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# FRIALEN®

**katalógové listy elektrotvaroviek podľa dokumentácie výrobcu  
2017**

**Spoločnosť PLASTIX, s.r.o.  
zastupuje obchodné záujmy výrobcu:**

FRIATEC Aktiengesellschaft,  
Technical Plastics Division  
P.O.B. 71 02 61 · D-68222 Mannheim



**na Slovenskom trhu.**

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**Poznámka:**

**kliknite na vybranú položku**

**AKHP****zostava odbočky a gul'ového ventilu**

**FRIALEN® -Tapping Ball Valves AKHP and AKHP-TL  
in HDPE, 1/4 turn, for side tapping under pressure  
PE 100 SDR 11**

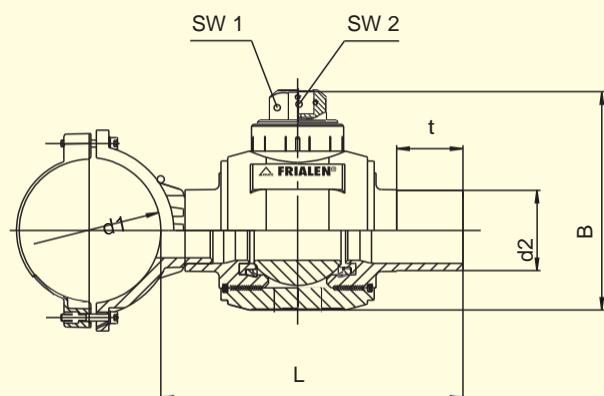
Maximum working pressure 16 bar (Water) / 10 bar (Gas)

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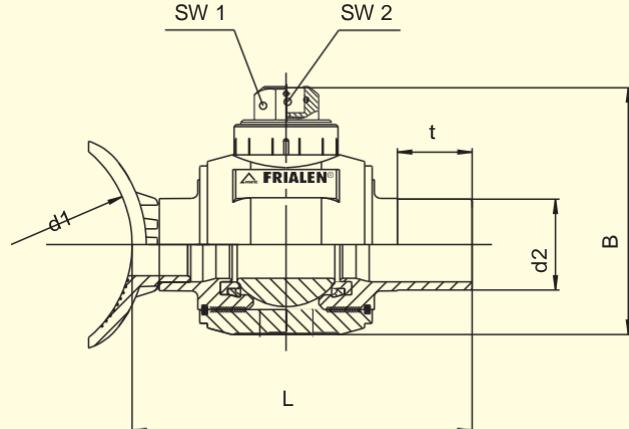
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### AKHP



### AKHP-TL



### AKHP

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	VE	PE	B	Drilling diam. ①	L	t	Ext. Square SW 1	Intern. Square SW 2	Weight kg/each
110	63	T-615 427	1	6	48	180	42	330	110	50 x 50	25	2.900
110	90	T-615 428	1	4	32	240	60	335	90	50 x 50	25	4.670
125	90	T-615 431	1	4	32	240	60	335	90	50 x 50	25	4.790
160	63	T-615 433	1	4	32	180	42	330	110	50 x 50	25	3.300
160	90	T-615 434	1	3	24	240	60	335	90	50 x 50	25	5.000
180	90	T-615 437	1	4	32	240	60	335	90	50 x 50	25	5.000
225	63	T-615 439	1	3	24	180	42	330	110	50 x 50	25	5.000
225	90	T-615 440	1	3	24	240	60	335	90	50 x 50	25	5.000

### AKHP-TL Top-Loading

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	VE	PE	B	Drilling diam. ①	L	t	Ext. Square SW 1	Intern. Square SW 2	Weight kg/each
250-450②	63	T-615 525	2	4	32	180	42	330	110	50 x 50	25	2.600
(560)												
250-450②	90	T-615 526	2	4	32	240	60	335	90	50 x 50	25	5.000
(560)												

FRIALEN®-Tapping Ball Valves can be used for pipes of SDR stages 11 to 17.6  
DVGW-Registration Nos. AKHP: DG-8631AU2252 and DG-8631AU2253

AKHP-TL.: DG-8631AU2253

① We recommend equipment of Hütz + Baumgarten

② d<sub>1</sub> up to 560 for pipes SDR 17. Please refer to the instructions of the drilling tool.

Please turn over for important information regarding application of the  
**FRIALEN®-Tapping Ball Valves AKHP and AKHP-TL**



# FRIALEN®-Tapping Ball Valves AKHP and AKHP-TL

## in HDPE, 1/4 turn, for side tapping under pressure

### PE 100 SDR 11

Maximum working pressure 16 bar (Water) / 10 bar (Gas)

#### Areas of Application

The FRIALEN®-Tapping Ball Valve, completely made from HDPE, makes it possible to tap sideways into an operational HDPE mains under gas and water pressure – without any escape of gas or water.

#### Assembly Instructions

##### AKHP

After scraping and cleaning the pipe and saddle moulding to be fused, the Tapping Ball Valve is screwed tightly onto the HDPE pipe using a bottom clamp and then fused onto it (see Assembly Instructions for "FRIALEN®-Safety Fittings for house connections and distribution pipes up to d 225").

