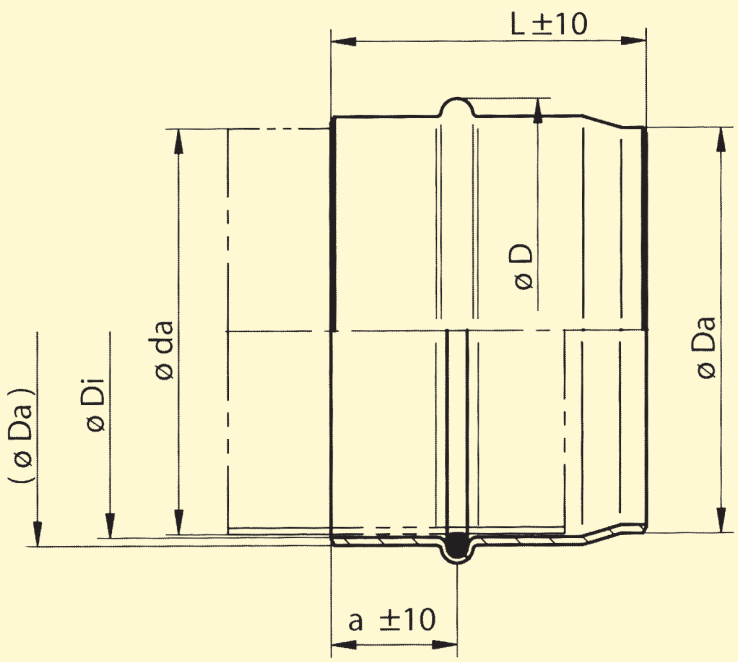
Reduced sleeve SMU-R PN40											(DN80 - DN200)
Dimension	ø da 1 [mm]	ø Da 1 [mm]	ø Di 1 [mm]	ø da 2 [mm]	ø Da 2 [mm]	ø Di 2 [mm]	ø D [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN80/88,9 x 80,0	88,9	101,6	91,6	80,0	92,5	82,5	120,0	100	500	6,40	SMUR088080510
DN100/114,3 x 108,0	114,3	127,0	117,0	108,0	121,0	111,0	145,0	100	500	8,00	SMUR114108510
DN100/139,7 x 133,0	139,7	153,4	143,4	133,0	146,0	136,0	174,0	100	500	11,00	SMUR139108510
DN150/168,3 x 159,0	168,3	182,5	172,5	159,0	172,5	162,5	207,0	100	500	16,00	SMUR168159510
DN200/219,1 x 209,0	219,1	233,5	222,5	209,0	223,5	212,5	258,0	100	500	16,00	SMUR219209510
DN200/219,1 x 211,0	219,1	233,5	222,5	211,0	225,5	214,5	258,0	100	500	16,00	SMUR219211510
DN200/219,1 x 216,0	219,1	233,5	222,5	216,0	230,5	219,5	258,0	100	500	16,00	SMUR219216510

Other dimensions should be consulted ☎



Reduced sleeve SMU-R PN100										(DN80 - DN200)
Dimension	ø da 1 [mm]	ø Da 1 [mm]	ø Di 1 [mm]	ø da 2 [mm]	ø Da 2 [mm]	ø Di 2 [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN80/88,9 x 80,0	88,9	103,0	92,0	80,0	94,0	83,0	95	300	10,00	SMUR088080350
DN100/114,3 x 108,0	114,3	128,0	117,0	108,0	124,0	111,0	95	300	12,00	SMUR114108350
DN150/168,3 x 159,0	168,3	186,0	172,0	159,0	178,0	162,5	95	300	20,00	SMUR168159350
DN200/219,1 x 211,0	219,1	241,0	222,5	211,0	243,0	214,5	95	400	32,00	SMUR219212400

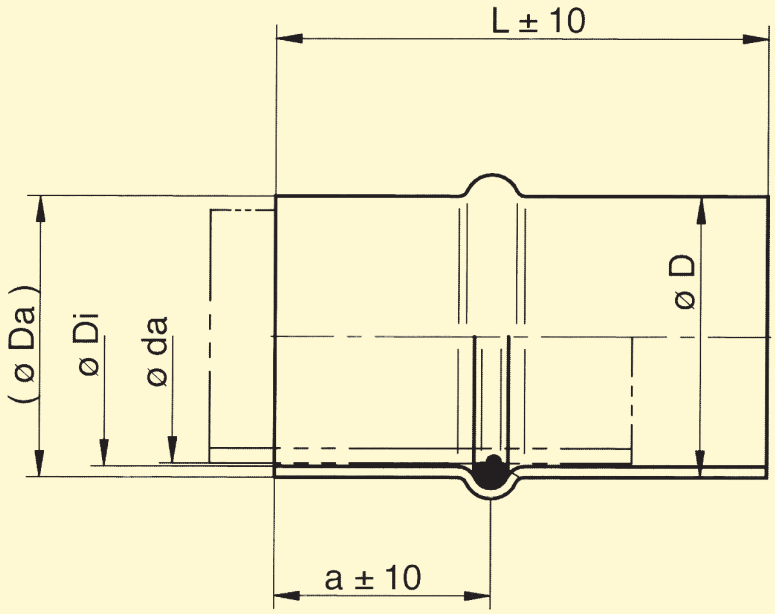
Other dimensions should be consulted ☎



Sleeve / V-weld SMU-S PN16									(DN80 - DN400)
Dimension	ø da [mm]	ø D [mm]	ø Da 1 [mm]	ø Di [mm]	ø Da 2 [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN80/88,9	88,9	120,0	101,6	91,6	88,9	100	250	3,20	SMUS08825001
DN100/108,0	108,0	138,5	121,0	111,0	108,0	100	250	3,70	SMUS10825001
DN100/114,3	114,3	145,0	127,0	117,0	114,3	100	250	4,00	SMUS11425001
DN125/133,0	133,0	169,0	145,0	136,0	133,0	100	250	4,30	SMUS13325001
DN125/139,7	139,7	169,0	152,4	143,4	139,7	100	250	4,30	SMUS13925001
DN150/159,0	159,0	198,0	172,5	162,5	159,0	100	250	5,30	SMUS15925001
DN150/168,3	168,3	207,0	182,5	172,5	168,3	100	250	5,70	SMUS16825001
DN200/219,1	219,1	258,0	233,5	222,5	219,1	100	250	8,00	SMUS21925001
DN250/273,0	273,0	316,0	289,5	278,5	273,0	100	250	9,80	SMUS27325001
DN300/318,0	318,0	369,0	336,0	232,0	318,0	100	250	13,50	SMUS31825001
DN300/323,9	323,9	369,0	342,1	329,1	323,9	100	250	13,50	SMUS32325001
DN400/406,4	406,4	451,0	423,6	411,0	406,4	100	250	16,50	SMUS40625001

Other dimensions should be consulted ☎

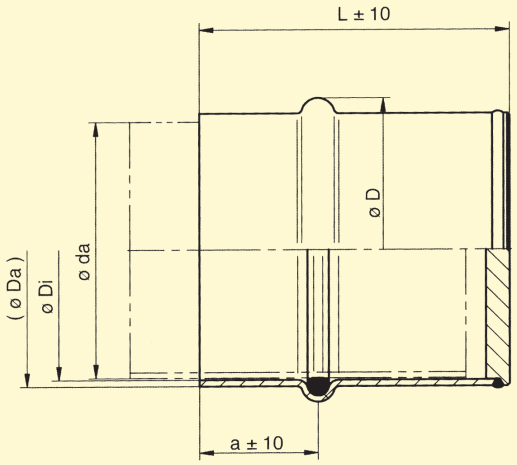
Type SMU-1



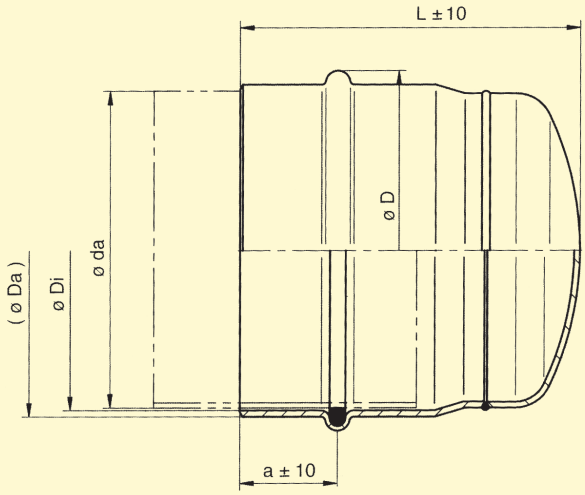
Sleeve SMU-1 PN16								(DN25 - DN400)
Dimension	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN25/33,7	33,7	60,5	43,0	36,0	105	210	0,80	SMUE03321001
DN32/42,4	42,4	78,0	51,6	44,6	105	210	1,00	SMUE04221001
DN40/48,3	48,3	78,0	57,0	50,0	105	210	1,00	SMUE04821001
DN50/57,0	57,0	90,0	66,0	59,0	105	210	1,30	SMUE05721001
DN50/60,3	60,3	90,0	72,0	63,0	105	210	1,30	SMUE06021001
DN65/76,1	76,1	103,5	88,9	78,9	105	210	2,40	SMUE07621001
DN80/88,9	88,9	120,0	101,6	91,6	100	250	3,20	SMUE08825001
DN100/108,0	108,0	138,5	121,0	111,0	100	250	3,70	SMUE10825001
DN100/114,3	114,3	145,0	127,0	117,0	100	250	4,00	SMUE11425001
DN125/133,0	133,0	169,0	145,0	136,0	100	250	4,30	SMUE13325001
DN125/139,7	139,7	169,0	152,4	143,4	100	250	4,30	SMUE13925001
DN150/159,0	159,0	198,0	172,5	162,5	100	250	5,30	SMUE15925001
DN150/168,3	168,3	207,0	182,5	172,5	100	250	5,70	SMUE16825001
DN200/219,1	219,1	258,0	233,5	222,5	100	250	8,00	SMUE21925001
DN250/273,0	273,0	316,0	289,5	278,5	100	250	9,80	SMUE27325001
DN300/323,9	323,9	369,0	342,1	329,1	100	250	13,50	SMUE32325001
DN400/406,4	406,4	451,0	423,6	411,0	100	250	16,50	SMUE40625001

