

Product Range

ES 29/08

FRIALEN[®]



Always the right decision:

FRIALEN[®] **Safety Fittings**

The safe jointing techniques for gas, water and industrial piping made of HD-PE and PE-Xa

valid from 1st February 2008



Things worth knowing about FRIALEN®-Safety Fittings and this Product Range

Contents

To help you to find specific products easily we have included an alphabetical list arranged in product groups on pages 4-6.

Stocking status

Please note the following:

- All articles with a stock **status of 1** are **usually available ex-stock**.
- All articles with a stock **status of 2** are **manufactured to order** and hence have a **delivery time of 3 – 4 weeks**.

Packaging and pallet units

The product range shows packaging units (VE) and pallet units (PE). An order in complete VE/PE will simplify the procedure in your goods inwards department as well as your storage and ensures we can pick and deliver your order quickly.

The product range will show that we have selected sensible and fair packaging units for you.

Returns

Goods returned for credit must comply with certain criteria under our Quality Management System. We shall be glad to inform you about this separately on request. If the goods meet the criteria and their return is approved by us in advance they will be credited less 25 % inspection costs.

Inspection certificates

We charge an administration fee of **€ 15,- per item** for our inspection certificates according to **DIN EN 10 204-3.1**. You will be able to request such a certificate at the time of your order. For FRIALEN® articles we are able to provide you with a certificate where requested. In this case we would only require the component's traceability batch which you will find on the barcode or in the delivery documents. Inspection certification is archived for a period of 10 years.

Component Traceability

Each construction part has an additional barcode for traceability.

Quality Certification

FRIALEN®-Safety Fittings are subject to constant Quality checks under stringent inspection regulations, which are part of our comprehensive Quality Management System which is certified to **DIN EN ISO 9001:2000**.

The FRIALEN®-Safety Fittings range and the operation of our Technical Equipment FRIATOOLS® are matched to each other. All modifications and additions occurring in the course of continuing technical development are taken into account. Our continuous monitoring of production as part of the Quality Assurance System includes the FRIALEN®-Safety Fittings, the Technical Equipment FRIATOOLS® and the quality of the fused joint as a result of the combination of these two components. The operation and functional safety of fusion units from other manufacturers are not subject to our specifications and checks. When installing fittings please proceed in accordance with our assembly instructions and the operating instructions for the equipment in question.

DVGW Permit/Fusion capability

FRIALEN®-Safety Fittings are licensed for use with gas and water. They have been registered by **DVGW** in accordance with **VP 607/GW 335-B2** with decisions **DV-8601AU2248**, **DV-8606AU2249** and **DV-8611AU2250** and are subjected to regular outside monitoring. Certain individual registrations apply to some parts; these are listed in the instructions.

FRIALEN®-Safety Fittings can be fused to pipes of SDR stages 17.6 (s min = 2.3 mm) to 11 in accordance with DIN 8074, ISO 4437, EN 1555 and DIN EN 12201. Processing of other SDR levels on request.

FRIALEN® saddle parts/valves up to d 63 may only be processed using pipes up to SDR 11.

Pipes made of raw material types LD-PE, PE 50, PE 63, PE 80, PE 100 with a melt flow rate MFR190/05 between 0.2 - 1.7 g/10 min. can be fused as well as PE-Xa pipes with DVGW certification.

FRIALEN®-Safety Fittings comply with the requirements of DIN 16 963, Part 5 and Part 7, and also EN 1555-3 and 4 and DIN EN 12201-3 and 4. They can be worked with at ambient temperatures between -10 °C and +45 °C.

For case by case restrictions in the installation, and also when working with FRIALEN®-Safety Fittings in general, please read our assembly instructions. Our customer support staff in the sales office will also be glad to answer any questions.

Pressure loading capacity

The pressure loading capacity of FRIALEN®-Safety Fittings will be printed in SDR (Standard Dimension Ratio) stages.

$$SDR = \frac{\text{Pipe outside diameter } d}{\text{Pipe wall thickness } s}$$

The authority for this is the latest revised standards and proposed standards (DIN EN 1555, DIN EN 12201, DIN 8074 and 8075) taking into account of the new design factor C (calculation coefficient for components made of PE). Depending on the PE material used we get the following pressure stages according to the latest level of knowledge:

Moulding material: PE 100 (FRIALEN® Standard)	Water	Gas
SDR Stage	maximum working pressure in bar for C = 1,25	maximum working pressure in bar for C = 2
17	10	5
11	16	10
7,4	25	–

Cooling times

FRIALEN®-Couplers/Elbows/T-Pieces/Transition fittings

The cooling times given in the barcodes, and identified by additional letters (letter C.T.) are the times during which the fused joint should not be moved.

Longer cooling times should be allowed before pressurisation. Please read our assembly instructions on this.

FRIALEN®-Fittings/Valves/Saddles

The cooling times given in the barcodes (C.T.) are the times before tapping takes place.

After the cooling period for the fused joint has passed a pressure test can be made on the house pipe. Please read our assembly instructions on this.

FRIALEN saddle parts top loading

The indication of the dimension, including the value in brackets, marks the authorized assembly and fusion range for the saddle part. It is possible that the standard application range is limited by technical restrictions (e.g. length of drill/pipe wall thickness or tapping diameter/diameter of shut-off saddles). Suitability must be checked for other areas of application.

Technical Information

This technical information in this product range is not comprehensive. Please refer to our data sheets for detailed information. These may also be downloaded from the internet on www.frialen.com.

Technical hints for processing or use could be attached to the product and must be strictly observed.

Update/Technical Progress

All specifications are valid as at time of going to print. We reserve the right to implement changes which serve technical progress. We do not accept liability for printing mistakes.

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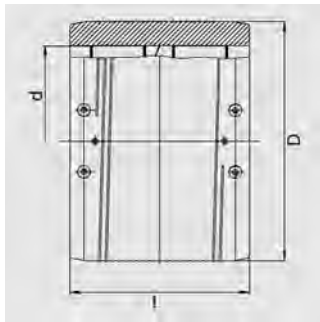
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UB

Slide-over couplers



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. From d 250 with fusion indicators for visual fusion control.

Diameter d 280 and bigger with pre-heating technology (d 280 – d 450 optional use; d 500 – d 800 required).

Special sizes on request

d 20 - d 355: RL1

d 400 - d 800: RL2

①: separate fusion zones

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
20	T-612 660	1	1	80	4,000	33	60	0.037
25	T-612 661	1	1	60	3,000	38	66	0.044
32	T-612 662	1	1	30	1,500	45	77	0.073
40	T-612 663	1	1	20	1,000	54	86	0.096
50	T-612 664	1	1	12	600	68	98	0.151
63	T-612 665	1	1	5	250	82	112	0.211
75	T-612 666	1	1	20	360	98	122	0.322
90	T-612 667	1	1	30	240	114	138	0.436
110	T-612 668	1	1	24	192	137	159	0.705
125	T-612 669	1	1	16	128	156	172	0.946
140	T-615 001	1	1	12	96	174	184	1.275
160	T-612 671	1	1	8	64	199	190	1.772
180	T-612 672	1	1	6	48	220	210	2.088
200	T-612 673	1	1	2	36	247	220	2.798
225	T-612 674	1	1	1	36	277	236	3.950
250	T-612 675	1	1	1	24	315	246	6.700
280 ^①	T-615 073	1	1	1	18	355	268	9.300
315 ^①	T-612 670	1	1	1	18	400	285	12.100
355 ^①	T-615 074	1	1	1	9	450	300	16.700
400 ^①	T-615 075	1	1	1	4	500	320	20.800
450 ^①	T-615 076	1	1	1	4	560	340	30.000
500 ^①	T-615 124	1	1	1	4	630	360	39.800

PE 100 SDR 17

Maximum working pressure 10 bar (water)/5 bar (gas)



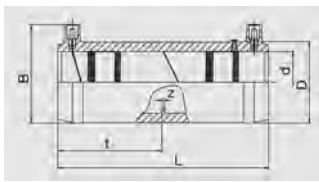
d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
560 ^①	T-615 706	1	1	1	2	630	380	24.800
630 ^①	T-615 726	1	1	1	2	710	420	36.800
710 ^①	T-615 994	1	1	1	2	800	420	48.600
800 ^①	T-616 290	1	1	1	1	900	500	65.900

NEW!

For dimensions d 110 to d 500 please refer to our product range FRIAFIT®.

FRIALONG

Long Couplers with removable center stop



The coupler with more safety aspects. With exposed heating coils for optimal heat transfer, extra large insertion depth, extra wide fusion zones plus cold zones at the end. For best possible pipe installation and tension-free fusion without holding devices.

PE 100 SDR 11

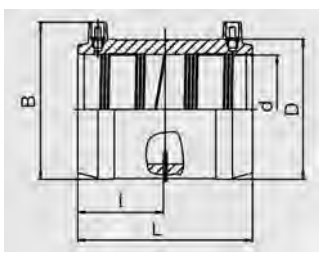
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	T-615 736	1	1	20	1,000	45	136	0.114
40	T-615 737	1	1	13	650	54	146	0.160
50	T-615 608	1	1	8	400	68	175	0.250
63	T-615 738	1	1	5	250	82	197	0.340

MB

Couplers with removable stop



Can also be used as repair couplers. With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

PE 100 SDR 11

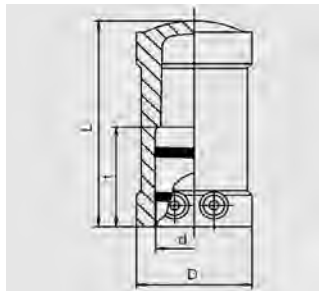
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
20	T-612 680	1	1	80	4,000	33	60	0.037
25	T-612 681	1	1	60	3,000	38	66	0.045
32	T-612 682	1	1	30	1,500	45	78	0.073
40	T-612 683	1	1	20	1,000	54	85	0.096
50	T-612 684	1	1	12	600	68	98	0.151
63	T-612 685	1	1	5	250	82	110	0.212
75	T-612 686	1	1	20	360	98	122	0.324
90	T-612 687	1	1	30	240	114	138	0.436
110	T-612 688	1	1	24	192	137	159	0.705
125	T-612 689	1	1	16	128	156	172	0.946
140	T-612 690	1	1	12	96	174	184	1.275
160	T-612 691	1	1	8	64	199	190	1.772

MV

End Caps



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end to prevent the flow of molten material, for use without holding devices. From d 180 with fusion indicators for visual fusion control.

①: also recommended as fused caps for the dome of FRIALEN®-Pressure Tapping Tees (see DAA (KIT), DAA, DAP, DAA-TL).

PE 100 SDR 11

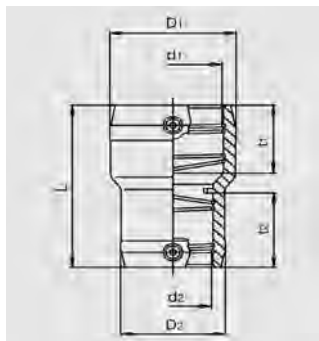
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
20	T-612 025	2	40	2,000	35	72	0.044	
25	T-612 026	2	40	2,000	40	80	0.059	
32 ^①	T-612 027	1	40	1,280	49	91	0.089	
40 ^①	T-612 028	1	25	800	58	98	0.125	
50	T-612 029	1	20	640	70	114	0.190	
63	T-612 030	1	15	480	84	117	0.266	
75	T-612 031	1	20	360	98	133	0.394	
90	T-612 032	1	30	240	117	155	0.655	
110	T-612 033	1	24	192	142	181	1.132	
125	T-612 034	1	16	128	158	186	1.375	
160	T-612 035	1	8	64	206	262	2.980	
180	T-616 183	1	6	48	225	195	2.800	
225	T-616 185	1	4	32	280	230	5.050	

MR

Electrofusion Reducers



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

PE 100 SDR 11

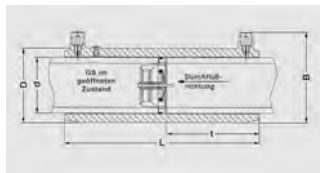
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	D ₁ /D ₂	L	Weight kg/each
32	20	T-615 386	1	40	2,000	45/ 32	88	0.055	
32	25	T-615 502	1	40	2,000	45/ 38	88	0.060	
40	20	T-615 387	1	30	1,500	54/ 32	98	0.075	
40	32	T-615 388	1	25	1,250	54/ 45	98	0.093	
50	20	T-612 069	2	16	800	68/ 32	110	0.133	
50	32	T-612 070	1	16	800	68/ 45	110	0.143	
50	40	T-612 071	1	12	600	68/ 54	110	0.142	
63	32	T-615 389	1	10	500	82/ 45	125	0.217	
63	40	T-615 390	1	8	400	82/ 54	125	0.224	
63	50	T-612 072	1	8	400	82/ 68	125	0.237	
90	50	T-615 391	1	15	270	117/ 68	160	0.485	
90	63	T-615 392	1	15	270	117/ 82	160	0.510	
110	63	T-615 393	1	10	180	142/ 82	160	0.729	
110	90	T-615 693	1	8	144	140/115	180	0.900	
125	90	T-615 694	1	8	144	155/115	200	0.980	
160	110	T-615 695	1	8	64	201/140	230	1.990	