##### AKHP-TL

Preparation of areas to be fused as for AKHP. For this version the saddle moulding will be mounted using the FRIATOP Clamping Unit (see list of Technical Equipment). Please read the separate leaflet "Assembly and Operating Instructions for FRIATOP clamping unit (Top-Loading)". Fusion takes place using the FRIAMAT® fusion unit.

#### Tapping of the HDPE pipe under operating pressure

For this we recommend the tapping equipment of Hütz + Baumgarten. It is clamped onto the exposed fusion end of the ball valve. The tapping of the HDPE pipe takes place through the opened ball valve and is leakage free.

**For further information, please call our  
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#### Actuating the shut-off valve

By the telescopic actuating installation kit BS from the valve cover.

#### Five good reasons for using the FRIALEN®-Tapping Ball Valves

- Fusioning and tapping under pressure does away for the need for shut-off devices and emergency supplies during connection
- Installation of mains and service lines takes place on one level and thus affords advantages in the planning stages
- Construction and connecting tasks are reduced to a minimum
- The ball valve can be used as a shut-off device afterwards
- AKHP-TL type can be applied universally to large HDPE pipe diameters d 250-450 (560). This means additional economy due to less material needed

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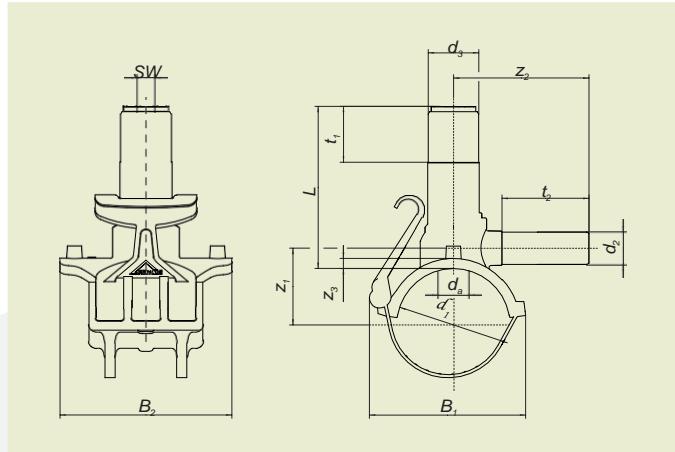
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## DAA kit

## Prípojková navŕtavacia armatúra

### DAA KIT PRESSURE TAPPING TEES AS KIT WITH LOOSE REDUCER MR



PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	L	t <sub>1</sub>	t <sub>2</sub>	z <sub>1</sub>	z <sub>2</sub>	z <sub>3</sub>	B <sub>1</sub>	B <sub>2</sub>	WS in mm	Drilling Ø d <sub>a</sub>	Weight kg/each
63	40	616472	1	20	160	50	160	50	115.00	51	165	10	108	146	17	30	0.855
90	40	615656	1	14	112	50	160	50	115.00	66	168	10	137	170	17	30	0.950
90	50	616476	1	14	112	50	160	50	115.00	66	168	10	137	170	17	30	0.960
110	40	615662	1	14	112	50	160	50	115.00	76	175	10	152	170	17	30	1.000
110	50	616477	1	14	112	50	160	50	115.00	76	175	10	152	170	17	30	1.010
125	40	615668	1	12	96	50	160	50	115.00	83	180	10	167	170	17	30	1.020
125	50	616478	1	12	96	50	160	50	115.00	83	180	10	167	170	17	30	1.030
140	50	616479	1	12	96	50	160	50	115.00	91	185	10	170	170	17	30	1.060
160	40	615675	1	10	80	50	160	50	115.00	106	185	10	195	186	17	30	1.095
160	50	616480	1	10	80	50	160	50	115.00	106	185	10	195	186	17	30	1.105
180	50	616481	1	10	80	50	190	50	115.00	116	188	10	203	186	17	30	1.170
200	50	616485	1	8	64	50	190	50	115.00	126	190	10	205	186	17	30	1.180
225	50	616486	1	8	64	50	190	50	115.00	138	197	10	214	186	17	30	1.210

FRIALEN Pressure Tapping Tees  $\geq d$  63 to pipes SDR 11–17.6. Other SDR on request. Please observe the marking directly at the product, which is mandatory.

d<sub>2</sub>: With reducer MR d 63/40 or MR d 63/50; d<sub>2</sub>= Dimension of service pipe

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## FRIALEN® SAFETY FITTINGS

### DAA KIT PRESSURE TAPPING TEES AS KIT WITH LOOSE REDUCER MR

#### Areas of Application

The FRIALEN Pressure Tapping Tees DAA are used as branch fittings and can be fused to mains that are un-pressurised or under operating pressure. The provided reducer modifies the outlet spigot d 63 to the nominal diameter d 40 or d 50 of the service pipe.

#### Assembly Instructions

The fusion of the HD-PE main and the service pipe with FRIALEN Pressure Tapping Tee takes place by FRIALEN fusing - leakproof and longitudinally strong.

The pipe, saddle and the outlet spigot are prepared (oxide layer removed/cleaned) in accordance with the general installation instructions (see "Assembly instructions" for FRIALEN Safety Fittings for house connections and distribution pipes up to d 225).

Thanks to its innovative and patented clamping mechanism, the FRIALEN Pressure Tapping Tee DAA can also be installed without any tool quickly and reliably on the HD-PE main when it exhibits ovality or has expanded under operating pressure.