Other dimensions should be consulted ☎

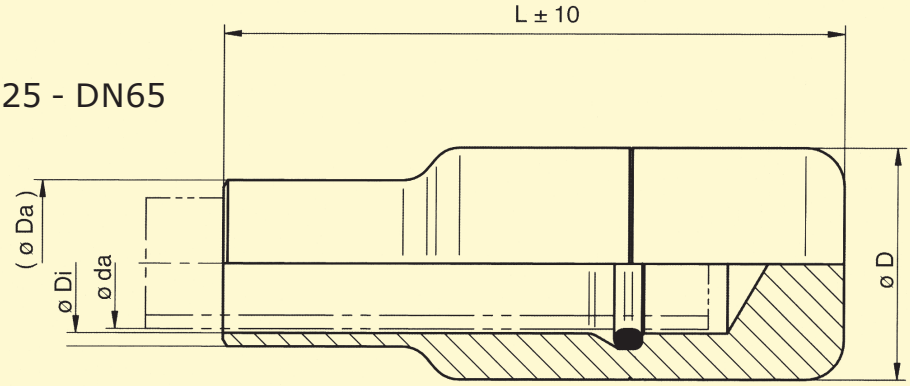
DN80 - DN200



DN250 - DN400



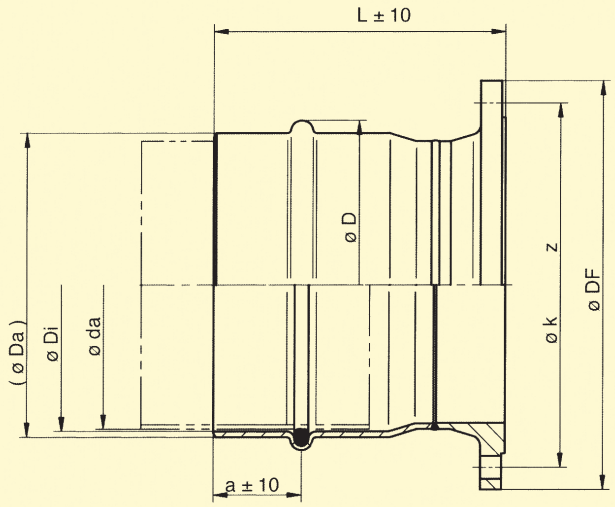
DN25 - DN65



Finishing sleeve SMU-K PN16								(DN25 - DN400)
Dimension	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
DN25/33,7	33,7	60,0	43,0	36,0	105	160	0,80	SMUK03316001
DN32/42,4	42,4	68,0	51,6	44,6	105	160	1,00	SMUK04216001
DN40/48,3	48,3	74,0	57,0	50,0	105	160	1,20	SMUK04816001
DN50/60,3	60,3	90,0	72,0	63,0	105	160	1,30	SMUK06016001
DN65/76,1	76,1	106,0	88,5	78,5	105	160	1,60	SMUK07616001
DN80/88,9	88,9	120,0	101,6	91,6	100	260	2,40	SMUK08829501
DN100/108,0	108,0	138,5	121,0	111,0	100	260	5,50	SMUK10826001
DN100/114,3	114,3	145,0	127,0	117,0	100	260	5,80	SMUK11430001
DN125/133,0	133,0	169,0	145,0	136,0	100	260	7,00	SMUK13327701
DN125/139,7	139,7	169,0	152,4	143,4	100	260	7,00	SMUK13930001
DN150/159,0	159,0	198,0	172,5	162,5	100	265	9,00	SMUK15931001
DN150/168,3	168,3	207,0	182,5	172,5	100	265	9,70	SMUK16831001
DN200/219,1	219,1	258,0	233,5	222,5	100	265	14,00	SMUK21932001
DN250/273,0	273,0	316,0	289,5	278,5	100	330	14,00	SMUK27333001
DN300/323,9	323,9	369,0	342,0	329,0	100	350	21,00	SMUK32335001
DN400/406,4	406,4	451,0	423,6	411,0	100	350	27,00	SMUK40635001

Other dimensions should be consulted ☎

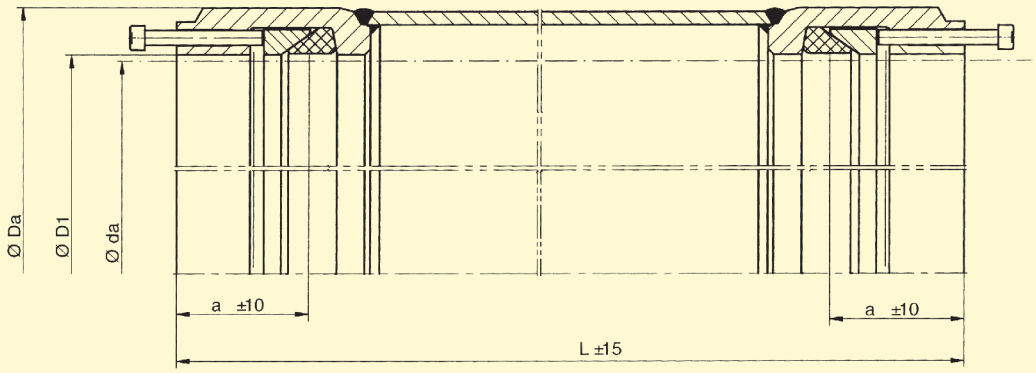
Type SMU–F



Sleeve SMU-F PN16 / PN10 (DN80 - DN400)

PN	Name	ø da [mm]	ø D [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	z [number of holes]	ø k [mm]	ø DF [mm]	Weight [Kg]	Catalogue No.
16	DN80/88,9	88,9	120,0	101,6	91,6	105	300	8	160	200	6,70	SMUF08830001
	DN100/108,0	108,0	138,5	121,0	111,0	100	305	8	180	220	8,40	SMUF10830001
	DN100/114,3	114,3	145,0	127,0	117,0	100	305	8	180	220	8,70	SMUF11430001
	DN150/159,0	159,0	198,0	172,5	162,5	100	310	8	240	285	13,10	SMUF15930001
	DN150/168,3	168,3	207,0	182,5	172,0	100	310	8	240	285	13,50	SMUF16830001
	DN200/216,0	216,0	258,0	230,5	219,5	100	315	12	295	340	19,00	SMUF21629501
	DN200/219,1	219,1	258,0	233,5	222,5	100	315	12	295	340	19,00	SMUF21931001
	DN250/273,0	273,0	316,0	289,5	278,5	100	320	12	355	405	25,60	SMUF27332001
	DN300/318,0	318,0	369,0	336,0	323,0	100	330	12	410	460	35,50	SMUF31833001
	DN300/323,9	323,9	369,0	342,0	329,0	100	330	12	410	460	35,50	SMUF32332001
	DN400/406,4	406,4	451,0	423,6	411,0	100	340	16	525	580	57,00	SMUF40634001
10	DN200/216,0	216,0	258,0	230,5	219,5	100	315	8	295	340	19,00	SMUF21631502
	DN200/219,1	219,1	258,0	233,5	222,5	100	315	8	295	340	19,40	SMUF21929000
	DN250/273,0	273,0	316,0	289,5	278,5	100	320	12	350	395	25,00	SMUF27332000
	DN300/318,0	318,0	369,0	336,0	323,0	100	330	12	400	445	31,00	SMUF31832002
	DN300/323,9	323,9	369,0	342,0	329,0	100	320	16	400	445	31,00	SMUF32332000
	DN400/406,4	406,4	451,0	423,6	411,0	100	330	16	515	565	46,00	SMUF40633000

Other dimensions should be consulted ☎



Sleeve SU PN16							
Name - dimension	ø da [mm]	ø Da [mm]	ø Di [mm]	a [mm]	L [mm]	Weight [Kg]	Catalogue No.
Sleeve SU PN16 DN500/508,0	508,0	559,0	512,0	70	500	80,00	SU50001600
Sleeve SU PN16 DN600/609,6	609,6	664,0	610,0	70	500	93,00	SU60001601
Sleeve SU PN16 DN700/711,0	711,0	763,0	716,0	70	500	120,00	SU70001601
Sleeve SU PN16 DN800/813,0	813,0	875,0	820,0	75	600	170,00	SU80001600

Other dimensions should be consulted ☎

Weld-on ring for sleeve SU PN16				
Name - dimension	ø da	L [mm]	Weight [Kg]	Catalogue No.
Weld-on ring for sleeve SU PN16 DN500/508,0	for 508,0	500	12,00	SU50001650
Weld-on ring for sleeve SU PN16 DN600/609,6	for 609,6	500	16,00	SU60001650
Weld-on ring for sleeve SU PN16 DN700/711,0	for 711,0	500	22,00	SU70001650
Weld-on ring for sleeve SU PN16 DN800/813,0	for 813,0	600	26,00	SU80001650