FRIASTOPP

Long Couplers with integrated Mertik Maxitrol excess flow valve



FRIALONG long coupler with integrated SENTRY GS® safety equipment which automatically shuts down gas flow in the event of pipe damage caused e.g. by digging or tapping. Exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zones as well as cold zones preventing molten escape at the front and in the centre for processing without holding device. The **universal type Z** meets all practical requirements of the operating pressure range and the required flow quantity. Type D and Z with overflow. DVGW test certificate for Sentry GS® excess flow valve: DG-4360BO0438

PE 100 SDR 11

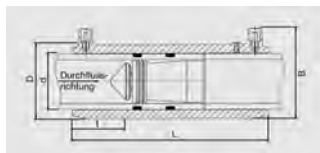
Maximum working pressure 5 bar (gas)



d	Type	Order Ref.	Quantity	Operating pressure range $p_{min} - p_{max}$	V_N	Stock-status	VE	PE	L	Weight kg/each
32	Z	T-616 187		35 mbar - 5 bar	17 - 40	1	20	1,000	136	0.140
40	Z	T-616 188		35 mbar - 5 bar	26 - 62	1	13	650	146	0.218
50	Z	T-616 189		35 mbar - 5 bar	41 - 99	1	8	400	175	0.375
63	Z	T-616 190		35 mbar - 5 bar	66 - 158	1	5	250	197	0.530
32	D	T-616 191		25 mbar - 1 bar	11 - 16	1	20	1,000	136	0.140
32	B	T-616 192		100 mbar - 5 bar	26 - 60	1	20	1,000	136	0.140
40	D	T-616 193		25 mbar - 1 bar	19 - 27	1	20	640	146	0.218
40	B	T-616 194		100 mbar - 5 bar	39 - 90	1	20	640	146	0.218
50	D	T-616 195		25 mbar - 1 bar	28 - 40	1	10	320	175	0.375
50	B	T-616 196		100 mbar - 5 bar	58 - 135	1	10	320	175	0.375
63	D	T-616 197		25 mbar - 1 bar	51 - 72	1	8	256	197	0.530
63	B	T-616 198		100 mbar - 5 bar	94 - 219	1	8	256	197	0.530

FRIASTOPP

Long Couplers with integrated Pipelife Gas-Stop™ system



FRIALONG long coupler with integrated Gas-Stop™ safety equipment which automatically shuts down gas flow in the event of pipe damage caused e.g. by digging or tapping. Exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zones as well as cold zones preventing molten escape at the front and in the centre for processing without holding device. The universal type U meets all practical requirements of the operating pressure range and the required flow quantity. Type A/D and U_{UE} with overflow. DVGW test certificate for Gas-Stop™: DG-4360BP0060

PE 100 SDR 11

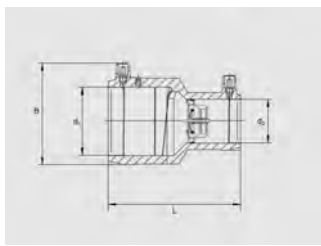
Maximum working pressure 5 bar (gas)



d	Type	Order Ref.	Quantity	Operating pressure range $p_{min} - p_{max}$	V_N	Stock-status	VE	PE	L	Weight kg/each
32	U	T-616 199		35 mbar - 5 bar	15 - 35	1	40	1,280	136	0.140
32	U_{UE}	T-616 200		35 mbar - 5 bar	15 - 35	1	40	1,280	136	0.140
50	U	T-616 201		35 mbar - 5 bar	35 - 80	1	20	640	175	0.351
50	U_{UE}	T-616 202		35 mbar - 5 bar	35 - 80	1	20	640	175	0.351
63	U	T-616 203		35 mbar - 5 bar	55 - 120	1	12	384	197	0.558
63	U_{UE}	T-616 204		35 mbar - 5 bar	55 - 120	1	12	384	197	0.558
32	A/D	T-616 205		25 mbar - 1 bar	10 - 14	1	40	1,280	136	0.140
32	B	T-616 206		150 mbar - 5 bar	20 - 45	1	40	1,280	136	0.140
50	A/D	T-616 207		25 mbar - 1 bar	25 - 35	1	20	640	175	0.351
50	B	T-616 208		150 mbar - 5 bar	48 - 112	1	20	640	175	0.351
63	A/D	T-616 209		25 mbar - 1 bar	40 - 55	1	12	384	197	0.558
63	B	T-616 210		150 mbar - 5 bar	75 - 180	1	12	384	197	0.558

MR-STOPP

Electrofusion Reducers with integrated Mertik Maxitrol excess flow valve



Reducer MR with integrated SENTRY GS® safety equipment which automatically shuts down gas flow in the event of pipe damage caused e.g. by digging or tapping. Exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zones as well as cold zones preventing molten escape at the front and in the centre for processing without holding device. The **universal type Z** meets all practical requirements of the operating pressure range and the required flow quantity. Type D and Z with overflow. DVGW test certificate for Sentry GS® excess flow valve:
DG-4360BO0438

PE 100 SDR 11

Maximum working pressure Type Z: 5 bar, Type D: 1 bar (gas)



d ₁	d ₂	Type	Order Ref.	Quantity	Operating pressure range p _{min} - p _{max}	V _N	Stock-status	VE	PE	L	Weight kg/each
50	40	Z	T-616 218		35 mbar - 5 bar	26 - 62	1	12	600	110	0.210
50	40	D	T-616 237		25 mbar - 1 bar	19 - 27	1	12	600	110	0.210
63	32	Z	T-616 219		35 mbar - 5 bar	17 - 40	1	10	500	125	0.240
63	32	D	T-616 238		25 mbar - 1 bar	11 - 16	1	10	500	125	0.240
63	40	Z	T-616 220		35 mbar - 5 bar	26 - 62	1	8	400	125	0.290
63	40	D	T-616 239		25 mbar - 1 bar	19 - 27	1	8	400	125	0.290
63	50	Z	T-616 221		35 mbar - 5 bar	41 - 99	1	8	400	125	0.370
63	50	D	T-616 240		25 mbar - 1 bar	28 - 40	1	8	400	125	0.360

WS11°

I/A Elbows 11°



For universal and stress free changes in direction even in restricted spaces. Optimum flexibility through I/A construction type. Elbows of 22°, 33° etc. can be set up thanks to multiple application. Coupler side with exposed heating coils for optimum heat transfer, large insertion depth and wide fusion zone. Spigot for processing with FRIALEN® MB or UB couplers.

PE 100 SDR 11

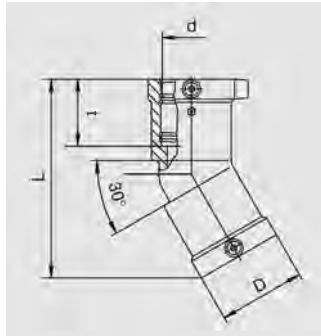
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
110	T-616 139		1	8	144	141	235	0.960
125	T-616 140		1	5	90	160	250	1.300
160	T-616 141		1	8	64	200	295	2.350
180	T-616 142		1	4	32	226	310	3.140
225	T-616 143		1	1	18	280	350	5.280

W30°

Elbows 30°



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)

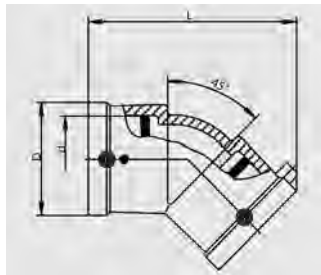


d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
90	T-615 272	1	1	8	144	115	224	0.777
110	T-615 273	1	1	6	108	142	252	1.255
125	T-615 274	1	1	4	72	158	270	1.639
160	T-615 340	1	1	5	40	199	350	3.868
180	T-616 261	1	1	3	24	229	390	4.800
200	T-616 262		available from 2. quarter 2008			254	412	6.660
225	T-616 263		available from 2. quarter 2008			281	456	8.560

NEW!
NEW!

W45°

Elbows 45°



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)

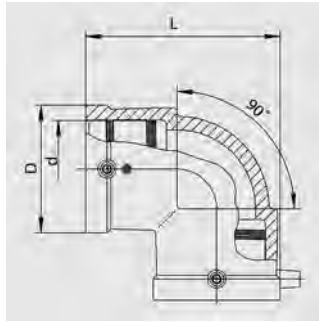


d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	T-612 092	1	1	20	1,000	49	106	0.093
40	T-612 094	1	1	13	650	58	128	0.143
50	T-612 096	1	1	10	500	70	146	0.210
63	T-612 098	1	1	4	200	84	158	0.297
75	T-612 100	1	1	14	252	96	198	0.516
90	T-612 102	1	1	8	144	115	232	0.806
110	T-612 104	1	1	10	80	138	265	1.320
125	T-612 106	1	1	10	80	157	279	1.771
160	T-615 275	1	1	4	32	207	377	4.408
180	T-615 687	1	1	3	24	228	382	4.606
200	T-616 264		available from 2. quarter 2008			254	415	6.760
225	T-615 688	1	1	1	8	280	450	8.290

NEW!

W90°

Elbows 90°



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)

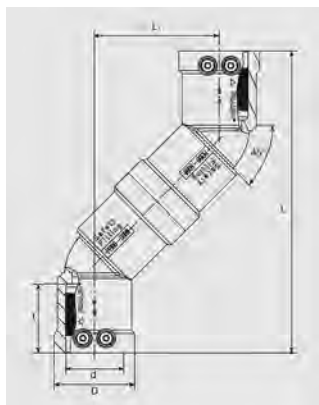


d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each	
25	T-612 091	1	1	30	1,500	37	73	0.058	
32	T-612 093	1	1	20	1,000	43	82	0.072	
40	T-612 095	1	1	13	650	53	96	0.112	
50	T-612 097	1	1	9	450	66	113	0.190	
63	T-612 099	1	1	4	200	83	136	0.340	
75	T-612 101	1	1	12	216	96	170	0.595	
90	T-612 103	1	1	6	108	115	202	0.953	
110	T-612 105	1	1	10	80	138	234	1.563	
125	T-612 107	1	1	8	64	157	254	2.029	
160	T-615 276	1	1	3	24	207	329	4.845	
180	T-615 689	1	1	3	24	228	354	5.761	
200	T-616 265	available from 2. quarter 2008					254	392	8.560
225	T-615 690	1	1	1	8	280	430	10.220	

NEW!

WET

Swan Neck Bend



Compact part for the connection of pipes which are not aligned and for the connection of service lines with DAA pressure valves when parallel-installing two mains with identical overlap height. With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices.

PE 100 SDR 11

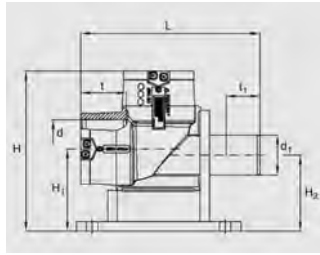
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	L ₁	Weight kg/each
32	T-616 051	1	1	15	750	49	177	73	0.220
40	T-616 052	1	1	15	480	58	215	89	0.330
50	T-616 053	1	1	15	270	70	242	100	0.505
63	T-616 054	1	1	10	180	84	256	106	0.695

WF 90°

90° Elbow with base unit



Compact part in HDPE to integrate a hydrant next to the mains. Base unit and elbow make up a homogenous unit, base plate can be mounted onto base. With spigot outlet d 63/SDR 11 for house connections avoiding stagnation at hydrants. For hydrants with flange connection we recommend our Full Faced Flanges EFL. The elbow with separate fusion zones enables simple and tension free fusion. With exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.

①: see FLR flange reducer for connection to DN80

PE 100 SDR 11

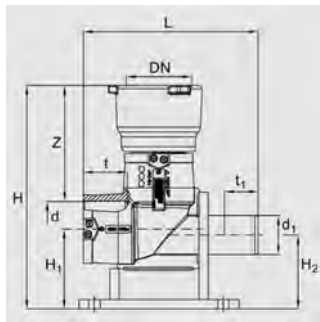
Maximum working pressure 16 bar (water)



d	d ₁	Order Ref.	Quantity	Stock-status	VE	PE	H	L	Weight kg/each
90	63	T-615 989		1	3	54	253	293	2.170
110 ^①	63	T-615 998		1	6	48	293	346	2.880

WFGB

90° Elbow with base unit and HD-PE/GGG adapter for connection of BAIO® spigot hydrant



For connection of hydrant with spigot according to BAIO® system as alternative to flange connection. Compact construction part manufactured from FRIALEN® 90° elbow with base (see WF 90°) and BAIO® coupler connection made from ductile cast iron including sealing ring. BAIO® cast coupler anchored in PE moulded part. Cannot be released or rotated. Please observe specific processing instructions for "BAIO®" connection system.