**Good reasons for using the FRIALEN Pressure Tapping Tees DAA KIT:**

- Compact design
- Simple and reliable assembly without any tool thanks to the patented fast clamping lever
- The flexible saddle compensates pipe tolerances and always provides optimal, uniform buildup of melt pressure during fusion
- Assembly without rounding clamps or special tools
- The Pressure Tapping Tee is one unit with captive parts
- Only one 17 mm wrench size for tapping and installing the plug
- Chipless tapping
- Leak-free tapping of gas mains under operating pressure up to 10 bar
- Low torque needed for tapping
- Punched-out pipe piece fits securely in the drill
- Stable thread as guidance for the driller during tapping process even at large pipe wall thicknesses and low temperatures
- Solid upper and lower stop of driller, with integrated torque limiter
- Extra wide fusion zone
- After tapping, stack can be fused non-accessible with FRIALEN cap K
- Outlet spigot length measured for two fusion operations
- Additional barcode for traceability (traceability coding)
- Both barcodes exposed on fast clamping lever for easy scanning with readerwand or barcode scanner

#### Výrobca:

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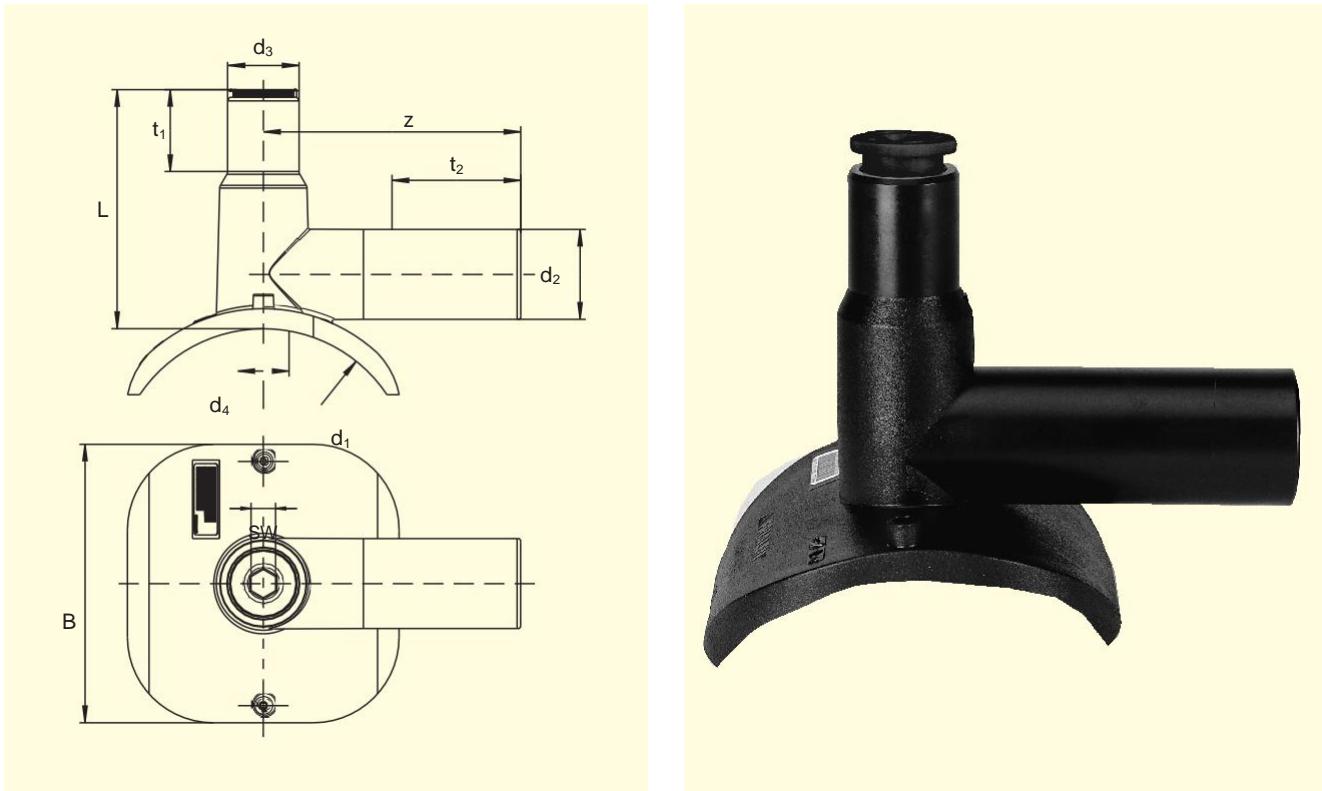
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DAA TL

prípojková navŕtavacia armatúra Top Loading

**FRIALEN®-Pressure Tapping Tees Top-Loading****DAA-TL****and Top-Loading/Relining DAA-TL/RE****PE 100 SDR 11 / \*PE 100 SDR 17**

Maximum working pressure 16 bar (Water) / 10 bar (Gas)