Other dimensions should be consulted ☎

NOTES

Sleeve replacement seal rings SMU PN16				
DN	ø Da	dimension	reinforced	Catalogue No.
25	33,7	31 x 12		308033120V
32	42,4	42 x 18		308042180V
40	48,3	48 x 14		308048140V
50	60,3	57 x 14		308057140V
50	57	54 x 16		308057160V
65	78	74 x 10		308074100V
65	76,1	74 x 12		308074120V
80	88,9	90 x 14		308090140V
80	88,9	90 x 16	yes	308090160V
100	108	109 x 14		308109140V
100	114,3	116 x 14		308116140V
100	108x114,3	116 x 16	yes	308116160V
100	114,3	116 x 18	yes	308116180V
125	133	132 x 16		308134160V
125	133	132 x 18		308134180V
125	139,7	141 x 14		308141140V
125	133x139,7	140 x 17		308141170V
150	159x168,3	159 x 22		308159220V
150	159	161 x 18		308161180V
150	159	161 x 20	yes	308161200V
150	159	159 x 22		308161220V
150	168,3	170 x 18		308170180V
150	168,3	170 x 22	yes	308170220V
200	219,1	222 x 18		308222180V
200	216	222 x 20		308222200V
200	219,1	222 x 22	yes	308222220V
200	219,1	222 x 24	yes	308222240V
250	273	270 x 20		308276200V
250	273	276 x 22	yes	308276220V
250	273	276 x 24	yes	308276240V
250	273	276 x 26	yes	308276260V
300	323,9	321 x 16		308321160V
300	323,9	321 x 18		308321180V
300	323,9	321 x 20		308321200V
300	318	321 x 22		308321220V
300	323,9	321 x 24	yes	308321240V
350	355,6	359 x 18		308355180V
350	378	379 x 18		308378180V
400	406,4	409 x 18		308406180V
400	406,4	406,4 x 20	yes	308406200V
400	406,4	406,4 x 22	yes	308406220V
400	426	430 x 18		308426180V
400	426	426,0 x 20		308426200V
400	426	426,0 x 22	yes	308426220V

Reinforced sealing ring is used in standard cases the sealing ring does not ensure tightness of the socket sleeve pipe washers for example ovality or nonstandard outer pipe diameter.

Insulation – Shrink-fit kit system

Insulation – Schuck SBS shrink-fit kit system	
Name	Catalogue No.
SMU/SMU-R sleeves DN50/65	SBS00006
SMU/SMU-R sleeves DN80/100	SBS00003
SMU sleeve, divided design/SMU-R sleeve, divided design DN100	SBS00007
SMU/SMU-R sleeves DN125	SBS00010
SMU/SMU-R sleeves DN150	SBS00004
SMU/SMU-R sleeves DN200	SBS00005
SMU/SMU-R sleeves DN300	SBS00008
SMU/SMU-R sleeves DN250	SBS00009
SMU/SMU-R sleeves DN400	SBS00011

6. OTHER PIPELINE SYSTEM COMPONENTS, EQUIPMENTS AND ACCESSORIES

OTHER PIPELINE SYSTEM COMPONENTS, EQUIPMENTS AND ACCESSORIES

6.1 Household Connections (Gas house lead-ins)

Inflexible version

Flexible version

Water house lead-in

Accessories

6.2 Safety Fittings

Fire protection valve

Overflow protection

fastra.

OTHER PIPELINE SYSTEM COMPONENTS

HOUSEHOLD CONNECTIONS

Gas house lead-ins

USE AND DESCRIPTION

Household connections (Gas house lead-ins) are used for passes through outer walls and termination of media supply lines inside buildings.

The connections are equipped with anti corrosion protection, protective PE pipe for mounting and anchoring to the wall with a patented threaded grooving (as protection against plucking out). They are available in fixed or flexible option with/without straight or angular ball valve (which is fireproof), with electrical insulation, various connection options and, eventually, with thermally controlled self closing seal.

Individual types and options differ by design, parameters and scope and method of application; they are described in detail in the following part of the catalogue.

SCOPE OF APPLICATION

HOUSEHOLD GAS CONNECTIONS

Medium:
Gases, group 1 (natural gas)

Dimension: DN25 – DN150

Operating pressure:
Up to 4 bar (based on option)

Operating temperature: -20ºC up to +60ºC

HOUSEHOLD GAS CONNECTIONS

Medium: voda, pitná voda

Dimenze: DN25 – DN150

Operating pressure:
do 16 bar (based on option)

Operating temperature: +1ºC up to +50ºC

FASTRA s.r.o., Libenice 30 - Skalka, 280 02 Kolín, tel.: +420 321 720 258, e-mail: info@fastra.cz, www.fastra.cz

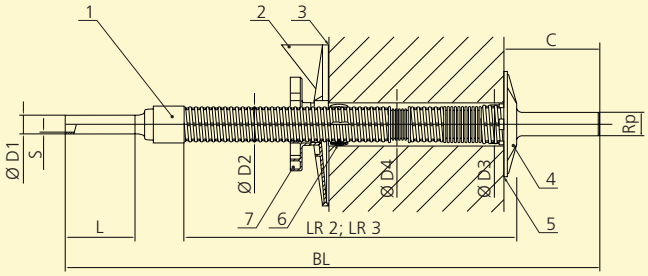
OTHER PIPELINE SYSTEM COMPONENTS

6.1 Household connections (Gas house lead-ins)

Household connections – Fixed version

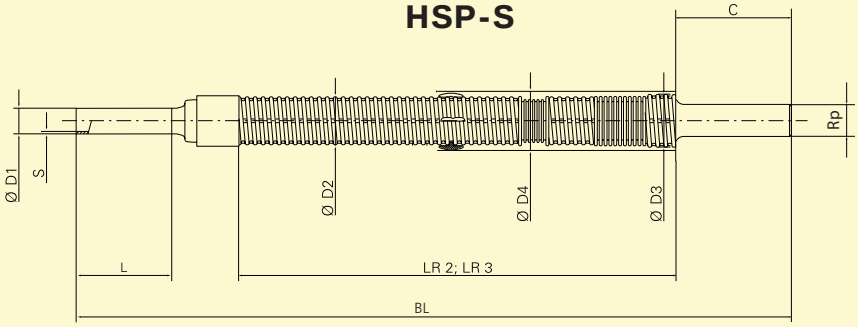
TYPE HSP-S (G), HSPST-S (G) (without ball valve)

HSP-S with PE/steel reducer, inlet side PE, outlet side steel for welding connection
HSP-G with PE/steel reducer, inlet side PE, outlet side steel with outer thread
HSPST-S inlet side steel for welding connection, outlet side steel for welding connection
HSPST-G inlet side steel for welding connection, outlet side steel with outer thread



Explanation:
1. PE/steel reducer
2. Mounting plate
3. Mounting plate seal
4. ARO retaining plate
5. ARO retaining plate seal
6. Centering ring
7. Clamping nut

HSP-S



Dimen-sion	Rp	S	øD1	øD2	øD3	øD4	L	C		LR		BL	
								min	max	LR2	LR3	PE	Steel
DN25	1"	3,0	32	60	66	75	120	100	140	420	720	1000	880
DN32	1¼"	3,7	40	75	80	90	130	110	150	420	720	1040	1060
DN40	1½"	4,6	50	75	80	90	130	110	150	420	720	1040	1060
DN50	2"	5,8	63	90	95	100	130	120	160	420	720	1040	1060

Type HSP-S		
Name - dimension	Inlet - Outlet side	Catalogue No.
Gas house lead-in HSP–S DN25/32	PE d32 - steel DN25/33,7 (1")	610-1110-025
Gas house lead-in HSP–S DN32/40	PE d40 - steel DN32/42,4 (5/4")	610-1110-032
Gas house lead-in HSP–S DN40/50	PE d50 - steel DN40/48,3 (6/4")	610-1110-040
Gas house lead-in HSP–S DN50/63	PE d63 - steel DN50/60,3 (2")	610-1110-050

Type HSPST-S		
Name - dimension	Inlet - Outlet side	Catalogue No.
Gas house lead-in HSPST–S DN25	steel DN25 (1") - steel DN25 (1")	610-1120-025
Gas house lead-in HSPST–S DN32	steel DN32 (5/4") - steel DN32 (5/4")	610-1120-032
Gas house lead-in HSPST–S DN40	steel DN40 (6/4") - steel DN40 (6/4")	610-1120-040
Gas house lead-in HSPST–S DN50	steel DN50 (2") - steel DN50 (2")	610-1120-050

Other dimensions should be consulted ☎

Household connections – Fixed version

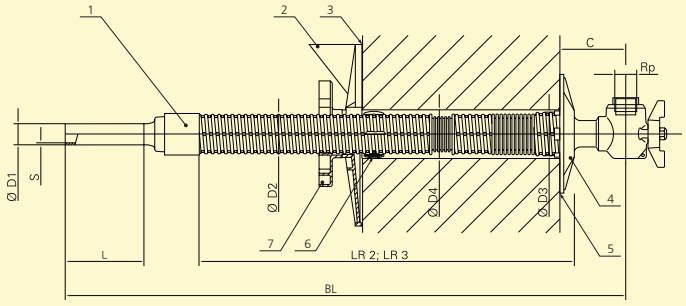
TYP HSP-SK ... GT, HSPST-SK ... GT (with ball valve)