PE 100 SDR 11

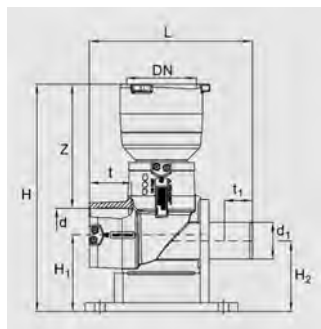
Maximum working pressure 16 bar (water)



d/DN	d ₁	Order Ref.	Quantity	Stock-status	VE	PE	L	H	Weight kg/each
110/80	63	T-616 150		2	3	12	346	418	8.340

WFGN

90° Elbow with base unit and HD-PE/GGG adapter for connection of NOVO-Sit® spigot hydrant



For connection of hydrant with cast spigot. Compact construction part manufactured from FRIALEN® 90° elbow with base (see WF 90°) and NOVO-Sit® coupler connection made from ductile cast iron including Tyton sealing ring and NOVO-Sit® ring for push prevention. NOVO-Sit® cast coupler anchored in PE moulded part. Cannot be released or rotated. Please observe specific processing instructions for “NOVO-Sit®” connection system.

PE 100 SDR 11

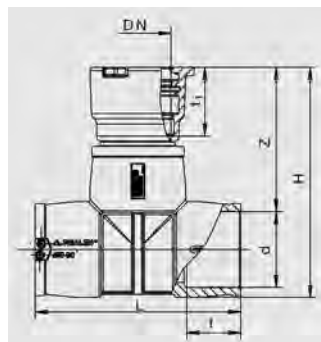
Maximum working pressure 16 bar (water)



d/DN	d ₁	Order Ref.	Quantity	Stock-status	VE	PE	L	H	Weight kg/each
110/80	63	T-616 151	2	2	3	12	346	424	8.460

TGB

T-Pieces with HD-PE/GGG adapter for connection of BAIO® spigot hydrant



For connection of hydrant or cut-off valves with spigot according to the BAIO® system as an alternative to flange connection. Compact construction part manufactured from FRIALEN® T-piece and BAIO® coupler connection at outlet made from ductile cast iron including sealing ring. BAIO® cast coupler anchored in PE moulded part. Cannot be released or rotated. T-piece with exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zone plus cold zone at the end and in the middle to prevent the flow of molten material, for use without holding devices. Please observe specific processing instructions for “BAIO®” connection system. For below floor hydrants the safety device against dirt and disortion for BAIO spigots is required.

PE 100 SDR 11

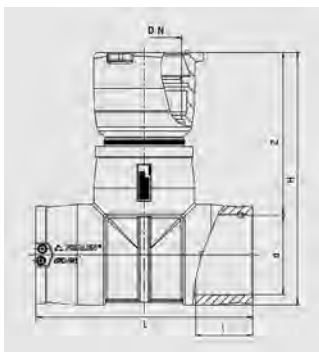
Maximum working pressure 16 bar (water)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	L	H	Weight kg/each
110/80	T-616 147	2	2	4	16	302	346	7.530
125/80	T-616 148	2	2	3	12	314	361	8.300
160/80	T-616 149	2	2	2	8	390	380	12.000

TGN

T-Pieces with HD-PE/GGG adapter for connection of NOVO-Sit® spigot hydrant



For connection of hydrant or cut-off valves with cast spigot. Compact construction part manufactured from FRIALEN® T-piece and NOVO-Sit® coupler connection at outlet made from ductile cast iron including Tyton sealing ring and NOVO-Sit® ring for push prevention. NOVO-Sit® cast coupler anchored in PE moulded part. Cannot be released or rotated. T-piece with exposed heating coils for optimum heat transfer, large insertion depth, wide fusion zone plus cold zone at the end and in the middle to prevent the flow of molten material, for use without holding devices. Please observe specific processing instructions for NOVO-Sit® connection system.

PE 100 SDR 11
Maximum working pressure 16 bar (water)

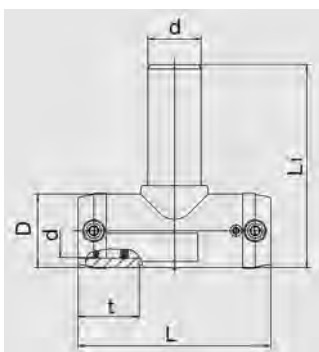


NEW!

d/DN	Order Ref.	Quantity	Stock-status	VE	PE	L	H	Weight kg/each
90/80	T-616 300	2		1	50	245	315	6.610
110/80	T-616 144	2		4	16	302	352	7.630
125/80	T-616 145	2		3	12	314	367	8.400
160/80	T-616 146	2		2	8	390	422	13.635

TA (KIT)

T-Pieces with extra long outlet spigot in kit version



Straight connector with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Extra long outlet spigot dimensioned for 2 fusion operations (if necessary).

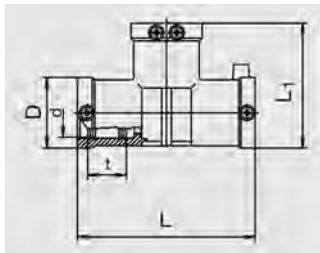
PE 100 SDR 11
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	L ₁	Weight kg/each
32	T-612 161	1		30	540	44	116	131	0.173
40	T-612 162	1		20	360	53	146	151	0.299
50	T-612 163	1		10	180	67	175	186	0.494
63	T-612 164	1		5	90	81	197	203	0.790

T

T-Pieces



With exposed heating coils for optimal heat transfer on all 3 sides, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Straight passage fusible in one-step, therefore a total of only two fusions necessary.

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)

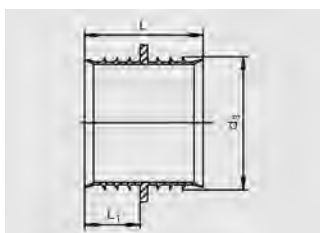
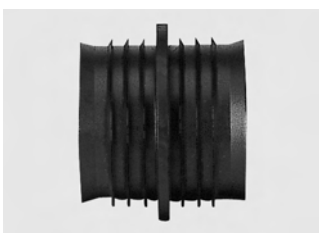


d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	L ₁	Weight kg/each
75	T-612 165		1	8	144	96	278	187	0.980
90	T-612 166		1	10	80	117	305	211	1.647
110	T-612 167		1	6	48	142	355	248	2.580
125	T-612 168		1	5	40	160	384	272	3.520
160	T-615 277		1	3	24	200	430	315	5.820
180	T-615 691		1	2	16	228	480	354	7.900
200	T-616 266		available from 2. quarter 2008			251	550	400	11.060
225	T-615 692		1	1	8	280	580	430	13.990

NEW!

RW

Repair Sleeves



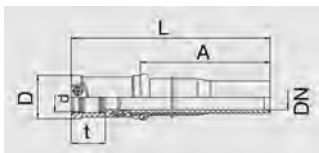
For the repair of house water connection pipes in the depressurised state. Prevents the ingress of water into the fused area of the FRIALEN® MB or UB couplers. Measure d means: Repair Sleeves for pipe d xy. **Suitable only for pipes SDR 11.**



d	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	L	L ₁	Weight kg/each
32	T-615 127		1	50	4500	27.0	35	16	0.004
40	T-615 128		1	50	4,500	34.0	35	16	0.005
50	T-615 129		1	50	4,500	42.0	35	16	0.007
63	T-615 130		1	40	3,600	52.5	47	22	0.012

USTR

Transition Fittings HD-PE/Steel



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material, for use without holding devices. Steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in gas systems. Steel pipe sockets marked by restrutting (for use with gas up to 10 bar).

Registered by DVGW under registration nos. DV-7501AU2256, DV-7501AU2257 and DV-7501AU2258.

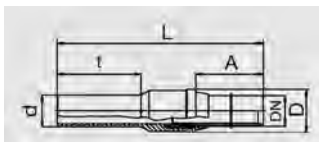
PE 100 SDR 11
Maximum working pressure 10 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
25/20	T-612 744	1	1	20	600	40	376	0.835
32/25	T-612 780	1	1	15	450	47	388	1.185
40/32	T-612 781	1	1	10	300	58	396	1.604
50/40	T-612 782	1	1	8	240	70	409	2.100
63/50	T-612 783	1	1	6	180	84	410	2.720
75/65	T-612 789	1	1	4	120	98	425	4.200
90/80	T-612 784	1	1	1	84	118	397	5.225
110/100	T-612 785	1	1	1	54	143	420	8.380
125/100	T-612 786	1	1	1	46	158	425	8.800
160/150	T-612 787	1	1	1	24	197	484	16.830
180/150	T-615 030	1	1	1	18	227	500	21.250
200/200	T-612 795	1	1	1	12	267	481	27.020
225/200	T-612 370	1	1	1	11	282	459	27.350

USTRS

Transition Fittings HD-PE/Steel (Spigot fittings)



Compact part. HD-PE end with fused on ends for use with FRIALEN®-couplers MB or UB. Steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. Little insulating work due to injection moulded protective tube. For use in gas systems. Steel pipe sockets marked by restrutting (for use with gas up to 10 bar). Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

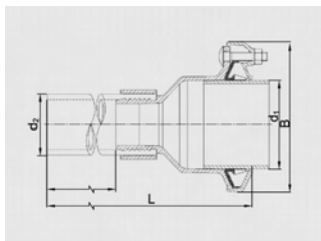
PE 100 SDR 11
Maximum working pressure 10 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32/25	T-615 475	1	1	15	450	48.5	465	1.185
40/32	T-615 476	1	1	9	270	57.5	500	1.604
50/40	T-615 477	1	1	8	240	68.5	520	2.400
63/50	T-615 478	1	1	6	180	82.5	540	2.684

FGPA

FRIAGRIP® PE-Adapter



Tension-proof adapter between pipes of different materials (steel, cast iron, ductile cast iron, fibre cement**, PVC) and HD-PE in civil engineering. No internal supporting sleeve required. Fusion end PE100, SDR11. Housing and second ring made from ductile cast iron, Rilsan® corrosion protection. Screws and nuts in stainless steel. A gripping system for all pipe materials: Azetal holding segment, Azetal gripping segment corundum coated. Sealing material NBR. Suitable for **diameter tolerances of max 44 mm**. Possible angling of pipes to max 4jã.

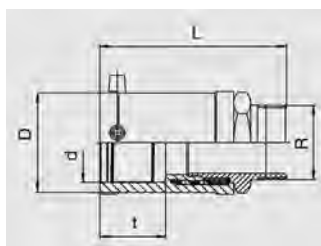
*) Tension proof water: ¡Ü DN 150 PN 16, > DN 150 PN 10/tension proof gas: PN 5
 **) With fibre cement pipes tension proofness cannot be guaranteed.