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	VE	PE	d <sub>3</sub>	L	z	t <sub>1</sub>	t <sub>2</sub>	B	SW	Drilling Ø d <sub>4</sub>	Weight kg/each
> 98-130	50	T-615 527	2	20	160	50	125	152	59	105	100	19	30	0.804
> 130-160	50	T-615 528	2	12	96	50	121	162	58	102	180	19	30	1.041
> 160-210	63 <sup>G)</sup>	T-615 531	2	5	90	50	167	180	58	118	195	19	30	1.229
250-315	63 <sup>G)</sup>	T-615 339	1	5	90	50	167	180	58	118	195	19	30	1.416 (400)

FRIALEN®-Pressure Tapping Tees DAA-TL and DAA-TL/RE can be used for pipes of SDR stages 11 to 17.6

<sup>G)</sup> Other outlet dimensions with electrofusion reducers MR

d1 up to 400 for pipes SDR 17

DVGW-Registration Nos.: DV-8606AU 2249 and DV-8611AU 2250

Please turn over for important information regarding application of the  
FRIALEN®-Pressure Tapping Tees DAA-TL and DAA-TL/RE.



# FRIALEN®-Pressure Tapping Tees

## Top-Loading DAA-TL

## and Top-Loading/Relining DAA-TL/RE

**PE 100 SDR 11**

Maximum working pressure 16 bar (Water) / 10 bar (Gas)

### Areas of Application

The FRIALEN®-DAA-TL and DAA-TL/RE Pressure Tapping Tees are used for branches of unpressurised and pressurised pipelines for variable adaption to all pipe diameters in the given range.

Outlet spigots prepared for receiving gas flow controllers. Dimensions on request.

### Assembly Instructions

The fusion of the HDPE distribution pipes and the house connections with FRIALEN®-Pressure Tapping Tees takes place by FRIALEN®-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN®-Safety Fittings for house connections and distribution pipes up to d 225" and "FRIALEN®-Special Technology for laying large bore pipes and relining pipe networks"). This involves removing the oxide skin and cleaning the pipe covered by the saddle as well as the outlet spigot and the pipe end.

Component is clamped onto the pipe using the FRIALEN® clamping device FRIATOP.

**For further information, please call our  
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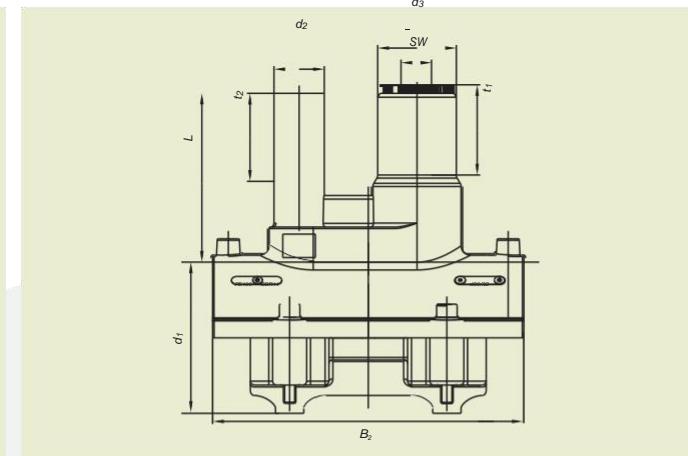
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## DAP

## prípojková navŕtavacia armatúra paralelná

### DAP PRESSURE TAPPING TEES WITH PARALLEL DOME AND EXTRA LONG OUTLET SPIGOT



PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	L	t1	t2	Drilling Ø d <sub>a</sub>	Weight kg/each
63	32	616042	1	16	288	40	125	50	84	21	0,630
90	32	616043	1	16	128	50	115	58	65	30	1,100
110	32	615581	1	12	96	50	158	58	115	30	1,280
110	50	615606	1	12	96	50	158	58	115	30	1,380
125	32	615711	1	12	96	50	158	58	115	30	1,310
125	50	615712	1	12	96	50	158	58	115	30	1,360
160	32	615713	1	8	64	50	170	70	115	30	1,540
160	50	615714	1	8	64	50	170	70	115	30	1,560
180	32	615715	1	6	48	50	170	70	115	30	1,540
180	50	615716	1	6	48	50	170	70	115	30	1,560
225	32	615717	1	6	48	50	170	72	115	30	1,570
225	50	615718	1	6	48	50	170	72	115	30	1,590

FRIALEN-Pressure Taps  $\leq d$  63 can be fused to pipes of SDR stage 11 and  $> d$  63 to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos.: DV-8601AU2248 and DV-8606AU2249

② max. working pressure 10 bar (water)/5 bar (gas)

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Please find important information regarding application of our products on the last page.

## FRIALEN® SAFETY FITTINGS

### DAP PRESSURE TAPPING TEES WITH PARALLEL DOME AND EXTRA LONG OUTLET SPIGOT

#### Areas of Application

The FRIALEN DAP is used for HD-PE pipe systems both in the water and gas industry. The outlet spigot has been designed to be extra long. These pressure tapping tees are particularly suited for space-saving horizontal installation.