HSP-SK ... GT with PE/steel reducer, inlet side PE, outlet side steel with welded ball valve with inner outlet thread (option indication "KK" inserted between labels "SK" and "GT" – following below)

HSPST-SK ... GT inlet side steel for welding connection, outlet side steel with welded ball valve with inner outlet thread (option indication "KK" inserted between labels "SK" and "GT" – following below)

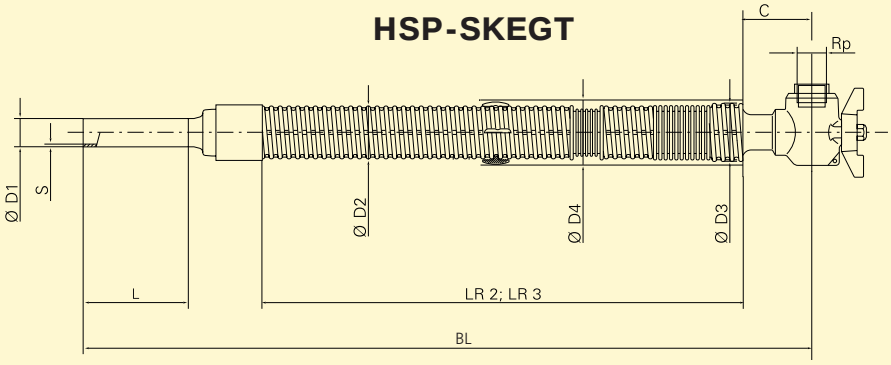
Option KK of type SK...(E, D, I, M, F, FL, S, RV)...GT

E	angular	D	straight
I	integrated insulation connection	M	threaded connection
F	flanged connection	FL	free flanged connection
S	welding connection	RV	connection by screw coupling for regulator



Explanation:
1. PE/steel reducer
2. Mounting plate
3. Mounting plate seal
4. ARO retaining plate
5. ARO retaining plate seal
6. Centering ring
7. Clamping nut

HSP-SKEGT



Dimen-sion	Rp	S	øD1	øD2	øD3	øD4	L	C		LR2	LR3	BL	
								min	max			PE	steel
DN25	1"	3,0	32	60	66	75	120	100	140	420	720	1000	880
DN32	1¼"	3,7	40	75	80	90	130	110	150	420	720	1040	1060
DN40	1½"	4,6	50	75	80	90	130	110	150	420	720	1040	1060
DN50	2"	5,8	63	90	95	100	130	120	160	420	720	1040	1060

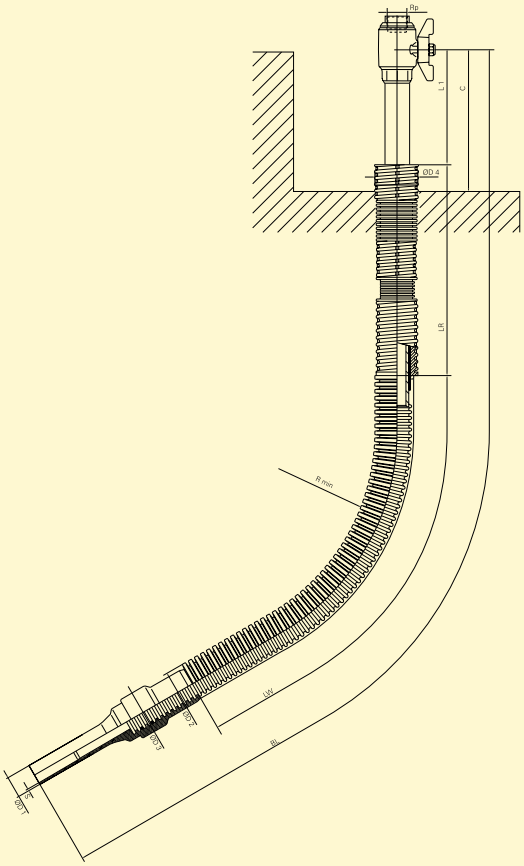
Name - dimension	Inlet - Outlet side	Catalogue No.
Gas house lead-in HSP–SKEGT DN25/32	PE d32 - angular KK DN25 with inner thread 1"	610-1150-025
Gas house lead-in HSP–SKEGT DN32/40	PE d40 - angular KK DN32 with inner thread 5/4"	610-1150-032
Gas house lead-in HSP–SKEGT DN40/50	PE d50 - angular KK DN40 with inner thread 6/4"	610-1150-040
Gas house lead-in HSP–SKEGT DN50/63	PE d63 - angular KK DN50 with inner thread 2"	610-1150-050

Other dimensions should be consulted ☎

Household connections – Flexible version

TYPE HSP-PEFLEX

Household connections (Gas house lead-ins) with anti corrosion PE tubing, flexible part made of HD-PE pipe according to EN 1555 2, PE/steel reducer, inlet side PE, outlet side steel with inner thread, eventually with fixed or free flange or screw coupling for regulator.



Minimum bend radius R min. [mm] by dimension and ambient temperature during installation

Dimension	Temperature during installation		
	+20ºC	+10ºC	0ºC
DN25	640	1120	1600
DN32	800	1400	2000
DN40	1000	1750	2500
DN50	1200	2205	3150

Dimen-sion	Rp	S	øD1	øD2	øD3	L1	LR	C		LW	BL
								min	max		
DN25	1"	3,0	32	50	66	80	420	105	165	2000*	2705*
DN32	1¼"	3,7	40	75	80	90	420	120	180	2000*	2740*
DN40	1½"	4,6	50	75	80	90	420	120	180	2000*	2740*
DN50	2"	5,8	63	90	95	100	420	130	170	3000/4000	3740/4740

* Prolonged options in steps of 1000 mm are available by request.

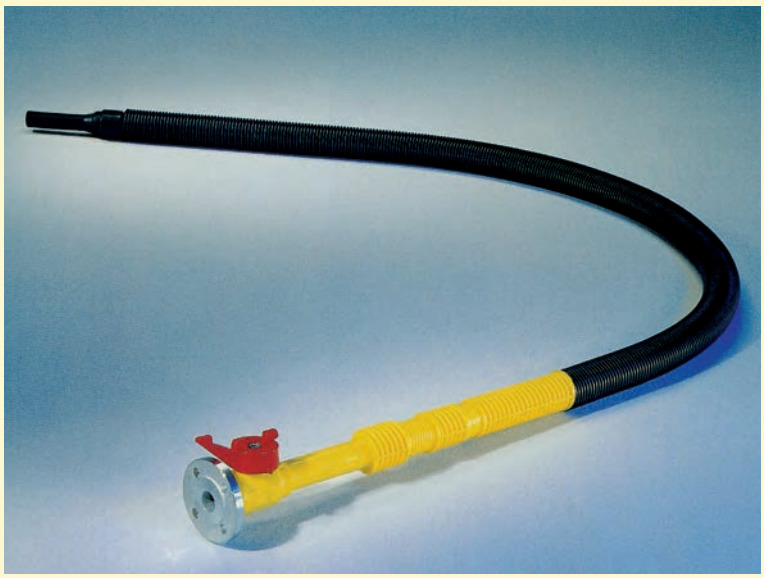
Name - dimension	Inlet - Outlet side	Catalogue No.
Gas house lead-in HSP–PEFLEX DN25/32	PE d32 - straight KK DN25 with inner thread 1"	610-2110-025
Gas house lead-in HSP–PEFLEX DN32/40	PE d40 - straight KK DN32 with inner thread 5/4"	610-2110-032
Gas house lead-in HSP–PEFLEX DN40/50	PE d50 - straight KK DN40 with inner thread 6/4"	610-2110-040
Gas house lead-in HSP–PEFLEX DN50/63	PE d63 - straight KK DN50 with inner thread 2"	610-2110-050

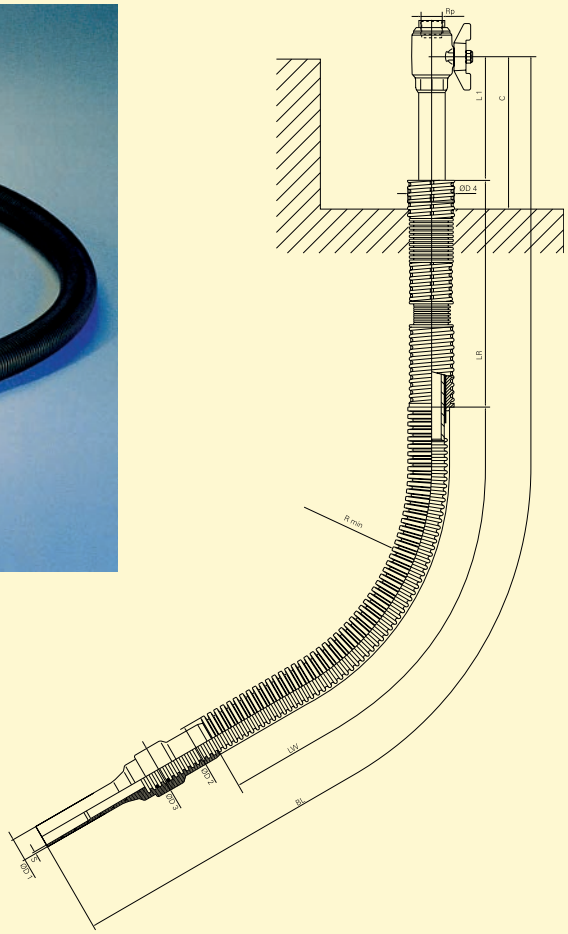
Other dimensions should be consulted ☎

Household connections – Flexible version

TYPE HSPFLEX DN25, HSP/F DN32-DN50

Household connections (Gas house lead-ins) with anti corrosion PE tubing, flexible part made of high quality steel with double insulating bitumen tape, PE/steel reducer, inlet side PE, outlet side steel with inner thread, eventually with fixed or free flange or screw coupling for regulator.