DN	d ₁	d ₂	Order Ref.	Quantity	Stock-status	L	L ₁	B	t _{min}	t _{max}	Weight kg/each
80	85.7-107.0	90	671 005		1	657.5	420	211.5	70	105	6.800
100	107.2-133.2	110	671 007		1	689.0	400	277.0	90	120	12.000
100	107.2-133.2	125	671 008		1	682.0	400	277.0	90	120	12.700
125	132.2-160.2	110	671 009		2	703.0	390	304.0	90	125	13.500
125	132.2-160.2	125	671 010		2	697.0	390	304.0	90	125	14.200
150	158.2-192.2	160	671 011		1	711.5	380	336.0	95	140	18.800
150	158.2-192.2	180	671 012		1	708.5	380	336.0	95	140	23.800
200	218.1-256.0	225	671 015		1	725.0	370	417.0	120	155	32.000

USTN

Transition Fittings HD-PE/Steel with male thread



Compact part. HDPE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Steel end permanently anchored in the HDPE. Self sealing patented sealing geometry **without elastomer seal**. For use in gas systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

Other thread sizes on request

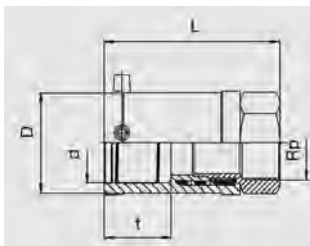
PE 100 SDR 11
Maximum working pressure 5 bar (gas)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
20	½"	T-612 578		1	40	3,600	35	95	0.150
32	1"	T-612 580		1	20	1,800	47	119	0.330
40	1 ¼"	T-612 582		1	20	1,000	58	131	0.530
50	1 ½"	T-612 584		1	15	750	70	146	0.700
63	2"	T-612 586		1	10	500	84	152	1.050

USTM

Transition Fittings HD-PE/Steel with female thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in gas systems.
Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

Other thread sizes on request

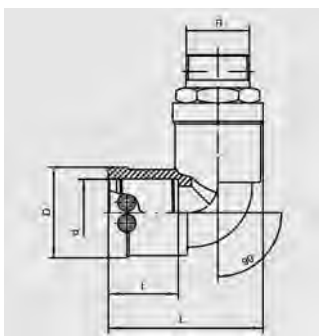
PE 100 SDR 11
Maximum working pressure 5 bar (gas)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	1"	T-612 570		1	20	1,800	47	112	0.337
40	1"	T-612 571		1	20	1,000	58	121	0.605
40	1 ¼"	T-612 572		1	20	1,000	58	121	0.500
50	1 ½"	T-612 574		1	15	750	70	136	0.650
63	2"	T-612 576		1	10	500	84	141	1.010

WUSTN 90°

Transition Elbows 90° HD-PE/Steel with male thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in gas systems.
Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

Other thread sizes on request

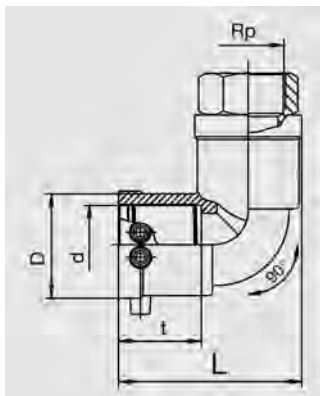
PE 100 SDR 11
Maximum working pressure 5 bar (gas)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
40	1 ¼"	T-612 602		1	15	750	58	102	0.560
50	1 ½"	T-612 604		1	10	500	70	118	0.770
63	2"	T-612 606		1	10	320	84	128	1.130

WUSTM 90°

Transition Elbows 90° HD-PE/Steel with female thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in gas systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

Other thread sizes on request

PE 100 SDR 11

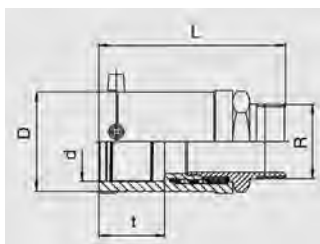
Maximum working pressure 5 bar (gas)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	1"	T-612 610		1	20	1,000	47	85	0.368
40	1"	T-612 611		2	15	750	58	102	0.650
40	1 ¼"	T-612 612		1	15	750	58	102	0.540
50	1 ½"	T-612 614		1	10	500	70	118	0.705
63	2"	T-612 616		1	10	320	84	128	1.115

MUN

Transition Fittings HD-PE/Brass with male thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Brass end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in water systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257.

Standard: Brass. Other materials on request

Other thread sizes on request

PE 100 SDR 11

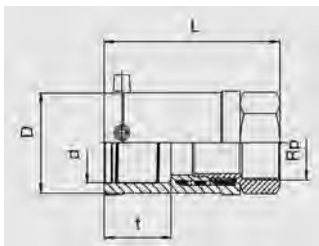
Maximum working pressure 16 bar (water)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
20	½"	T-612 710		1	40	3,600	35	91	0.120
25	¾"	T-612 711		1	30	2,700	40	99	0.210
32	1"	T-612 712		1	20	1,800	47	112	0.300
32	1 ¼"	T-612 709		1	20	1,800	47	120	0.360
32	1 ½"	T-612 698		1	15	1,350	47	121	0.380
40	1"	T-612 721		1	20	1,000	58	123	0.480
40	1 ¼"	T-612 713		1	20	1,000	58	126	0.460
40	1 ½"	T-612 718		1	20	1,000	58	127	0.520
40	2"	T-612 725		1	20	1,000	58	132	0.750
50	1"	T-612 719		1	15	750	70	134	0.580
50	1 ¼"	T-612 716		1	15	750	70	136	0.610
50	1 ½"	T-612 714		1	15	750	70	137	0.590
50	2"	T-612 706		1	15	750	70	147	0.800
63	1 ¼"	T-612 722		1	10	500	84	138	0.910
63	1 ½"	T-612 717		1	10	500	84	137	0.940
63	2"	T-612 715		1	10	500	84	142	0.940
75	2"	T-612 694		1	10	320	98	165	1.470
75	2 ½"	T-612 695		1	10	320	98	167	1.490

MUM

Transition Fittings HD-PE/Gunmetal with female thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Gunmetal end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in water systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257. Standard: Gunmetal. Other materials on request

Other thread sizes on request

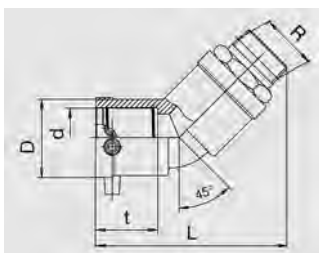
PE 100 SDR 11
Maximum working pressure 16 bar (water)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	1"	T-612 595	1	1	20	1,800	47	112	0.330
40	1 ¼"	T-612 596	1	1	20	1,000	58	121	0.470
50	1 ½"	T-612 692	1	1	15	750	70	136	0.690
63	1 ½"	T-612 708	1	1	10	500	84	141	1.230
63	2"	T-612 693	1	1	10	500	84	141	1.050

WUN 45°

Transition Elbows 45° HD-PE/Brass with male thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Brass end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in water systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257. Standard: Brass. Other materials on request

Other thread sizes on request

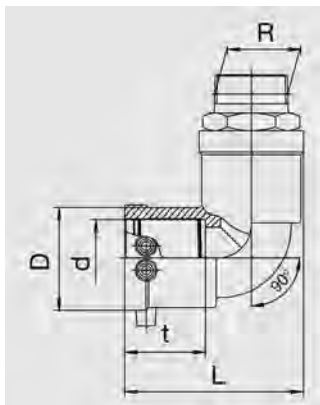
PE 100 SDR 11
Maximum working pressure 16 bar (water)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	1"	T-612 145	1	1	20	1,000	47	126	0.380
40	1 ¼"	T-612 149	1	1	15	750	58	140	0.490
40	1 ½"	T-612 139	1	1	15	750	58	142	0.560
50	1 ½"	T-612 144	1	1	10	500	70	163	0.640
63	1 ½"	T-612 147	1	1	10	320	84	176	0.980
63	2"	T-612 146	1	1	10	320	84	178	0.990

WUN 90°

Transition Elbows 90° HD-PE/Brass with male thread



Compact part. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Brass end permanently anchored in the HD-PE. Self sealing patented sealing geometry **without elastomer seal**. For use in water systems. Registered by DVGW under registration nos. DV-7501AU2256 and DV-7501AU2257. Standard: Brass. Other materials on request

Other thread sizes on request

PE 100 SDR 11

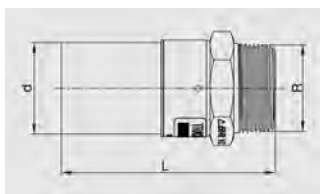
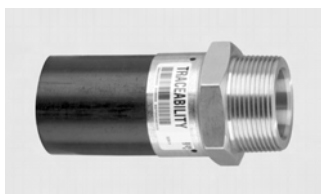
Maximum working pressure 16 bar (water)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32	1"	T-612 120	1	1	20	1,000	47	85	0.320
32	1 1/2"	T-612 140	1	1	20	1,000	47	94	0.470
40	1"	T-612 127	1	1	15	750	58	102	0.480
40	1 1/4"	T-612 122	1	1	15	750	58	102	0.520
40	1 1/2"	T-612 121	1	1	15	750	58	102	0.580
50	1"	T-612 119	1	1	10	500	70	118	0.640
50	1 1/4"	T-612 123	1	1	10	500	70	118	0.670
50	1 1/2"	T-612 124	1	1	10	500	70	118	0.680
63	1 1/2"	T-612 125	1	1	10	320	84	128	0.980
63	2"	T-612 126	1	1	10	320	84	128	1.000

UAN

Universal adapters HD-PE/Brass with male thread



Compact part. HD-PE side as pipe socket allows for assembly independent of length and homogenous fusion connection with all suitable FRIALEN® moulded parts. Brass side is connected with PE pipe socket permanently and tightly.

Other thread sizes on request

PE 100 SDR 11

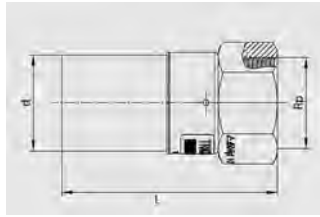
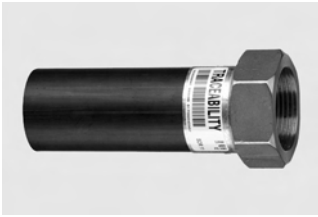
Maximum working pressure 16 bar (water)/10 bar (gas)



d	R	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
32	1"	T-616 152	1	1	30	2,700	122	36	0.230
40	1 1/4"	T-616 153	1	1	20	1,800	136	44	0.430
50	1 1/2"	T-616 154	1	1	16	1,440	118	54	0.590
63	2"	T-616 155	1	1	12	600	132	67	0.940

UAM

Universal adapters HD-PE/Brass with female thread



Compact part. HD-PE side as pipe socket allows for assembly independent of length and homogenous fusion connection with all suitable FRIALEN® moulded parts. Brass side is connected with PE pipe socket permanently and tightly.

Other thread sizes on request

PE 100 SDR 11

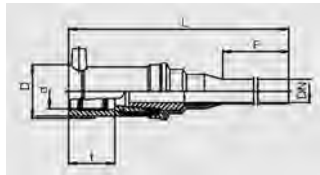
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
32	1"	T-616 156		1	30	2,700	120.5	41	0.270
40	1 ¼"	T-616 157		1	20	1,800	133.5	50	0.440
50	1 ½"	T-616 158		1	16	1,440	113.0	55	0.530
63	2"	T-616 159		1	12	600	128.0	70	0.910

UFLG

Transition Fitting for liquid gas HD-PE/Copper



Compact part as material reducer in domestic area of liquid gas supply installations for the operating of consumer installations from the gas phase. Copper-side not detachable and anchored in HD-PE with no risk of turning. Self-sealing, patented density geometry **without elastomere sealing**. Copper-side from SF Cu-F25, DIN 1787 can be connected with the copper pipe through hard-soldering (coupler soldering).

Registered by DVGW under registration no. DV-7501AU2256.

PE 100 SDR 11

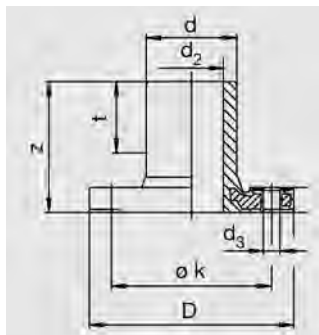
Maximum working pressure 5 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
32/20	T-615 733		1	25	750	48.5	340	0.510

EFL

Full Faced Flanges (Spigot fittings)



Flange Adaptor and flange as a factory made flange piece. Metal insert in the flange to prevent creep. Spigot end for use with FRIALEN®-couplers MB or UB. Flange connection dimensions to DIN 2501, part 1. GST sealing recommended. **Additional washers are necessary.**

①: hole PN 10.

PE 100 SDR 11

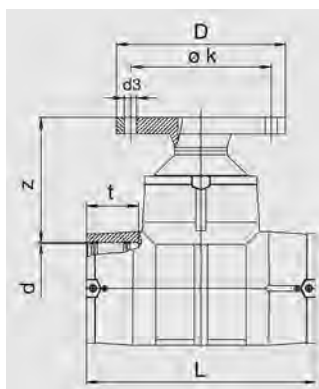
Maximum working pressure 16 bar (water)/10 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	d ₂	d ₃	Z	Ø k	Holes for screw	Weight kg/each
63/ 50	T-615 417		1	5	250	169	50.6	16.5	105	125	4	1.500
90/ 80	T-615 418		1	5	160	204	71.5	16.5	130	160	8	2.540
110/100	T-615 419		1	3	96	224	86.8	16.5	150	180	8	3.308
125/100	T-615 605		1	2	64	224	101.0	16.5	160	180	8	3.280
160/150	T-615 421		1	2	36	288	127.0	20.5	190	240	8	6.140
180/150	T-615 927		1	2	36	288	122.5	20.5	200	240	8	6.660
225/200 ^①	T-615 607		1	1	27	343	179.5	20.5	225	295	8	9.100

FLT

Flange T-Piece



Compact part in HD-PE. Factory made combination made from FRIALEN®-T-Piece, Reducer and Full Faced Flanges (fixed flange). T-Piece with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without holding devices.