#### Assembly Instructions

The fusion of the HD-PE distribution pipes and the house connections with FRIALEN-Pressure Tapping Tees takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

#### Good reasons for using FRIALEN DAP Pressure Tapping Tees:

- Economy due to space-saving horizontal installation. Excavation depth of pipe system trenches reduced by 10-20 cm
- Protection from damage during subsequent work in the trench through the dome and outlet being positioned below the mains pipe apex
- Length of the outlet spigot measured for 2 fusions
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

#### In addition, all tried-and-tested advantages of a FRIALEN Pressure Tapping Tee apply:

- Compact construction
- Installation without rounding clamp and special tools
- Preassembled unit without loose parts ■
- Leakage check possible before tapping ■
- Swarfless tapping
- Leakage free tapping of gas pipe up to 10 bar working pressure
- Little force required for tapping
- Punched-out pipe piece fits securely in drill
- Drill guided in metal sleeve
- Drill with upper and lower stop
- Extra wide fusion zone
- Dome can be fused with cap after tapping
- Length of outlet spigot dimensioned for two fusion operations
- Installation using elastic clamp for optimum build-up of molten mass pressure during fusion

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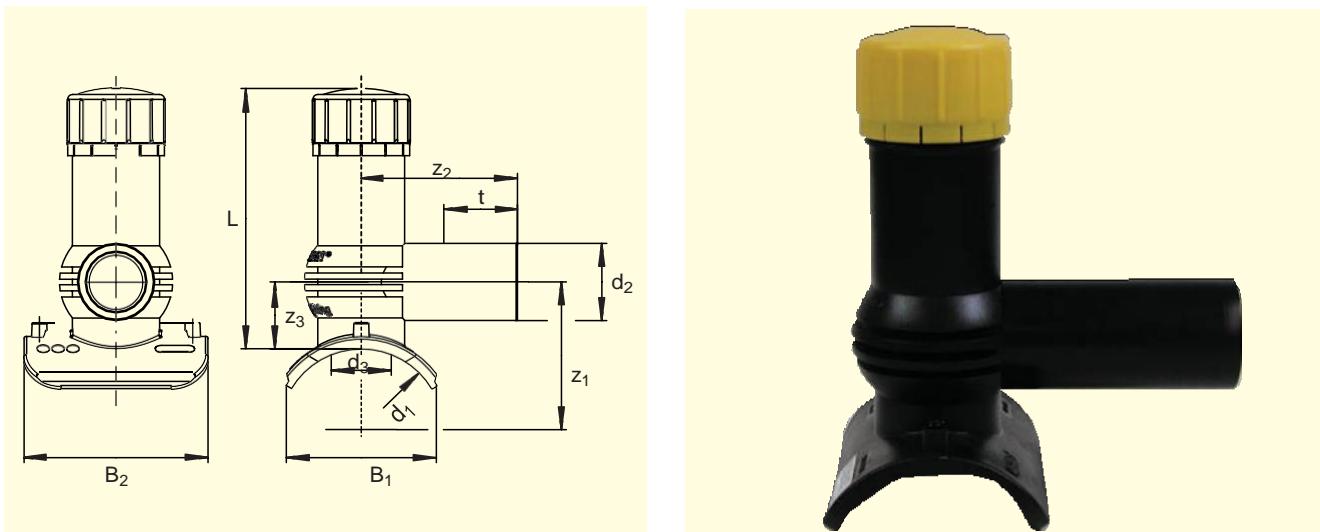
DAS

navŕtavacie sedlo

FRIALEN®

**FRIALEN®-Hot Tapping Tee DAS****Top-Loading****PE 80 SDR 11**

Maximum working pressure 12.5 bar (Water) / 5 bar (Gas)



Medium Volume (Type 25)

d <sub>1</sub>	d <sub>2</sub>	Order-Ref.	Stock-status	VE	PE	d <sub>3</sub>	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	B <sub>1</sub>	B <sub>2</sub>	t	L	Weight kg/each
63	32	T-615 797	2	16	288	25	65	108	34	71	120	44	146	0.400
110	32	T-615 781	2	24	192	25	90	108	35	115	150	44	145	0.525
160	32	T-615 788	2	24	192	25	111	108	31	126	150	44	149	0.525

High Volume (Type 33, Type 50)

d <sub>1</sub>	d <sub>2</sub>	Order-Ref.	Stock-status	VE	PE	d <sub>3</sub>	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>3</sub>	B <sub>1</sub>	B <sub>2</sub>	t	L	Weight kg/each
63	63	T-615 804	2	16	288	30	59	150	28	71	120	63	111	0.585
110	63	T-615 789	2	16	96	45	105	160	50	117	150	63	207	1.715
160	63	T-615 792	2	16	96	45	105	160	25	126	150	63	207	1.715

FRIALEN®-Hot Tapping Tee DAS can be used for pipes of SDR stages 11 to 17.6

For installation of DAS Type 25, 33 and 50 the Installation Set DAS is required Order-Ref.: T-613 340

Please turn over for important information regarding application of the FRIALEN®-Hot Tapping Tees DAS.

# FRIALEN®-Hot Tapping Tee DAS

Top-Loading

**PE 80 SDR 11**

Maximum working pressure 12.5 bar (Water) / 5 bar (Gas)

## Areas of Application

The FRIALEN®-DAS Hot Tapping Tees are used for branches of unpressurised and pressurised gas and water pipelines.

## Assembly Instructions

The fusion of the HDPE distribution pipes and the house connections with FRIALEN®-Hot Tapping Tees takes place by FRIALEN®-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see „Assembly Instructions“ „FRIALEN® DAS Hot Tapping Tees“).

Component is clamped onto the pipe using the DAS installation tool.