Minimum bend radius R min. = 350 mm is not dependent on ambient temperature for all listed dimensions

TYPE	Dimen-sion	Rp	S	øD1	øD2	øD3	øD4	L1	LR	C		LW	BL
										min	max		
HSPFLEX	DN25	1"	3,0	32	50	58	66	200	420	200	260	1500/2000*	2400/2900*
HSP/F	DN32	1¼"	3,7	40	75	81	80	200	420	200	260	1500/2000*	2490/2990*
	DN40	1½"	4,6	50	75	81	80	200	420	200	260	1500/2000*	2490/2990*
	DN50	2"	5,8	63	90	90	95	200	420	200	260	1500/2000*	2510/3010*

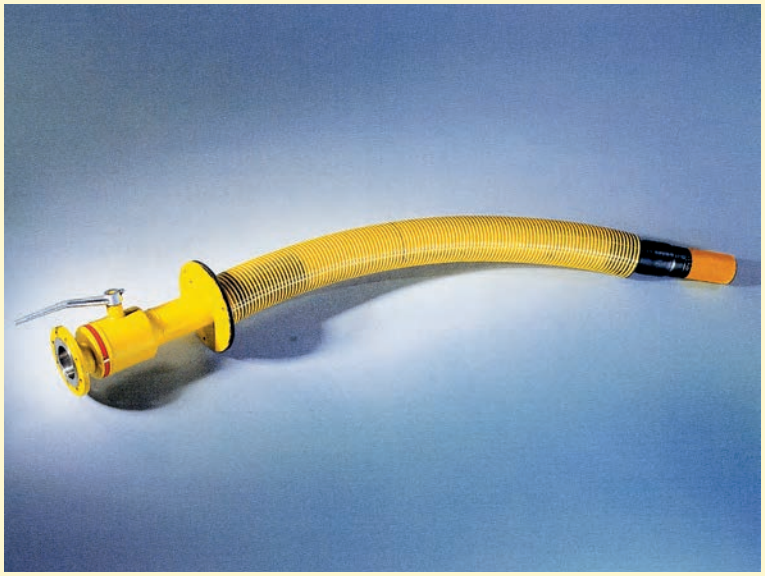
* Prolonged options in steps of 1000 mm are available by request.

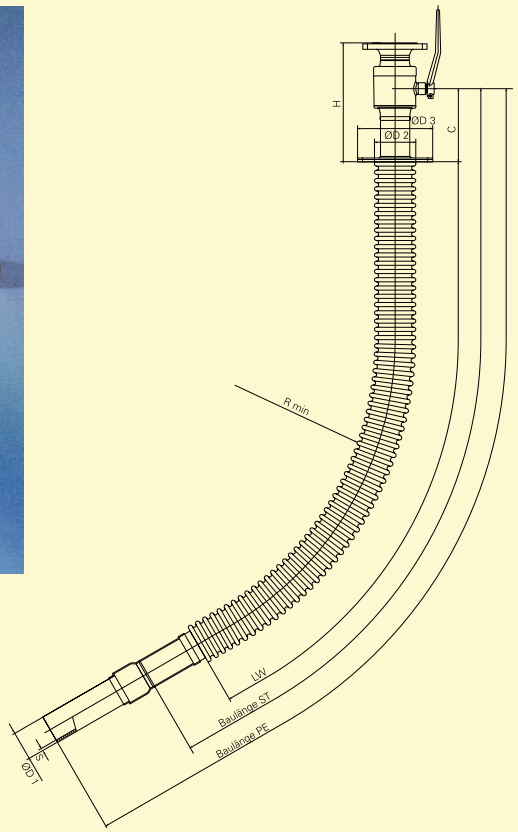
Name - dimension	Inlet - Outlet side	Catalogue No.
Gas house lead-in HSPFLEX DN25/32	PE d32 - straight KK DN25 with inner thread 1"-1500mm	610-2120-025
Gas house lead-in HSPFLEX DN25/32-L	PE d32 - straight KK DN25 with inner thread 1"-2000mm	610-2130-025
Gas house lead-in HSP/F DN32/40	PE d40 - straight KK DN32 with inner thread 5/4"-1500mm	610-2120-032
Gas house lead-in HSP/F DN32/40-L	PE d40 - straight KK DN32 with inner thread 5/4"-2000mm	610-2130-032
Gas house lead-in HSP/F DN40/50	PE d50 - straight KK DN40 with inner thread 6/4"-1500mm	610-2120-040
Gas house lead-in HSP/F DN40/50-L	PE d50 - straight KK DN40 with inner thread 6/4"-2000mm	610-2130-040
Gas house lead-in HSP/F DN50/63	PE d63 - straight KK DN50 with inner thread 2"-1500mm	610-2120-050
Gas house lead-in HSP/F DN50/63-L	PE d63 - straight KK DN50 with inner thread 2"-2000mm	610-2130-050

Household connections – Flexible version

TYPE HSFLEX

Household connections (Gas house lead-ins) with anti corrosion PE tubing, flexible part made of high quality steel with double insulating bitumen tape, inlet side PE or steel, outlet side steel with fixed flange.





Minimum bend radius	
DN80	R min. = 300 mm
DN100	R min. = 450 mm
DN150	R min. = 1100 mm

Dimension	øD1		S		øD2	øD3	C	LW	BL		H
	PE	steel	PE	steel					steel	PE	
DN80	90	88,9	8,2	4,0	135	300	315	1500	2500	3330	495
DN80	90	88,9	8,2	4,0	135	300	315	2000	3500	3800	495
DN100	110	114,3	10,0	4,0	165	300	330	2000	3100	3450	525
DN150	160	168,3	14,6	4,5	180	330	425	3000	3550	3950	690

Gas house lead-in / Type HSFLEX with PE inlet side			
Name - dimension	Length LW	Inlet side PE100 SDR11	Catalogue No.
HSFLEX-SKIDFGT-PE-ARO DN80	1500	90 x 8,2	610-2210-080
HSFLEX-SKIDFGT-PE-ARO DN80	2000	90 x 8,2	610-2220-080
HSFLEX-SKIDFGT-PE-ARO DN100	2000	110 x 10	610-2210-100
HSFLEX-SKIFGT-PE-ARO DN150	3000	160 x 14,6	610-2210-150

Option SKIDFGT – outlet side – welded straight ball valve with integrated insulation coupling with fixed flange according to DIN 2633

Gas house lead-in / Type HSFLEX with steel inlet side			
Name - dimension	Length LW	Inlet side	Catalogue No.
HSFLEX-SKIDFGT-ARO DN80	1500	88,9 x 4,0	610-2230-080
HSFLEX-SKIDFGT-ARO DN80	2000	88,9 x 4,0	610-2240-080
HSFLEX-SKIDFGT-ARO DN100	2000	114,3 x 4,0	610-2230-100
HSFLEX-SKIFGT-ARO DN150	3000	168,3 x 4,5	610-2230-150

Option SKIFGT – outlet side – welded flange according to DIN 2633 and attached ball valve of type SKIFG (with DIN 2633 flanges on both sides and integrated insulation coupling) with connection screws and seal for assembly

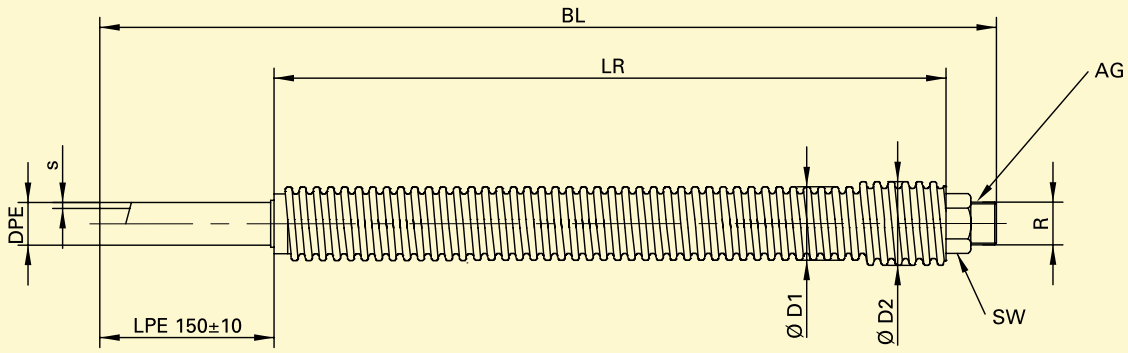
NOTES

Household water supply connections

TYPE WHP

WHP-AG Protective PEHD tube, inlet side PE according to EN 1555 2 (blue color), outlet side terminated by inset brass screw coupling with outer thread.

WHP-PE Protective PEHD tube, inlet side PE according to EN 1555 2 (blue color), outlet side PE according to EN 1555 2.