No inner fusion ridge on the fused seam of the reducer. Flange connection dimensions to DIN 2501, part 1. GST sealing recommended.

Additional washers are necessary for the flange reducer.

PE 100 SDR 11

Maximum working pressure 16 bar (water)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	d ₃	L	Z	Ø k	Holes for screw	Weight kg/each
110/80	T-615 590		1	4	32	204	16.5	355	190	160	8	4.880
125/80	T-615 591		1	3	24	204	16.5	384	190	160	8	5.550
160/80	T-615 592		1	2	16	204	16.5	430	210	160	8	8.050
180/80	T-615 910		1	1	8	204	16.5	480	210	160	8	10.000

PE 100 SDR 17

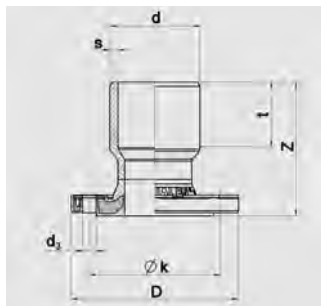
Maximum working pressure 10 bar (water)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	d ₃	L	Z	Ø k	Holes for screw	Weight kg/each
225/80	T-616 031		1	2	4	204	16.5	580	210	160	8	15.420

FLR

Flange Reducer



Compact part manufactured by factory from HD-PE reducer and FRIALEN® EFL Full Face Flanges. Specially suited for the horizontal connection of flange valves to FRIALEN T-pieces T for reduced branches in DN 80 and DN 100. For the vertical connection of hydrants using our elbow including foot support WF 90° or the T-piece T, the overlapping height must be taken into consideration. No internal welding bead at the weld seam of the reduction. Flange connection measurements according to DIN 2501, part 1. We recommend GST seals. **Additional washers are necessary.**

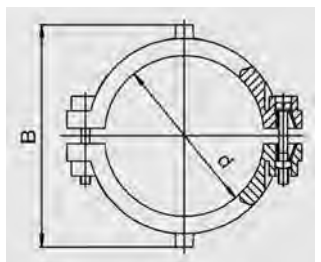
PE 100 SDR 11
Maximum working pressure 16 bar (water)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	d ₃	Z	Ø k	Holes for screw	Weight kg/each
110/80	T-616 065		1	3	96	204	16.5	161	160	8	3.900
160/100	T-616 241		1	2	64	224	16.5	180	180	8	4.350
225/100	T-616 242		1	2	36	224	16.5	270	180	8	5.750

RS

Reinforcing Saddle



Compact part manufactured from 2 HD-PE saddles for the repair of minor pipe damage **with no** escape of fluid. With exposed heating elements for optimal heat transfer.

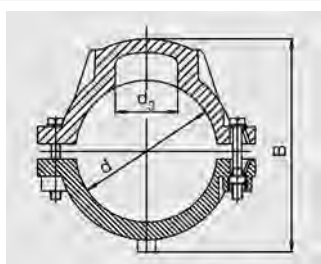
PE 100 SDR 11
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	Weight kg/each
63	T-612 519		1	20	360	0.260

VVS

Repair and Reinforcing Saddles



Compact part manufactured from 2 HD-PE saddles for the repair of minor pipe damage **with or without** escape of fluid. In order to avoid discharge of media the leak has to be sealed with a separate plug ($\leq d_3$). With exposed heating elements for optimal heat transfer.

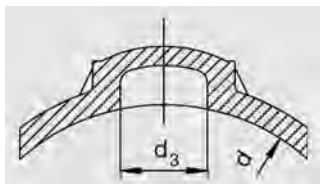
PE 100 SDR 11
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
90	T-615 164		1	24	192	50	0.920
110	T-615 165		1	16	128	50	1.193
125	T-615 166		1	15	120	50	1.363
160	T-615 168		1	10	80	50	1.666
180	T-615 169		1	6	48	50	1.805
200	T-615 170		1	5	40	50	1.823
225	T-615 171		1	5	40	50	1.874

VSC-TL

Repair Saddle Top-Loading



Suitable for **all** pipe diameters in the given range by means of the FRIALEN®-FRIATOP Clamping Unit (see Product Range FRIATOOLS®). HD-PE saddle for the repair of minor pipe damage **with or without** escape of fluid. In order to avoid discharge of media the leak has to be sealed with a separate plug ($\leq d_3$). With exposed heating element for optimal heat transfer.

PE 100 SDR 11

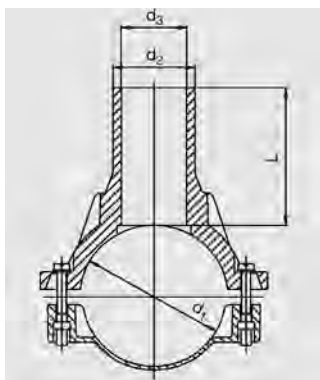
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
250-560	T-615 397	1		10	180	50	0.600

SA

Spigot Saddles



Compact part in HD-PE, saddle with exposed heating element for optimal heat transfer and outlet spigot for use with FRIALEN®-couplers MB or UB. Swarfless tapping in the depressurised state by means of commercial drilling units (we recommend Hütz & Baumgarten).

PE 100 SDR 11

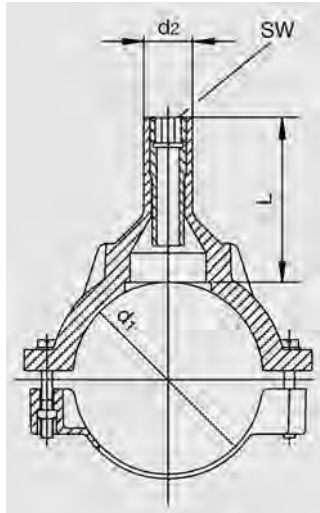
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	L	Weight kg/each
63	32	T-612 757	1		20	360	25	100	0.320
63	50	T-612 759	1		20	360	37	113	0.370
75	50	T-615 020	1		15	270	38	115	0.480
90	32	T-615 285	1		20	160	21	103	0.695
90	63	T-612 819	1		20	160	50	103	0.715
110	32	T-615 334	1		12	96	21	109	0.880
110	50	T-615 031	1		12	96	38	109	0.905
110	63	T-612 760	1		12	96	49	109	0.945
110	90	T-615 411	1		12	96	70	115	0.950
125	32	T-615 087	1		12	96	21	109	0.990
125	63	T-612 761	1		12	96	47	109	1.050
125	90	T-615 412	1		12	96	70	116	1.140
125	110	T-615 584	1		10	80	86	116	1.150
160	32	T-612 886	1		6	48	21	126	1.500
160	63	T-612 762	1		6	48	47	140	1.600
160	90	T-615 413	1		2	36	70	140	1.700
160	110	T-615 739	1		2	36	86	140	1.800
160	125	T-615 585	1		2	36	98	140	1.900
180	63	T-612 763	1		6	48	47	109	1.245
180	90	T-615 414	1		2	36	70	116	1.820
180	110	T-615 948	1		2	36	86	136	1.960
180	125	T-615 740	1		2	36	98	141	2.087
200	63	T-612 764	1		5	40	47	109	1.264
225	63	T-612 765	1		5	40	47	109	1.210
225	90	T-615 415	1		5	40	70	116	1.950
225	110	T-616 044	1		5	40	86	140	2.070
225	125	T-616 045	1		4	32	97	146	2.240
225	160	T-616 046	1		4	32	125	157	2.610

SAB

Spigot Saddles with integral drill



Compact part in HD-PE, saddle with exposed heating element for optimal heat transfer and outlet spigot for use with FRIALEN®-couplers MB or UB. Swarfless tapping in the depressurised state by means of the integral drill.

PE 100 SDR 11

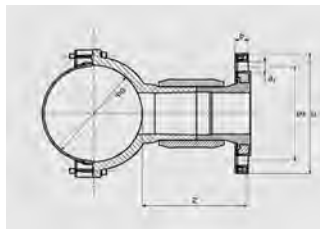
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
63	32	T-615 091		1	20	360	100	17	0.390
90	32	T-615 092		1	20	160	89	17	0.775
110	32	T-615 093		1	12	96	109	17	0.972
125	32	T-615 094		1	12	96	109	17	1.070
160	32	T-615 095		1	6	48	109	17	1.265

SAFL

Spigot Saddles with flange outlet



Compact part in HD-PE. Manufactured combination of FRIALEN® spigot saddle, coupler and FRIALEN® Full Faced Flanges EFL (compact flange). Saddle with exposed heating coil for optimum heat transfer. Tapping in pressure free condition or, using an additional isolating valve, under operating pressure by means of standard tapping equipment (we recommend Hütz & Baumgarten). Flange connection measurements according to DIN 2501, part 1. We recommend GST gaskets.

Additional washers are necessary for the flange reducer.

PE 100 SDR 11

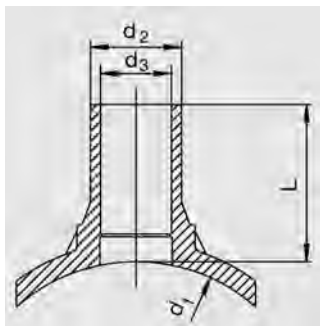
Maximum working pressure 16 bar (water)/10 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	d ₃	Z	Ø k	Holes for screw	Weight kg/each
110/80	T-616 016		1	3	54	204	16.5	180	160	8	3.735
125/80	T-616 017		1	2	36	204	16.5	180	160	8	3.940
160/80	T-616 018		1	2	36	204	16.5	180	160	8	4.290
180/80	T-616 019		1	2	36	204	16.5	180	160	8	4.570
225/80	T-616 020		1	2	16	204	16.5	180	160	8	4.720
125/100	T-616 021		1	2	36	224	16.5	180	180	8	4.800
160/100	T-616 022		1	2	36	224	16.5	180	180	8	5.270
180/100	T-616 023		1	2	36	224	16.5	180	180	8	5.585
225/100	T-616 024		1	2	16	224	16.5	180	180	8	5.690

SA-TL

Spigot Saddles Top-Loading



Suitable for **all** pipe diameters in the given range by means of the FRIALEN®-FRIATOP Clamping Unit (see Product Range FRIATOOLS®). Compact part in HD-PE. Saddle with exposed heating element for optimal heat transfer and outlet spigot for use with FRIALEN®-couplers MB or UB. Swarfless tapping in the depressurised state by means of commercial drilling units (we recommend Hütz & Baumgarten).

d₃ = maximum Tapping diameter in mm

PE 100 SDR 11

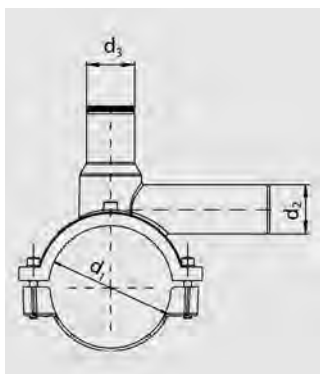
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	L	Weight kg/each
250-560	32	T-615 465		1	5	90	20	109	0.621
250-560	63	T-615 466		1	5	90	46	109	0.676
250-560	90	T-615 850		1	5	90	60	111	0.770

DAA (KIT)

Pressure Tapping Tees with extra long outlet spigot in kit version



For leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. End plugs with internal O-ring seal. Fusible dome (d, 63 and 75 = MV d 40; d₁ > 75 = K). Pressure test possible before tapping. For pressure test adapter and actuating key see Product Range FRIATOOLS®. Length of the outlet spigots dimensioned for 2 fusion operations (if necessary).

Ⓢ: with electrofusion reducers d 32/20, d 32/25, d 40/32 or d 50/40.