## Ten good reasons for using the FRIALEN® DAS

- Compact design
- Installation without rerounding clamps, no underclamps required
- Easy installation with DAS installation tool
- High-volume tapping with extra large drill ø 25, ø 30 and ø 45 mm
- Pressure test possible before tapping
- Swarfless tapping
- Punched-out pipe piece fits securely in drill
- Drill with upper and lower stop
- Extra wide fusion zone
- Length of outlet spigot dimensioned for two fusion operations

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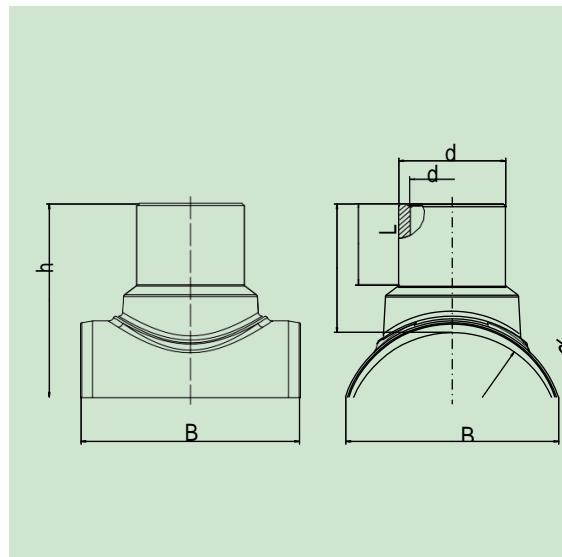
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SA-XL

## sedlová odbočková elektrotvarovka XL

**FRIALEN®-XL Spigot Saddles SA-XL**

The economic alternative to the integration of a branch line or vent in PE pipelines with large dimensions  
– unpressurised or under operating pressure

**PE 100 SDR 11**

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



$d_1$	$d_2$	Order Ref.	Stock-status	VE	PE	Tapping $d_a$	L	t	h	$B_1$	$B_2$	Weight kg/each
315	225 (*160)	616387	1	1	4	172	233	152	390	361	460	9,920
315	250	616398	1	1	4	187	233	152	390	361	460	9,720
355	225 (*160)	616388	1	1	4	172	235	152	380	388	460	9,940
355	250	616399	1	1	4	187	235	152	380	388	460	9,250
450	225 (*160)	616390	1	1	4	172	272	173	409	449	460	10,180
450	250	616401	1	1	4	187	272	180	409	449	460	10,000
500	160	616381	2	1	4	123	300	248	415	521	530	13,550

**PE 100 SDR 17**

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



NEW!	$d_1$	$d_2$	Order Ref.	Stock-status	VE	PE	Tapping $d_a$	L	t	h	$B_1$	$B_2$	Weight kg/each
	500	225	616391	2	1	4	172	300	230	400	521	530	13,600
	560	160	616373	2	1	4	123	300	246	430	577	530	15,300
	560	225	616392	2	1	4	172	300	235	420	577	530	16,200
	630	160	616374	2	1	4	123	300	251	450	634	530	16,000
	630	225	616393	2	1	4	172	300	241	440	634	530	17,000
	710	160	616375	2	1	4	123	300	248	472	712	530	19,900
	710	225	616394	2	1	4	172	300	239	463	712	530	20,750
	800	160	616376	2	1	4	123	300	250	411	643	530	16,800
	800	225	616395	2	1	2	172	300	242	403	643	530	17,650
	900	160	616377	2	1	4	123	300	251	427	714	530	18,650
	900	225	616396	2	1	4	172	300	244	420	714	530	19,500
	1000	160	616378	2	1	4	123	300	249	390	654	530	17,350
	1000	225	616397	2	1	4	172	300	243	384	654	530	18,200
	1200	160	616383	2	1	4	123	300	250	375	655	530	17,200
	1200	225	616384	2	1	4	172	300	245	371	655	530	18,100

\* with MR 225/160 reducible (Order Ref. 616356)

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6.

Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

**Please turn over for important information regarding application of our products.**

## „Think big“: Problem Solution for Large Dimensions

### FRIALEN®-XL Spigot Saddles SA-XL

#### Create highly economical branches!

Instead of cost-intensively integrating a T-piece, a branch or vent can be very comfortably created using the new FRIALEN-XL spigot saddle SA-XL.

#### Simple assembly - comfortable handling – short processing time

characterise the optimised and construction site-appropriate clamping method for large saddle component parts.

#### Branch saddle as branch: Your benefit – simple assembly!

Spigot saddles permit creating also large-volume branches at main pipes with less effort, minimal underground work and above all without interrupting the supply.

The saddle can be fixed at any position on the pipe. Thanks to the clamping method specifically developed for SA-XL, only access to the covered saddle area is required. Specifically in the case of connections to existing pipelines, the bedding in the pipeline zone is only disturbed as absolutely necessary.

#### Vacuum clamping technology: Your benefit – comfortable handling!

The clamping force of the saddle required for fusion and built-up of the joining pressure is applied by a vacuum. This only requires a compressor usual for construction sites and the VACUSET. Out-of-roundnesses and shape deviations of the pipe usually seen at construction sites can be bridged by the clamping method.

But it is above all the required space in the pipe trench – and thus cost-intensive underground work – which is minimised for access to the pipe.