Dimension	R	øD PE	S	øD1	øD2	SW
DN25	1"	32	3,0	60	66	46
DN32	1¼"	40	3,7	60	66	50
DN40	1½"	50	4,6	75	80	60
DN50	2"	63	5,8	90	95	70

Water house lead-in / Type WHP-AG		
Name - dimension	Length LR/BL [mm]	Catalogue No.
WHP-AG DN25/PE32	400/780	610-3010-025
WHP-AG DN25/PE32	700/1100	610-3020-025
WHP-AG DN32/PE40	400/780	610-3010-032
WHP-AG DN32/PE40	700/1100	610-3020-032
WHP-AG DN40/PE50	400/780	610-3010-040
WHP-AG DN40/PE50	700/1100	610-3020-040
WHP-AG DN50/PE63	400/780	610-3010-050
WHP-AG DN50/PE63	700/1100	610-3020-050

Water house lead-in / Type WHP-PE		
Name - dimension	Length LR/BL [mm]	Catalogue No.
WHP-PE DN25/PE32	400/880	610-3030-025
WHP-PE DN25/PE32	700/1200	610-3040-025
WHP-PE DN32/PE40	400/880	610-3030-032
WHP-PE DN32/PE40	700/1200	610-3040-032
WHP-PE DN40/PE50	400/880	610-3030-040
WHP-PE DN40/PE50	700/1200	610-3040-040
WHP-PE DN50/PE63	400/880	610-3030-050
WHP-PE DN50/PE63	700/1200	610-3040-050

Household water supply connections

TYPE WHP-PEFLEX

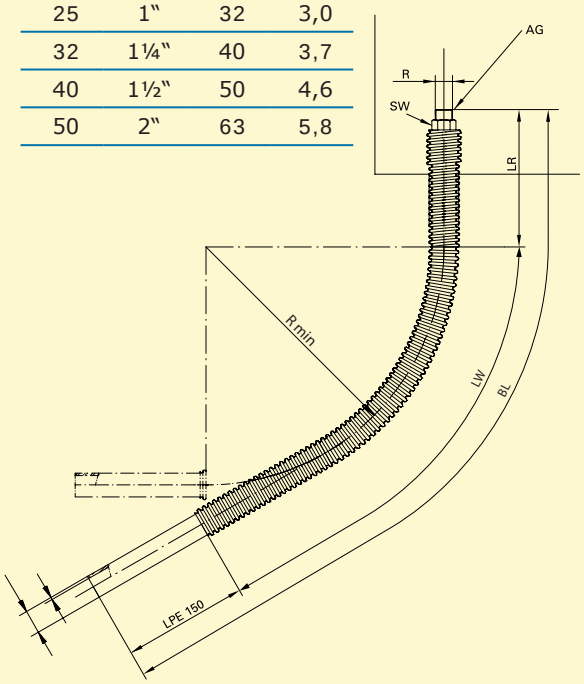
Water house lead-in / Type WHP-PEFLEX PE/AG
Flexible household connections (Gas house lead-ins) for non basement buildings for operating pressure up to 10 bar. Flexible protective PEHD tube, inlet side PE 100 according to EN 1555 2 (blue color), outlet side terminated by inset brass screw coupling with outer thread.

Water house lead-in / Type WHP-PEFLEX PE/PE
Flexible household connections (Gas house lead-ins) for non basement buildings for operating pressure up to 10 bar. Flexible protective PEHD tube, inlet side PE 100 according to EN 1555 2 (blue color), outlet side PE 100 according to EN 1555 2.

Minimum bend radius R min. [mm] by dimension and ambient temperature during installation

Dimension	Temperature during installation		
	+20ºC	+10ºC	0ºC
DN25	640	1120	1600
DN32	800	1400	2000
DN40	1000	1750	2500
DN50	1200	2205	3150

DN	Rp	øD PE	S
25	1"	32	3,0
32	1¼"	40	3,7
40	1½"	50	4,6
50	2"	63	5,8



Water house lead-in / Type WHP-PEFLEX PE/PE

Name - dimension	Length LR/LW [mm]	Mounting length BL [mm]	Catalogue No.
WHP-PE DN25/PE32	420/2000	2880	610-3050-025
WHP-PE DN25/PE32 - L	420/3000	3880	610-3060-025
WHP-PE DN32/PE40	420/2000	2880	610-3050-032
WHP-PE DN32/PE40 - L	420/3000	3880	610-3060-032
WHP-PE DN40/PE50	470/2000	2880	610-3050-040
WHP-PE DN40/PE50 - L	470/3000	3880	610-3060-040
WHP-PE DN50/PE63	470/3000	3880	610-3050-050
WHP-PE DN50/PE63 - L	470/4000	4880	610-3060-050

Prolonged options in steps of 1000 mm are available by request

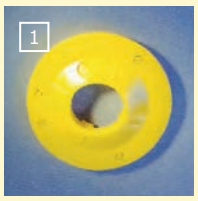
Water house lead-in / Type WHP-PEFLEX PE/AG

Name - dimension	Length LR/LW [mm]	Mounting length BL [mm]	Catalogue No.
WHP-PEFLEX PE/AG DN25/PE32	420/2000	2780	610-3070-025
WHP-PEFLEX PE/AG DN25/PE32 - L	420/3000	3780	610-3080-025
WHP-PEFLEX PE/AG DN32/PE40	420/2000	2780	610-3070-032
WHP-PEFLEX PE/AG DN32/PE40 - L	420/3000	3780	610-3080-032
WHP-PEFLEX PE/AG DN40/PE50	470/2000	2780	610-3070-040
WHP-PEFLEX PE/AG DN40/PE50 - L	470/3000	3780	610-3080-040
WHP-PEFLEX PE/AG DN50/PE63	470/3000	3780	610-3070-050
WHP-PEFLEX PE/AG DN50/PE63 - L	470/4000	4780	610-3080-050

Accessories, examples of installation

ACCESSORIES FOR HOUSEHOLD CONNECTIONS (GAS HOUSE LEAD-INS)

To ensure proper and faultless installation of combined household connections, it is necessary to use accessories supplied by the system manufacturer and observe the installation procedures. It is namely the use of Schuck Beto Fix sealing plaster, which guarantees that the required parameters of transmission through the outer wall are met.



ARO retaining plate (PE)

ARP retaining plate (steel)

ARO/ARP retaining plate seal (EDPM)

ARO retaining plate seal (foam)

Mounting plate with seal and clamping nut

Centering ring

Sealing plaster Schuck Beto Fix

Injecting pump

No.	Name	Intended for	Catalogue No.
1.	Wall disk ARO, yellow, DN25	HSP - gas	610-4000-025
	Wall disk ARO, yellow, DN32/DN40	HSP - gas	610-4000-032
	Wall disk ARO, yellow, DN50	HSP - gas	610-4000-050
	Wall disk ARO, black, DN25/DN32	WHP - water	610-4010-025
	Wall disk ARO, black, DN40	WHP - water	610-4010-040
	Wall disk ARO, black, DN50	WHP - water	610-4010-050
2.	Wall disk ARO, DN25		610-4020-025
	Pull-out protection plate ARP, DN32/DN40		610-4020-032
	Pull-out protection plate ARP, DN50		610-4020-050
3.	Sealing ring for ARO from EDPM DN25 DN50		610-4030-025
4.	Sealing ring for ARO from foam DN25 DN50		610-4040-025
5.	Wall finishing set No.1	HSP-gas DN25 and WHP-water DN25/DN32	610-4050-025
	Wall finishing set No.2	HSP-gas DN32-DN50 and WHP-water DN40/DN50	610-4050-032
	Wall finishing set No.3	HSP-gas DN50 and WHP-water DN50	610-4050-050
	Sealing ring for ARO from foam No.1	HSP-gas DN25 and WHP-water DN25/DN32	610-4060-025
	Sealing ring for ARO from foam No.2	HSP-gas DN32/DN40 and WHP-water DN40	610-4060-032
	Sealing ring for ARO from foam No.3	HSP-gas DN25-DN50 and WHP-water DN25-DN50	610-4060-050
6.	Centering ring DN25-DN50		610-4070-025
7.	Schuck-Beto-Fix 2kg		610-4080-002
	Schuck-Beto-Fix 12 x 2kg		610-4080-012
	Schuck-Beto-Fix 25kg		610-4080-025
8.	Cartridge gun		610-4000-010

Accessories, examples of installation

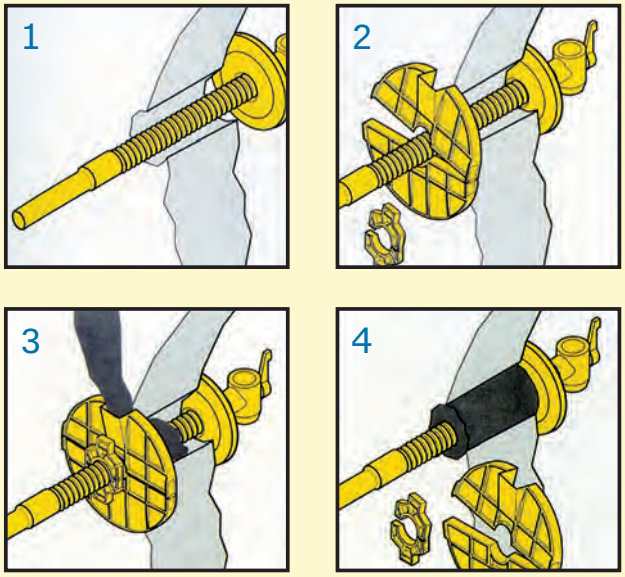
INSTALLATION PROCEDURE

1. Insert the bushing into the drilled or cut hole in the wall so that the retaining plate seats on the wall surface.

2. Place the mounting plate onto the bushing end with threaded part and clamp it using the clip. Then place the clamping nut and clamp it as well.