PE 100 SDR 11

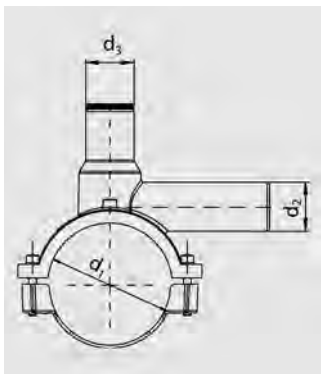
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
63	32	T-615 649		1	16	288	40	0.585
75	32 [Ⓢ]	T-615 651		1	12	216	40	0.728
90	20 [Ⓢ]	T-615 653		2	12	96	50	1.166
90	25 [Ⓢ]	T-615 654		2	12	96	50	1.171
90	32	T-615 655		1	12	96	50	1.184
90	40 [Ⓢ]	T-615 656		1	12	96	50	1.304
110	32	T-615 661		1	10	80	50	1.356
110	40 [Ⓢ]	T-615 662		1	10	80	50	1.500
110	50 [Ⓢ]	T-615 663		1	10	80	50	1.238
125	32	T-615 667		1	10	80	50	1.534
125	40 [Ⓢ]	T-615 668		1	10	80	50	1.657
160	20 [Ⓢ]	T-615 672		2	6	48	50	1.936
160	25 [Ⓢ]	T-615 673		2	6	48	50	1.941
160	32	T-615 674		1	6	48	50	1.954
160	40 [Ⓢ]	T-615 675		1	6	48	50	2.081

DAA

Pressure Tapping Tees with extra long outlet spigot



For leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. End plug with internal O-ring seal. Fusible dome (d_1 40 = MV d 32; d_1 50, 63 and 75 = MV d 40; $d_1 > 75$ = K). Leakage check possible before tapping. For pressure test adapter and actuating key see Product Range FRIATOOLS®. Length of the outlet spigots dimensioned for 2 fusion operation (if necessary).

PE 100 SDR 11

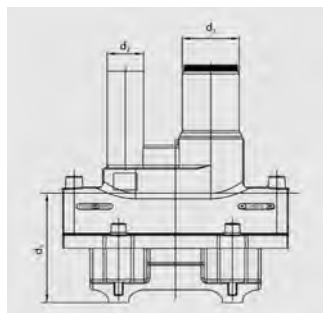
Maximum working pressure 16 bar (water)/10 bar (gas)



d_1	d_2	Order Ref.	Quantity	Stock-status	VE	PE	d_3	Weight kg/each
40	20	T-612 630		2	20	640	32	0.300
50	25	T-612 702		2	20	360	40	0.420
50	32	T-615 080		1	20	360	40	0.443
63	20	T-612 631		1	16	288	40	0.498
63	25	T-612 633		1	16	288	40	0.504
63	32	T-612 632		1	16	288	40	0.512
63	40	T-612 623		1	16	288	40	0.530
75	40	T-612 813		1	12	216	40	0.650
90	32	T-612 634		1	12	96	50	1.050
90	50	T-612 636		1	12	96	50	1.110
90	63	T-612 701		1	12	96	50	1.230
110	32	T-612 637		1	10	80	50	1.301
110	50	T-612 638		1	10	80	50	1.356
110	63	T-612 624		1	10	80	50	1.505
125	32	T-612 649		1	10	80	50	1.460
125	50	T-612 639		1	10	80	50	1.515
125	63	T-612 309		1	10	80	50	1.615
140	50	T-615 037		2	10	80	50	1.495
160	32	T-612 641		1	6	48	50	1.880
160	50	T-612 642		1	6	48	50	1.940
160	63	T-612 650		1	6	48	50	2.030
180	32	T-612 651		1	5	40	50	1.855
180	50	T-612 644		1	5	40	50	1.920
180	63	T-612 652		1	5	40	50	1.960
200	32	T-612 654		1	5	40	50	1.825
200	50	T-612 645		1	5	40	50	1.800
200	63	T-612 659		1	5	40	50	1.883
225	32	T-612 657		1	5	40	50	1.860
225	50	T-612 646		1	5	40	50	2.040
225	63	T-612 655		1	5	40	50	2.040

DAP

Pressure Tapping Tees with parallel dome and extra long outlet spigot



For space saving horizontal installation. Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. End plugs with internal O-ring seal. Fusible dome (d₁ 63 see MV d 40; d₁ 90 - 225 see K). Pressure test possible before tapping. For pressure test adapter and actuating key see Product Range FRIATOOLS®. Length of the outlet spigots dimensioned for 2 fusion operations (if necessary).

①: max. working pressure 10 bar (water)/5 bar (gas)

PE 100 SDR 11

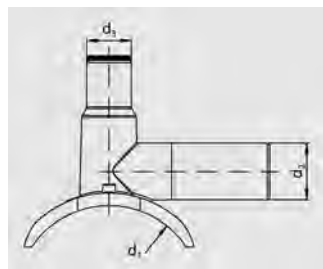
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
63	32	T-616 042		1	16	288	40	0.550
90	32 ^①	T-616 043		1	16	128	50	1.131
110	32	T-615 581		1	12	96	50	1.255
110	50	T-615 606		1	12	96	50	1.310
125	32	T-615 711		1	12	96	50	1.270
125	50	T-615 712		1	12	96	50	1.330
160	32	T-615 713		1	8	64	50	1.540
160	50	T-615 714		1	8	64	50	1.600
180	32	T-615 715		1	6	48	50	1.540
180	50	T-615 716		1	6	48	50	1.600
225	32	T-615 717		1	6	48	50	1.570
225	50	T-615 718		1	6	48	50	1.630

DAA-TL

Pressure Tapping Tee Top-Loading with extra long outlet spigot



Suitable for **all pipe** diameters in the given range by means of the FRIALEN® FRIATOP clamping unit (see Product Range FRIATOOLS®). Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. End plugs with internal O-ring seal. Fusible dome (see K). Pressure test possible before tapping. For pressure test adapter and actuating key see Product Range FRIATOOLS®. Length of the outlet spigots dimensioned for 2 fusion operations (if necessary).

Other outlet dimensions with electrofusion reducers MR

d₁ to 400 to pipes SDR 17

PE 100 SDR 11

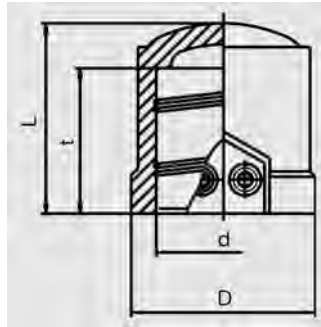
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
250-315 (400)	63	T-615 339		1	5	90	50	1.416

K

Cap for Pressure Tapping Tees



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end to prevent the flow of molten material.

PE 100 SDR 11

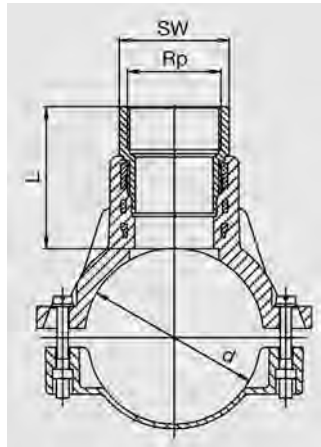
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
50	T-612 310	1		30	960	69	72	0.115

VAM-RG

Valve Tapping Saddles with HD-PE/Gunmetal adapter, female thread



Compact part in HD-PE, saddle with exposed heating element for optimal heat transfer. Gunmetal adapter permanently anchored in the HD-PE. To accept normal commercial brass valves.

As a **complete solution** we recommend our **Pressure Tapping Valve DAV**

Transition DVGW approved.
Reg. Nos. DV-7501AU2257 and DV-7501AU2258

PE 100 SDR 11

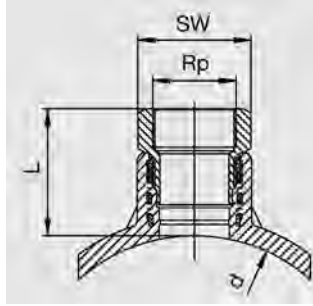
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
63	1 ¼"	T-612 794		2	20	360	73	50	0.770
63	1 ½"	T-612 743		2	20	360	76	55	0.820
75	1 ¼"	T-615 213		2	15	270	76	50	0.871
90	1 ½"	T-612 798		2	16	128	68	70	1.374
90	2"	T-612 778		2	16	128	95	70	1.560
110	1 ½"	T-612 732		1	12	96	68	70	1.540
110	2"	T-612 733		1	12	96	95	70	1.751
125	1 ½"	T-612 734		2	12	96	68	70	1.640
125	2"	T-612 735		1	12	96	95	70	1.838
160	1 ½"	T-612 728		2	8	64	68	70	1.850
160	2"	T-612 729		1	8	64	95	70	2.049
180	1 ½"	T-612 774		2	7	56	68	70	1.830
180	2"	T-612 776		2	7	56	95	70	2.030
225	2"	T-612 827		2	5	40	95	70	1.990

VAM-RG-TL

Valve Tapping Saddle Top-Loading with HD-PE/Gunmetal adapter, female thread



Suitable for **all** pipe diameters in the given range by means of the FRIALEN®-FRIATOP Clamping Unit (see Product Range FRIATOOLS®). HD-PE saddle with exposed heating element for optimal heat transfer. Gunmetal adapter permanently anchored in the HD-PE. To accept normal commercial brass valves. Maximum wall thickness for tapping must be observed.

As a **complete solution** we recommend our **Pressure Tapping Valve DAV-TL**.

Transition DVGW approved. Reg. No. DV-7501AU2258

PE 100 SDR 11

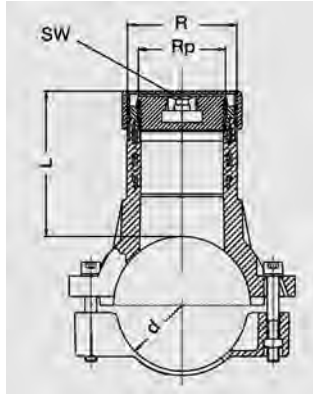
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Rp	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
250-315 (560)	2"	T-615 470		2	10	180	90	70	1.463

SPA

Shut off Saddles



Compact part suitable for normal commercial Shut off equipment. HD-PE saddle with exposed heating element for optimal heat transfer. Brass-guide thread permanently and immovably anchored in the HD-PE. Includes brass plugs with square recess. Protection against access to the dome by fusing on a FRIALEN®-SPAK (when using d 63 through cap K d 63). Thread to DIN ISO 228.

PE 100 SDR 11

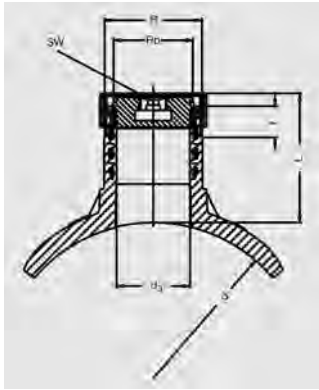
Maximum working pressure 16 bar (water)/10 bar (gas)



d	R	Rp	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
63	G 1 ½	G 1 1/8	T-612 753		1	20	360	80	19	0.610
90	G 2 ½	G 2	T-612 677		1	16	128	110	19	1.480
110	G 2 ½	G 2	T-612 750		1	12	96	110	19	1.651
125	G 2 ½	G 2	T-612 751		1	12	96	110	19	1.766
160	G 2 ½	G 2	T-612 752		1	8	64	110	19	1.860
180	G 2 ½	G 2	T-612 754		1	7	56	110	19	1.942
200	G 2 ½	G 2	T-612 755		1	6	48	110	19	1.984
225	G 2 ½	G 2	T-612 756		1	5	40	110	19	1.920

SPA-TL

Shut off Saddles Top-Loading



Suitable for **all** pipe diameters in the given range by means of the FRIALEN®-FRIATOP Clamping Unit (see Product Range FRIATOOLS®). Compact part to accept normal commercial bubble setting units. HD-PE saddle with exposed heating element for optimal heat transfer. Brass guide thread permanently anchored in the HD-PE. Includes brass plugs with a square recess. Access protection for dome through screw-cap flap supplied or through welding on of a FRIALEN®-SPAK. Thread to DIN ISO 228. Please note indications by shut-off saddles manufacturer.

PE 100 SDR 11

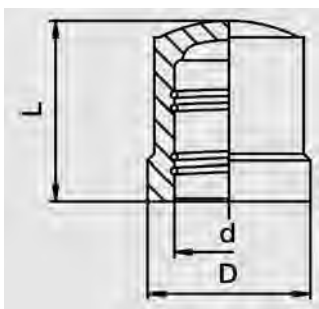
Maximum working pressure 16 bar (water)/10 bar (gas)



d	R	Rp	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
250-315 (560)	G 2 ½	G 2	T-615 395		1	18	144	110	19	1.358

SPAK

Cap for Shut off Saddles



With exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zone plus cold zones at the end to prevent the flow of molten material.

PE 100 SDR 11

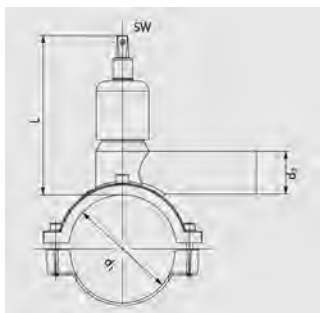
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
75	T-612 311		1	24	768	98.5	84	0.270

DAV (KIT)

Pressure Tapping Valves with extra long outlet spigot in kit version



Compact part in HD-PE with **no threaded connections**. Actuating spindle in stainless steel 1.4305. No re-insulating required. Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). **Integral drill** with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN®- EBS). Length of the outlet spigot dimensioned for 2 fusion operations (if necessary). Registered by DVGW under registration no. DV-6611AU2254 and DV-6611AU2255.