The tapping diameter is almost identical with the pipe's diameter of the outlet spigot such that pressure losses are minimised.

#### Your benefit: Little time required!

Commissioning is possible with only a few actions. Short assembly and fusion times, short cooling times and a quick tapping permit a branch to be completed in almost no time at all!

#### Further good reasons for the FRIALEN-XL spigot saddle SA-XL:

- **Compact design**
- **HD-PE saddle with exposed heating coil for optimal heat transfer**
- **Little tapping forces**
- **Burr-free and almost flush tapping for maximum hydraulic performance**
- **Leakage-free tapping possible via shut-off valve**
- **Extra wide fusion zone**
- **Additional barcode for tracing back the fitting (Traceability-Coding)**

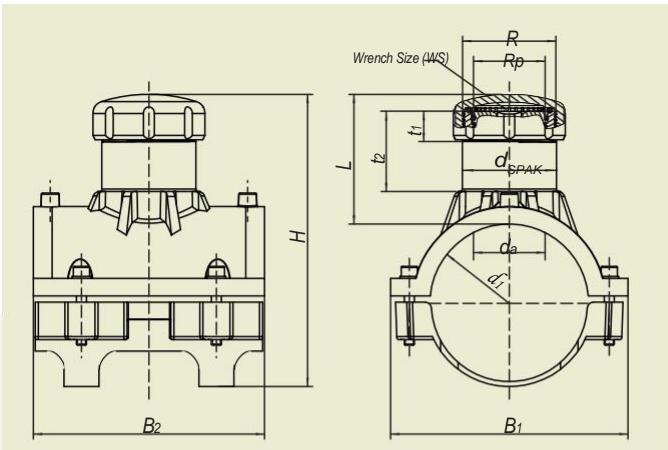
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**SPAI**
**sedlová armatúra pre uzavíracie balóny (inch)**
**SPAI BALLOON SHUT OFF SADDLES**

**PE 4710 SDR 11**
**Maximum working pressure 200 psi (water)/125 psi (gas)**


$d_1$	R	Rp	Order Ref.	Stock-status	BX	PU	L	$t_1$	$t_2$	$d_{SPAK}$ [mm]	H	$B_1$	$B_2$	WS [mm]	Drilling Ø $d_a$	Weight kg/each
3 IPS	G 2 1/2"	G 2"	616565	2	16	128	4.094	0.945	2.520	75	7.712	6.142	5.906	19	2.224	1.380
4 IPS	G 2 1/2"	G 2"	616566	2	12	96	4.094	0.945	2.520	75	8.752	7.008	7.086	19	2.224	1.540
6 IPS	G 2 1/2"	G 2"	616567	2	8	64	4.094	0.945	2.520	75	10.846	9.055	7.677	19	2.224	1.860
8 IPS	G 2 1/2"	G 2"	616542	2	5	40	4.094	0.945	2.520	75	12.835	10.157	7.598	19	2.224	1.900
10 - 12 IPS	G 2 1/2"	G 2"	616568	2	18	144	4.094	0.945	2.520	75		7.914	7.874	19	2.224	1.200

☐ Top-Loading version

FRIALEN Balloon Shut off Saddle SPAI can be fused to pipes of SDR stages 11 - 17.6.

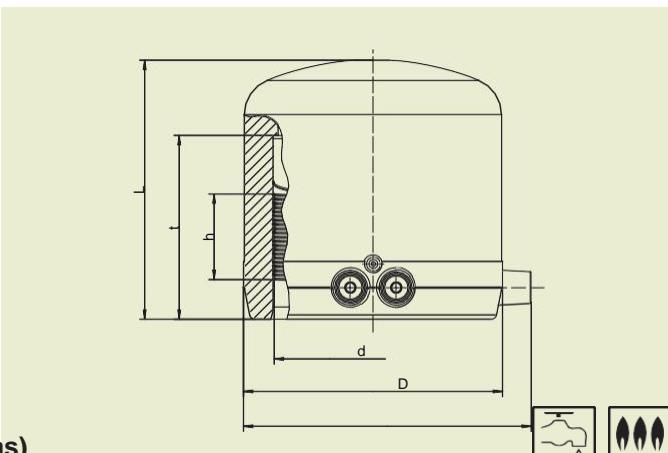
Other SDR stages on request. Please observe the marking directly at the product, which is mandatory.

Approved according to ASTM F1055

Safe shut-off of gas flow using balloon technique.

**NOTE:**

Equipment for use as balloon shut off saddle must match with SPAI, in particular the function of driller, balloon setting and brass plug setting equipment. Note the manufacturer's instructions and application limits, especially the safety guidelines for working on gas pipes under operating pressure.

**SPAK CAP FOR BALLOON SHUT OFF SADDLES**

**PE4710 SDR 11**
**Maximum working pressure 200 psi (water)/125 psi (gas)**


$d$ [mm]	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
75	612311	1	20	640	3.898	3.898	2.756	1.220	4.330	0,280

Please find important information regarding application of our products on the last page.

## FRIALEN® SAFETY FITTINGS

### SPAI BALLOON SHUT OFF SADDLES AND CAP FOR BALLOON SHUT OFF SADDLES SPAK

#### Areas of Application

FRIALEN Balloon Shut off Saddles SPAI are suitable for blocking media by the use of commercially available shut off equipment or for vending/flushing.