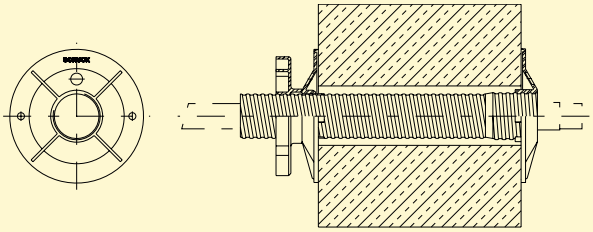
3. Align the bushing in the hole (the funnel on the mounting plate must be on top), tighten the clamping nut to securely press the mounting plate onto the wall surface and pour the sealing plaster Schuck Beto Fix into the funnel.

4. During setting of the mortar (approx. 15 min.), you can continue installing the piping. The mounting plate with clamping nut can be removed after the plaster sets, or later. The retaining plate remains on the inner surface of the building's wall.

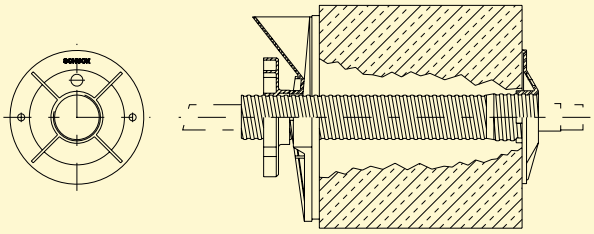


EXAMPLES OF INSTALLATION

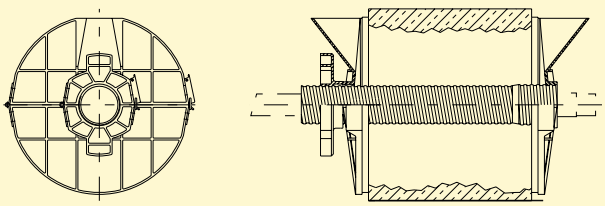
Example 1:
If the hole is precisely drilled, you can use two ARO retaining plates and concrete injecting pump for installation.



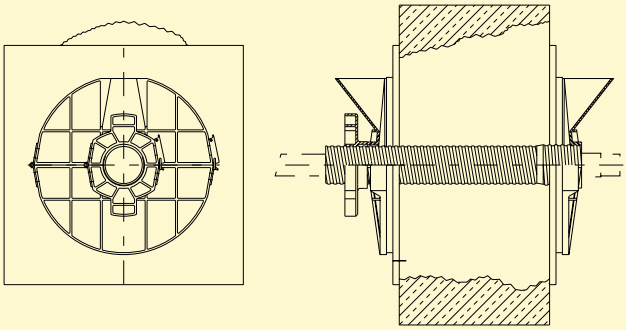
Example 2:
If the hole is drilled or cut and its walls are slightly damaged, use the ARO retaining plate and a mounting plate for installation.



Example 3:
In case of uneven hole of up to 250mm in diameter, you can use mounting plates on both sides for installation.



Example 4:
In case of uneven hole of over 250mm in diameter, place the auxiliary retaining plates and continue as in Example 3.



fastra.

OTHER PIPELINE SYSTEM COMPONENTS

SAFETY FITTINGS

USAGE AND DESCRIPTION

Safety fittings are components of piping systems, which are used to secure such systems in case of non standard or emergency situations (fire, interruption of pipeline, occurrence of leakages, exceeding allowed values etc.).

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OTHER PIPELINE SYSTEM COMPONENTS, EQUIPMENTS AND ACCESSORIES

6.2 Safety Fittings

6.2-1 Fire protection valve

6.2-1.1 TAS 21, TAS 22

6.2-1.2 TAS 23

6.2-2 Overflow safety fuses

6.2-2.1 GSW 57

Fire protection valve

Fire protection valve are used for protection of premises.

Their purpose is automatic closure of the pipeline in case of fire, thus preventing generation of explosive mixture by leakage of gas from gas pipeline or gas device as a result of damage by heat.

A fire fitting usually consists of a steel body equipped with coupling elements and internal valve, which is attached to a pressure spring in a thermal casing and secured by a safety fuse. The automatic closure of the fitting takes place when the ambient/medium temperature exceeds the acceptable limit; in this case, the thermal fuse-solder melts and the disengaged spring presses the valve into the valve seat of the fitting body and tightly closes the medium flow.

Description of individual types and options is given in the following text of this catalogue.

SCOPE OF APPLICATION AND OPTIONS

Medium:
All types of gases according to EN 437 and DVGW AB G 260/1

Medium/ambient operating temperature range:
-10ºC up to +80ºC/-20ºC up to +80ºC

Closing temperature:
100ºC ±5ºC

Closing temperature:
Approx. 45 sec

Thermal resistance:
925ºC

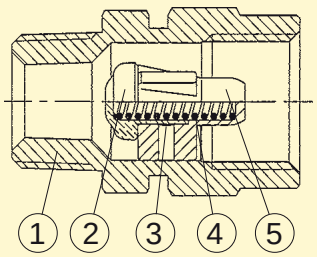
Sealing time after closure:
min. 60 min

Labeling of gas flow direction:
Arrow on fitting body

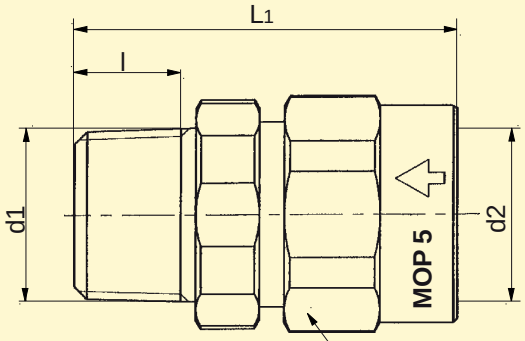
NOTES

Fire protection valve armatures

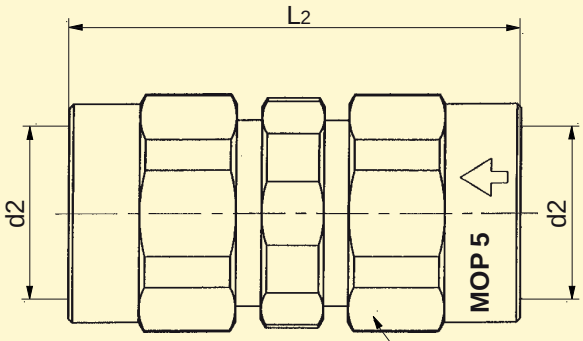
TYPE TAS 21 (DN10 – DN25)



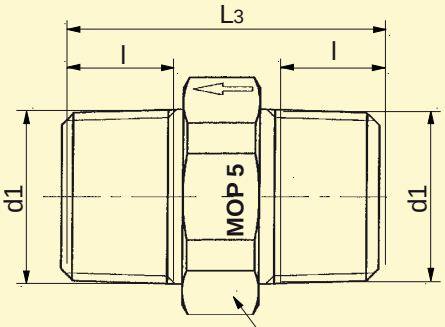
1. Body (steel)
2. Closing cone (copper coated steel)
3. Safety fuse (solder)
4. Closing spring (stainless steel)
5. Closing element (brass)



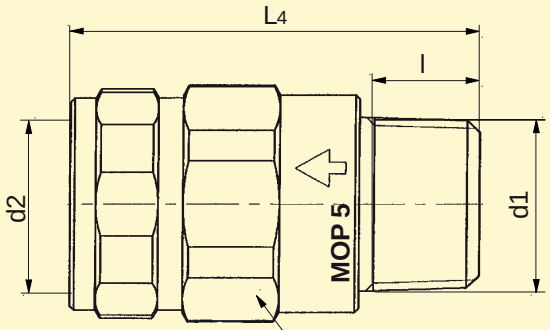
TAS 21
DN10-25 IG/AG



TAS 21
DN15-25 IG/IG



TAS 21
DN15-25 AG/AG



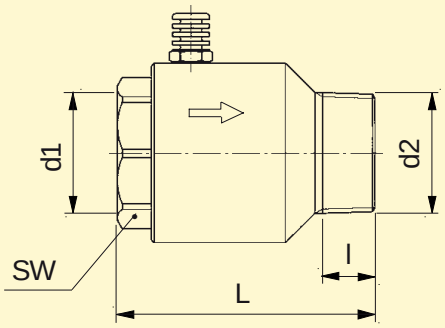
TAS 21
DN15-25AG/IG

Type	DN	MOP bar	d_1 ISO 7-1	d_2 ISO 7-1	L_1 ±0,5	l	L_2	L_3	L_4	SW	Weight			
											IG/AG	IG/IG	AG/AG	AG/IG
TAS 21	10	5	R⅜"	Rp⅜"	42,2	9,8	-	-	-	22	0,060	-	-	-
TAS 21	15	5	R½"	Rp½"	46	13	54,5	38	49	27	0,110	0,150	0,071	0,110
TAS 21	20	5	R¾"	Rp¾"	49	14,2	61	41	52	32	0,185	0,210	0,130	0,185
TAS 21	25	5	R1"	Rp1"	55,5	18,8	69	47	58,5	70	0,280	0,400	0,250	0,280