①: with electrofusion reducers MR d 50/40.

PE 100 SDR 11

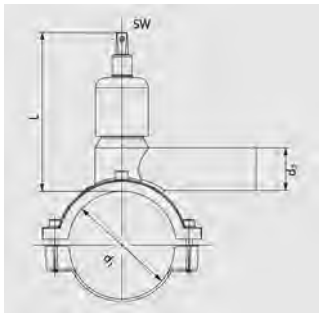
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
63	32	T-615 614		1	16	288	160	14	0.980
63	40	T-615 615		1	16	288	160	14	0.924
90	32	T-615 616		1	12	96	200	14	1.810
90	40 ^①	T-615 617		1	12	96	200	14	1.950
110	32	T-615 620		1	10	80	190	14	2.056
110	40 ^①	T-615 621		1	10	80	190	14	2.214
110	50	T-615 622		1	10	80	190	14	2.223
110	63	T-615 623		1	10	80	190	14	2.368
125	32	T-615 624		1	10	80	190	14	2.176
125	40 ^①	T-615 625		1	10	80	190	14	2.322
125	50	T-615 626		1	10	80	190	14	2.331
125	63	T-615 627		1	10	80	190	14	2.476
160	32	T-615 628		1	6	48	245	14	2.722
160	40 ^①	T-615 629		1	6	48	245	14	2.980
160	50	T-615 630		1	6	48	245	14	2.980
160	63	T-615 631		1	6	48	245	14	3.180
180	32	T-615 632		1	5	40	245	14	2.880
180	40 ^①	T-615 633		1	5	40	245	14	3.020
225	32	T-615 640		1	5	40	245	14	2.890
225	40 ^①	T-615 641		1	5	40	245	14	3.040

DAV

Pressure Tapping Valves with extra long outlet spigot



Compact part in HD-PE with **no threaded connections**. Actuating spindle in stainless steel 1.4305. No re-insulating required. Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). **Integral drill** with upper **and** lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer. Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN®- EBS). Length of the outlet spigots dimensioned for 2 fusion operations (if necessary). Registered by DVGW under registration no. DV-6611AU2254 and DV-6611AU2255.

PE 100 SDR 11

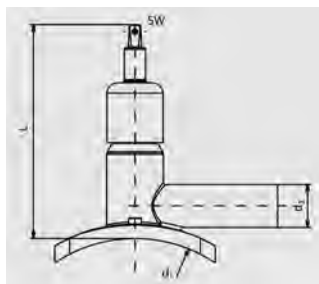
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
50	32	T-615 955		1	16	288	160	14	0.858
63	32	T-615 341		1	16	288	160	14	0.890
63	40	T-615 342		1	16	288	160	14	0.830
75	32	T-615 956		1	12	216	160	14	1.040
90	32	T-615 344		1	12	96	200	14	1.810
90	50	T-615 346		1	12	96	200	14	1.880
90	63	T-615 347		1	12	96	200	14	1.980
110	32	T-615 348		1	10	80	190	14	1.980
110	50	T-615 350		1	10	80	190	14	2.070
110	63	T-615 351		1	10	80	190	14	2.155
125	32	T-615 352		1	10	80	190	14	2.100
125	50	T-615 354		1	10	80	190	14	2.180
125	63	T-615 355		1	10	80	190	14	2.270
140	63	T-615 930		1	10	80	190	14	2.290
160	32	T-615 356		1	6	48	245	14	2.760
160	50	T-615 358		1	6	48	245	14	2.840
160	63	T-615 359		1	6	48	245	14	2.950
180	32	T-615 361		1	5	40	245	14	2.810
180	50	T-615 363		1	5	40	245	14	2.880
180	63	T-615 364		1	5	40	245	14	2.920
200	32	T-615 366		1	5	40	245	14	2.830
200	50	T-615 368		1	5	40	245	14	2.629
200	63	T-615 369		1	5	40	245	14	2.620
225	32	T-615 374		1	5	40	245	14	2.840
225	50	T-615 376		1	5	40	245	14	2.900
225	63	T-615 377		1	5	40	245	14	2.875

DAV-TL

Pressure Tapping Valve Top-Loading with extra long outlet spigot



For flexible adaptation to all pipe diameters in indicated range by means of the FRIALEN® FRIATOP Clamping device (see Product Range FRIATOOLS®). Stainless steel activating spindle 1.4305. No further insulation necessary. Leak and swarf free tapping up to 10 bar (gas) and 16 bar (water). Integrated drill with upper and lower stop, guided in a metal sleeve. With exposed heating coils for optimal heat transfer. Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN®-EBS). Length of the outlet spigot dimensioned for 2 fusion operations (if necessary).

d₁ up to 400 for SDR 17 pipes

PE 100 SDR 11

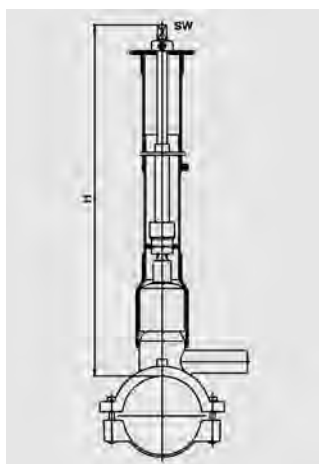
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	L	SW	Weight kg/each
250-315 (400)	50	T-615 589		2	10	80	245	14	2.300

EBS

Installation kits for Pressure Tapping Valves



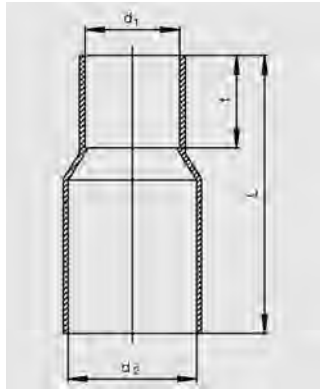
Telescopic actuating linkage for operation of the FRIALEN®-DAV from the street cap. Stepless adjustment in the stated range (H) without the use of tools, even in the installed state. Self supporting in any extended position. Corrosion proof.

Dimension H valid for DAV d₁ = 90 – 125.
For DAV d₁ < 90 please deduct 50 mm and for d₁ > 125 please add 50 mm.
(See also dimension L of the DAV)

H in m	Order Ref.	Quantity	Stock-status	VE	PE	SW	Weight kg/each
0.45-0.6	T-615 866	1	1	1	42	14	1.740
0.6-0.9	T-615 867	1	1	1	42	14	2.150
0.8-1.2	T-615 335	1	1	1	42	14	2.650
1.1-1.8	T-615 325	1	1	1	42	14	3.600

A

Adapter for Pressure Tapping Valves

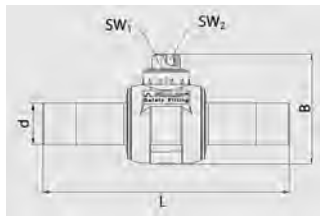


For fitting on the square drive of the FRIALEN®-DAV for adaptation to the standard commercial linkage with 50 mm guard tube.

d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	L	Weight kg/each
50	68	T-615 396		1	10	900	147	0.077

KHP

Ball Valves in HD-PE, ¼ turn



Compact part in HD-PE with spigots for use with FRIALEN®-couplers MB or UB. No corrosion proofing required. Open and closed position with definite stop. Maintenance free, with operating isolating valve actuated by a linkage (e.g. FRIALEN®-BS). Registered by DVGW under registration nos. DG-8631AU2251, DG-8631AU2252 and DG-8631AU2253.

PE 100 SDR 11

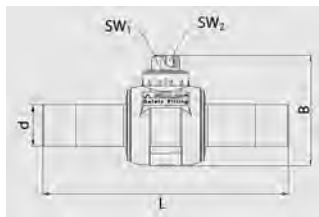
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	B	L	SW ₁	SW ₂	Weight kg/each
32	T-612 490		1	1	170	129	310	50 x 50	19	0.650
40	T-612 497		1	1	170	129	310	50 x 50	19	0.700
50	T-612 492		1	1	170	129	310	50 x 50	19	0.680
63	T-612 494		1	1	50	195	417	50 x 50	25	2.330
90	T-612 495		1	1	24	245	545	50 x 50	25	4.700
110	T-612 493		1	1	24	245	545	50 x 50	25	5.100
125	T-612 496		1	1	24	245	545	50 x 50	25	5.400
160	T-612 483		1	1	8	329	544	50 x 50	25	12.800
180	T-615 309		1	1	8	329	544	50 x 50	25	13.100
200	T-612 480		1	1	8	329	544	50 x 50	25	16.750
225	T-616 186		1	1	8	332	530	50 x 50	25	20.000

KH

Ball valves made from HD-PE, ¼ turn, full port



Compact construction part made from HD-PE with spigots for processing with FRIALEN® MB or UB couplers. Valve passage without construction in line with internal diameter of pipe socket. No corrosion prevention measures necessary. Open and closed position at defined stop. Maintenance free shut-off cock activated by lever system (e.g. FRIALEN® BS).

①: BS d 63 – d 225 required

PE 100 SDR 11

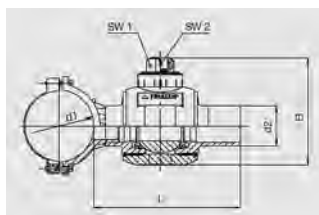
Maximum working pressure 16 bar (water)/10 bar (gas)



d	Order Ref.	Quantity	Stock-status	VE	PE	B	L	SW ₁	SW ₂	Weight kg/each
32	T-616 176		1	1	100	153	324	50 x 50	19	0.650
40	T-616 177		1	1	100	153	324	50 x 50	19	0.780
50 ^①	T-616 178		1	1	50	193	404	50 x 50	25	2.220
63	T-616 179		1	1	50	206	412	50 x 50	25	2.415
90	T-616 180		1	1	18	291	576	50 x 50	25	4.700
110	T-616 181		1	1	18	291	576	50 x 50	25	5.100
125	T-616 182		1	1	18	291	576	50 x 50	25	5.400

AKHP

Tapping Ball Valves in HD-PE, ¼ turn, for side tapping under pressure



Compact part in HD-PE. Factory made combination of FRIALEN®-Saddle Moulding and FRIALEN®-Ball Valve with spigot for space and cost saving horizontal installation. Leakage and swarf free tapping up to 10 bar (gas) and 16 bar (water) using standard tapping equipment (we recommend Hütz & Baumgarten). With exposed heating element for optimal heat transfer. Registered by DVGW under registration nos. DG-8631AU2252 and DG-8631AU2253.

PE 100 SDR 11

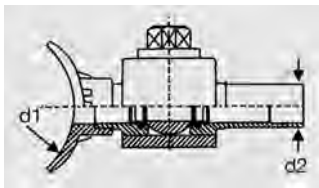
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	B	Tapping diameter	L	SW ₁	SW ₂	Weight kg/each
110	63	T-615 427		1	6	48	180	42	330	50 x 50	25	3.072
110	90	T-615 428		1	4	32	240	60	335	50 x 50	25	4.670
125	90	T-615 431		1	4	32	240	60	335	50 x 50	25	4.790
160	63	T-615 433		1	4	32	180	42	330	50 x 50	25	3.300
160	90	T-615 434		1	3	24	240	60	335	50 x 50	25	5.000
180	90	T-615 437		1	4	32	240	60	335	50 x 50	25	5.000
225	63	T-615 439		1	3	24	180	42	330	50 x 50	25	5.000
225	90	T-615 440		1	3	24	240	60	335	50 x 50	25	5.000

AKHP-TL

Tapping Ball Valves in HD-PE, 1/4 turn, Top-Loading for side tapping under pressure



Suitable for all pipe diameters in the given range by means of the FRIALEN®-FRIATOP Clamping Unit (see Product Range FRIATOOLS®). Compact part in HD-PE. Factory made combination of FRIALEN®-Saddle Moulding and FRIALEN®-Ball Valve with spigot for space and cost saving horizontal installation. Leakage and swarf free tapping up to 10 bar (gas) and 16 bar (water) using standard tapping equipment (we recommend Hütz & Baumgarten). With exposed heating element for optimal heat transfer.