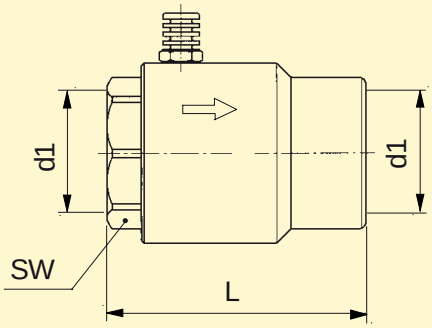
TYPe	DN	Catalogue No.			
		IG/AG	IG/IG	AG/AG	AG/IG
TAS 21	10	TAS21 ST-10-IG/AG	–	–	–
TAS 21	15	TAS21 ST-15-IG/AG	TAS21 ST-15-IG/IG	TAS21 ST-15-AG/AG	TAS21 ST-15-AG/IG
TAS 21	20	TAS21 ST-20-IG/AG	TAS21 ST-20-IG/IG	TAS21 ST-20-AG/AG	TAS21 ST-20-AG/IG
TAS 21	25	TAS21 ST-25-IG/AG	TAS21 ST-25-IG/IG	TAS21 ST-25-AG/AG	TAS21 ST-25-AG/IG

Fire protection valve

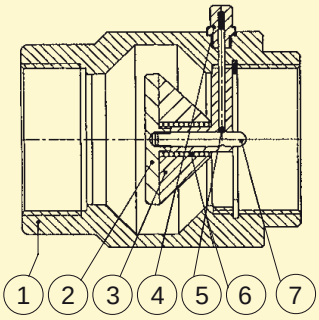
TYPE TAS 22 (DN25 – DN50)

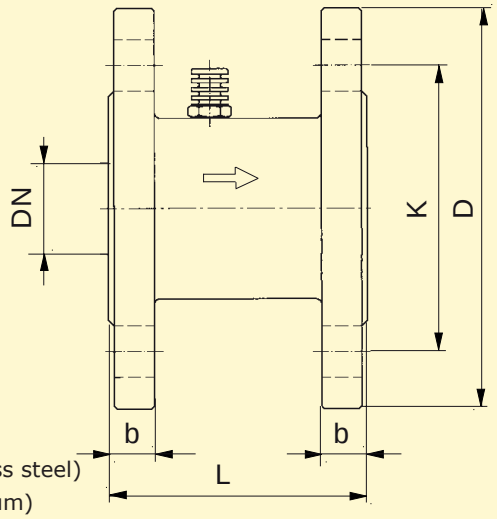


TAS 22
DN32-50 IG/AG MOP5



TAS 22
DN32-50 IG/IG MOP5





TAS 22
DN25-50 FL/FL

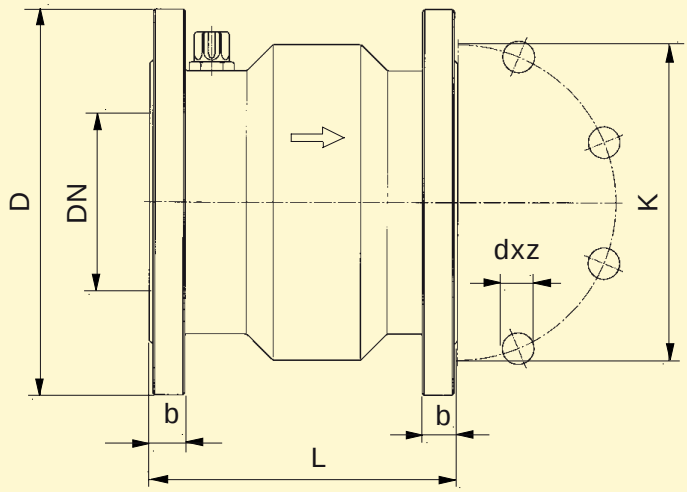
1. Body (St 52)
2. Closing cone ((stainless steel)
3. Flow cone (aluminium)
4. Thermal sensor with safety fuse (C 45)
5. Ball (chrome-plated steel)
6. Closing spring (stainless steel)
7. Guiding spindle (stainless steel)

Type	DN	MOP bar	d_1 ISO 7-1	d_2 ISO 7-1	L ±0,5	l	D	d	K	b	SW	Weight		
												IG/AG	IG/IG	FL/FL
TAS 22	25	5/16	-	-	80	-	115	14	85	16	-	-	-	2,630
TAS 22	32	5/16	Rp1¼"	R1¼"	90	21	140	18	100	16	50	0,650	0,750	4,200
TAS 22	40	5/16	Rp1½"	R1½"	90	22	150	18	110	17	60	0,850	1,050	4,500
TAS 22	50	5/16	Rp2"	R2"	110	23	165	18	125	20	70	1,350	1,540	6,600

Type	DN	Catalogue No.		
		IG/AG	IG/IG	FL/FL
TAS 22	25	-	-	TAS22 ST-25-FL/FL
TAS 22	32	TAS22 ST-32-IG/AG	TAS22 ST-32-IG/IG	TAS22 ST-32-FL/FL
TAS 22	40	TAS22 ST-40-IG/AG	TAS22 ST-40-IG/IG	TAS22 ST-40-FL/FL
TAS 22	50	TAS22 ST-50-IG/AG	TAS22 ST-50-IG/IG	TAS22 ST-50-FL/FL

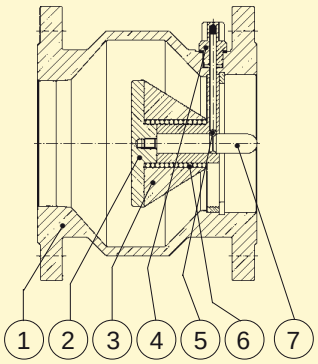
Fire protection valve

TYPE TAS 23 (DN65 – DN200)



TAS 23

DN65-200 FL/FL



1. Body	(St 52)
2. Closing cone	(stainless steel)
3. Flow cone	(aluminium)
4. Thermal sensor with safety fuse	(C 45)
5. Ball	(chrome-plated steel)
6. Closing spring	(stainless steel)
7. Guiding spindle	(stainless steel)

Type		DN	MOP bar	L	D	K	z	d	b	Weight
TAS 23	2½"	65	5/16	125	185	145	4	18	20	8,750
TAS 23	3"	80	5/16	125	200	160	8	18	20	10,300
TAS 23	4"	100	5/16	175	220	180	8	18	20	13,700
TAS 23	5"	125	5/16	175	250	210	8	18	20	20,750
TAS 23	6"	150	5/16	200	285	240	8	22	20	26,300
TAS 23	8"	200	5/16	200	340	295	12	22	20	37,500

Type	DN	Catalogue No.
TAS 23	65	TAS23 ST-65-FL/FL
TAS 23	80	TAS23 ST-80-FL/FL
TAS 23	100	TAS23 ST-100-FL/FL
TAS 23	125	TAS23 ST-125-FL/FL
TAS 23	150	TAS23 ST-150-FL/FL
TAS 23	200	TAS23 ST-200-FL/FL

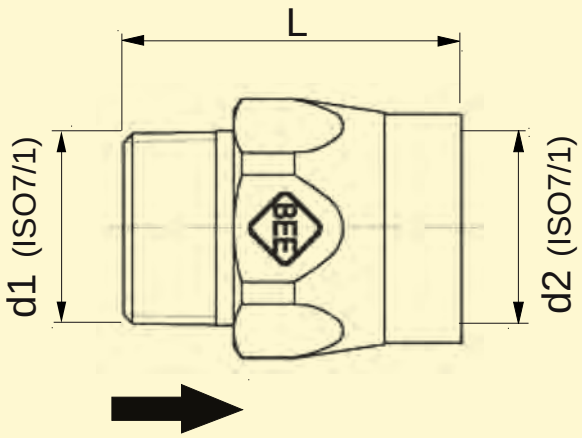
NOTES

Overflow protections

TYPE GSW 57 (DN15 – DN50)

Overflow protections are automatic safety devices that block the gas flow in the pipeline if the set maximum value of maximum gas flow is exceeded.

To recovery operation after closure of the flow is carried out automatically after the cause of the closure is removed.



Type	DN	V gas (m³/h)	V air (m³/h)	d 1	d 2	L (mm)	SW	Colour coding	Catalogue No.
GSW 57	15	2,5	2	R½"	Rp½"	52	27	yellow	GSW5715025AI
GSW 57	20	1,6	1,3	R¾"	Rp¾"	52	32	white	GSW5720016AI
GSW 57	20	2,5	2	R¾"	Rp¾"	52	32	yellow	GSW5720025AI
GSW 57	20	4	3,2	R¾"	Rp¾"	52	32	brown	GSW5720040AI
GSW 57	25	2,5	2	R1"	Rp1"	54	41	yellow	GSW5725025AI
GSW 57	25	4	3,2	R1"	Rp1"	54	41	brown	GSW5725040AI
GSW 57	25	6	4,8	R1"	Rp1"	54	41	green	GSW5725060AI
GSW 57	32	10	8	R1¼"	Rp1¼"	67	50	red	GSW5732100AI
GSW 57	40	16	8	R1½"	Rp1½"	76	60	orange	GSW5740160AI
GSW 57	50	16	12,8	R2"	Rp2"	80	70	orange	GSW5750160AI

SCOPE OF APPLICATION AND OPTIONS

For pipelines:
DN15 – DN 50

Medium:
All types of gases according to EN 437 and DVGW AB G 260/1

Operating pressure:
15 – 100 mbar

Operating temperature:
-20ºC up to +60ºC

Closing flow:
925ºC

Flow rate for closure:
2.5–16 m3/h (colour coded)

Pressure loss:
<0,5 mbar

Automatic recovery after closure:
<30l/h při 100 mbar

Indication of gas flow direction:
Arrow on fitting body

NOTES