Registered by DVGW under registration no. DG-8631AU2253.

d₁ to 560 for pipes SDR 17

PE 100 SDR 11

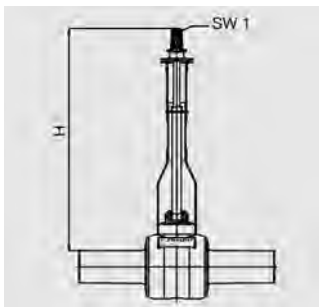
Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	B	Tapping diameter	L	SW ₁	SW ₂	Weight kg/each
250-450 (560)	63	T-615 525		2	4	32	180	42	330	50 x 50	25	2.832
250-450 (560)	90	T-615 526		2	4	32	240	60	335	50 x 50	25	4.500

BS

Installation kits for Ball Valves and Tapping Ball Valves (Standard and Top-Loading)

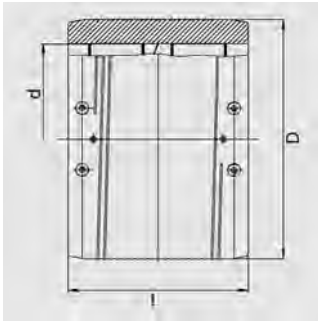


Telescopic actuating linkage for operation of the FRIALEN®-KHP, KH, AKHP and AKHP-TL from the valve cover. Stepless adjustment in the stated range (H) without the use of tools, even in the installed state. Self supporting in any extended position. Corrosion proof. **Key width 14 version specially designed for domestic connection.**

d	H in m	Order Ref.	Quantity	Stock-status	VE	PE	SW ₁	Weight kg/each
32- 50	0.45-0.7	T-615 741		1	1	42	30	2.400
32- 50	0.6-1.0	T-615 957		1	1	42	14	1.700
32- 50	0.6-1.0	T-615 328		1	1	42	30	2.850
32- 50	1.0-1.5	T-615 330		1	1	42	30	3.800
32- 50	1.2-2.0	T-616 068		2	1	42	14	3.300
32- 50	1.2-2.0	T-615 329		2	1	42	30	4.600
63-225	0.6-1.0	T-615 958		1	1	42	14	1.700
63-225	0.6-1.0	T-615 310		1	1	42	30	3.650
63-225	1.0-1.5	T-615 331		1	1	42	30	4.760
63-225	1.2-2.0	T-616 069		2	1	42	14	3.450
63-225	1.2-2.0	T-615 311		2	1	42	30	5.990

UB PN25

Slide-over couplers, PN25



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. From d 180 with fusion indicators for visual fusion control.

Diameter d 280 and bigger with pre-heating technology (optional use).

①: separate fusion zones

PE 100 SDR 7,4

Maximum working pressure 25 bar (water)

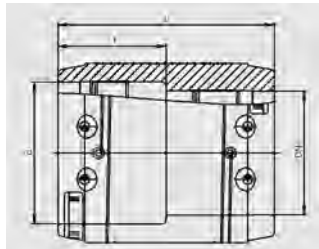


NEW!

d	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
90	T-616 270		1	30	240	117	138	0.530
110	T-616 271		1	24	192	142	159	0.891
125	T-616 272		1	16	128	160	172	1.196
140	T-616 273		1	12	96	181	184	1.622
160	T-616 274		1	8	64	206	203	2.358
180	T-616 282		1	6	48	225	210	2.950
200	T-616 283		1	2	36	250	224	3.870
225	T-616 284		1	1	36	280	240	5.160
250	T-616 285		1	1	24	315	246	6.840
280 ^①	T-616 286		1	1	18	355	268	10.700
315 ^①	T-616 287		1	1	18	400	285	13.400
355 ^①	T-616 288		1	1	9	450	300	17.900

REM

Relining Slide-over Couplers



For connection from relining pipe to standard pipe. With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Gap reduction between coupler and pipe possible through special preheating barcode. For processing refer to relining installation instructions.

with preheating barcode

PE 100 SDR 17

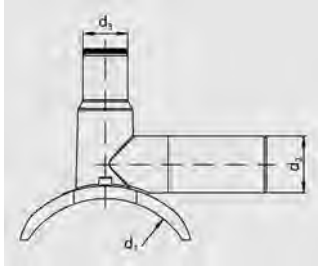
Maximum working pressure 10 bar (water)/5 bar (gas)



d/DN	Order Ref.	Quantity	Stock-status	VE	PE	D	L	Weight kg/each
110/100	T-615 569		2	24	192	127	150	0.675
160/150	T-615 571		2	12	96	180	180	1.540
315/300	T-615 576		2	1	18	355	285	7.750

DAA-TL/RE

Pressure Tapping Tees Top-Loading/Relining with extra long outlet spigot



For the flexible adaptation to **all** pipe diameters in indicated range by means of the FRIALEN® FRIATOP Clamping Device (see Product Range FRIATOOLS®). Leak and swarf free tapping up to 10 bar (gas) and 16 bar (water). Integrated drill with upper **and** lower stop, guided in a metal sleeve. With exposed heating coils for optimal heat transfer. End plug with internal O-ring seal. Fusible dome (see K). Leakage check possible before tapping. For pressure test adapter and actuating key see Product Range FRIATOOLS®. Length of the outlet spigot dimensioned for 2 fusion operations.

Other outlet dimensions with MR Electrofusion Reducers

①: d₁ up to 400 for SDR 17 pipes

PE 100 SDR 11

Maximum working pressure 16 bar (water)/10 bar (gas)



d ₁	d ₂	Order Ref.	Quantity	Stock-status	VE	PE	d ₃	Weight kg/each
> 98-130	50	T-615 527		2	20	160	50	0.800
> 130-160	50	T-615 528		2	12	96	50	1.041
> 160-210	63	T-615 531		2	5	90	50	1.229
250-315 (400)	63	T-615 339		1	5	90	50	1.416

General conditions of supply and payment of FRIATEC Aktiengesellschaft

Technical Plastics Division

1. Scope

Terms and conditions as listed below apply to all deliveries. Other conditions do not automatically become contractual, even if not expressly contradicted by us.

2. Conclusion of a Contract

Our quotations are not binding. A contract is made only when we confirm an order in writing. Our written order confirmation controls content and size of the order.

Alterations to the technical execution of ordered goods are acceptable unless they constitute essential functional changes or the customer proves that the alterations are unacceptable.

We will accept liability for the quality of an item only if this has been expressly stated in our order confirmation or in our advertisements.

3. Delivery

Delivery dates and deadlines are subject to ourselves being supplied appropriately and in good time. Delivery deadlines are determined by the date of our order confirmation. They are regarded as fulfilled once the goods have left the factory or been released for shipment.

The deadline is extended if the customer desires changes retrospectively or if events occur for which we are not responsible.

4. Prices and Payment Conditions

Our prices are ex factory or ex warehouse, plus VAT. Insurance, packaging, shipment and custom clearance charges are invoiced separately, unless expressly stated otherwise in our current price list.

Our invoices are payable net within 30 days from the invoice date. We offer 2% discount for payments within 14 days, but only if all other outstanding invoices have been paid.

We reserve the right to accept bills of exchange and cheques in individual cases. No discount is offered when paying by bill of exchange. Bills of exchange and cheques are accepted only on account of performance. The claim is regarded as fulfilled only once payment has been cashed or credited. All expenses which may arise must be met by the customer.

We are authorised to demand immediate cash payment for all deliveries, if payment conditions are not adhered to, or in circumstances causing the credit worthiness of a customer to be questioned. A possible deferral caused by the acceptance of bills of exchange becomes null and void. The customer is obliged to pay cash immediately on returning the bill of exchange. In addition we are authorised to carry out any remaining deliveries against advance or warranty payment or to rescind the contract and demand compensation. We are furthermore authorised to stop the onward sale of goods to be delivered and to retrieve the goods at the customer's expense if we have rescinded the contract.

5. Passage of Risk

The risk is transferred to the customer at the moment of the goods being ready for shipment and the notification thereof. This applies even if shipment is delayed due to circumstances not in our control. If there is no notification of readiness for shipment, the risk is passed to the transport company, and on to the customer no later than at the point of the goods leaving the factory or warehouse. This applies also if our own transport is used or carriage is paid.

6. Formal Complaints, Claims, Limitation Period

The customer must immediately check goods received for any defects. Formal complaints must be lodged immediately on receipt of the goods, and no later than a fortnight after receipt, in writing. The same timeframe applies to hidden defects after discovery. There can be no claims for defects which have not been notified within the appropriate period.

When a claim is justified, we will choose either to repair or replace the goods. If we do not rectify the defect or provide a substitute within an appropriate period, or following no more than two attempts, the customer is authorised to rescind the contract or demand a reduction in the purchasing price.

It is not possible to rescind if there is only an insignificant violation on our part.

The limitation period for claims is

5 years for building materials which have been installed and have caused defects within a pipe system.

1 year for delivery of other new goods to contractor

2 years for all others

Limitation period starts on delivery of goods.

7. Reservation of Ownership

Our deliveries are all subject to reservation of ownership. The goods remain in our ownership until payment of all claims arising from our business relationship with the customer is made. With an account current the reserved ownership constitutes the security for our balance claim.

The customer is authorised to resell delivered goods within the framework of his or her ordinary business procedures. He or she may not however pledge or transfer the conditional commodity by way of security.

In the event of resale the customer assigns to us all claims including all subsidiary rights which arise from the resale. This applies without taking into consideration whether he or she resells the conditional commodity unaltered, unprocessed, or in conjunction with other items. If the resale takes place including goods not owned by us, the assigning applies only up to the value of the conditional commodity. The value is determined according to our sales prices.

Processing of the conditional commodity always occurs according to § 950 BGB for us as manufacturers, but without obligation. The processed goods constitute the conditional commodity as part of these conditions. If the conditional commodity is processed together or is irretrievably mixed up with other items not owned by us, we will gain co-ownership of the new item at a ratio of conditional commodity invoice value to the invoice value of other used goods at the time of processing and mixing. The co-ownership rights thus created apply as conditional commodity in the context of these conditions. The customer is obliged, if requested by us, to point out our ownership rights to the prospective buyer.

The customer is authorised to collect the claim from the resale notwithstanding our own collection authorisation. While the customer meets his payment obligations appropriately, we will not put the claim into force. The customer has to inform us of the debtors of the assigned claims and to notify the assignment to them. Our right of informing third-party debtors of the assignment will not be affected by this.

The customer is not allowed to assign the claim against third-party debtors to third parties or to negotiate an assignment ban with the third-party debtor.

The customer is obliged to notify us immediately and in the quickest way possible about a pledge or any other infringement of our security rights by third parties. The customer is obliged to hand over to us all documents required to preserve our rights, and to compensate us for any costs arising from a possible intervention.

We pledge to release existing securities of our choice up to the point where their value exceeds the claims to be secured by more than 25%.

The customer is obliged to insure the goods for the duration of our reservation of ownership.

8. Acts of God – Right to Rescind

If we are prevented from fulfilling our terms of delivery by acts of God or other circumstances not within our control, or if the fulfilment of our obligations becomes too great a burden for these reasons, we are authorised to rescind the contract. Compensation claims by the customer in such circumstances are not permitted. The right to rescind is effective also if the delivery period was initially extended.

9. Limitations of Liability

We are liable for any violations of life, body or health for which we are accountable in accordance with legal requirements.

For other damages the following applies:

We are liable for damages based on gross negligence by us or deliberate or gross negligence by our legal representatives or assistants in accordance with legal requirements.

For damages based on the violation of essential contractual obligations based on negligence by us, our legal representatives or assistants, our liability is limited to the predictable contractual damage up to a maximum of the value of the delivered item.

Claims for other damage on violating subsidiary obligations or inessential obligations based on negligence are excluded.

Claims for damages for delay caused by negligence are excluded. The customer's legal rights on completion of an appropriate period of time remain unaffected.

Liability exclusions or limitations do not apply if a defect has been deliberately concealed by us or if we have offered warranty on the quality of the item.

A customer's claim for compensation of time or costs invested in vain instead of compensation in place of time or costs, and the liability according to the product liability law remain unaffected.

10. Non-assignment clause

Unless something different has been expressly agreed with the customer, the customer is not authorised to transfer rights from the contract to third parties without our agreement.

11. Applicable rights, Place of Jurisdiction

Only German law applies under the exclusion of UN purchasing rights.

Exclusive place of jurisdiction for disagreements between contract parties is Mannheim, if the customer is a merchant, a legal person of public law or a special asset, or if the customer does not have a place of jurisdiction in Germany. We do however reserve the right to proceed against a customer who does not have a general place of jurisdiction in Germany within other courts of our choice.


January 2006

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Further Product Ranges:

Product Range
AF 13/08




FRIAFIT®

Always the right decision:
**FRIAFIT®
Sewage System**

The safe connection method for HD-PE pipes carrying sewage and foul water.

valid from 1st February 2008



Product Range
EZ 22/06



FRIATOOLS®

Always the right decision:
**FRIATOOLS®
Technical Equipment**

The correct equipment and tools for pipe and cable installation of FRIAFIT® safety fittings and FRIAFIT® sewage system.

valid from 1 July 2006



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