The drill socket (stack) of a Balloon Shut off Saddle SPAI can be finally sealed with the FRIALEN Cap SPAK.

#### Assembly Instructions

The fusion of the HD-PE main and the FRIALEN Balloon Shut off Saddle SPAI as well as the FRIALEN Cap SPAK takes place by FRIALEN-fusing – leakproof and durable.

The pipe, the saddle and the stack have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for House Service and Supply pipings up to d 225"). This involves removing the oxide skin, cleaning the pipe covered by the saddle and the stack end.

Note for the assembly of SPAI 10 - 12 IPS:

The saddle is clamped onto the pipe with the FRIATOP clamping device (see pricelist "Technical Equipment"). Please read the "Assembly and Operating Instructions for FRIATOP clamping unit (Top-Loading)".

#### Good reasons for using the FRIALEN Balloon Shut off Saddles SPAI and the FRIALEN Cap SPAK:

- Compact construction
- HD-PE Saddle and Cap with exposed heating element for optimal heat transfer
- Extra wide fusion zones
- Cold zones to prevent the flow of molten material
- Compact part available for commercially available balloon shut off equipment and for tapping of the main
- Long and solid brass-male thread for a safe connection of the shut off equipment
- Female brass insert with thread, permanently and tightly anchored in the HD-PE-stack
- Permanently sealed by brass threaded plug
- Includes brass plug with an inserted square
- Protection against access to the stack by fusing on a FRIALEN Cap SPAK
- ASTM approved
- Additional barcode for tracing back the installed fitting (Traceability-Coding)
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection

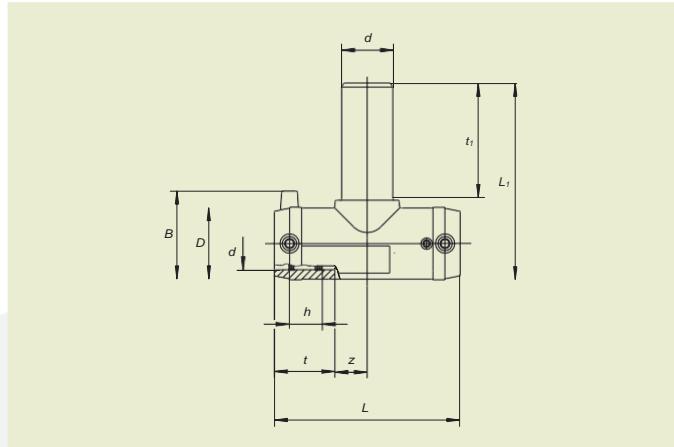
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TA

T- kus s predĺženou odbočkou rovnoramenný

**TA T-PIECES WITH EXTRA LONG OUTLET SPIGOT**



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	t	t <sub>1</sub>	z	h	B	Weight kg/each
25/25	616338	1	40	720	36	108	110	41	66	13	19	54	0.080
32/32	615719	1	30	540	44	116	131	39	80	19	22	61	0.120
40/40	615720	1	20	360	53	146	151	43	88	30	25	69.5	0.210
50/50	615721	1	10	180	67	175	186	49	110	38	28.5	80	0.360
63/63	615722	1	10	180	81	197	203	56	115	42	33	93.5	0.530

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness  $s \text{ min} \geq 3 \text{ mm}$ . Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8601AU2248

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## FRIALEN® SAFETY FITTINGS

### TA T-PIECES WITH EXTRA LONG OUTLET SPIGOT

#### Areas of Application

The FRIALEN-T pieces TA are used for pipe outlets of HD-PE pipelines.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN-TA takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared (removing the oxide skin/cleaning) according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225").

#### Good reasons for using the FRIALEN-TA:

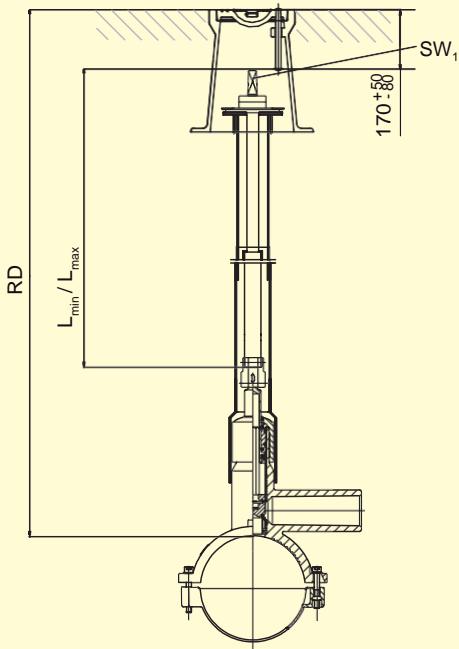
- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Length of outlet spigot dimensioned for two fusion operations
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Touch proof electric contacts
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

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**EBS****teleskopická zemná súprava pre DAV****FRIALEN® Installation kits for Pressure Tapping Valves EBS****FRIALEN®**

RD in m	Order Ref.	Stock-status	BX	PU	$L_{min}$	$L_{max}$	SW1	Weight kg/each
0,45-0,7	<b>615866</b>	1	1	42	260	370	14	1,740
0,7-1,0	<b>615867</b>	1	1	42	410	670	14	2,150
0,9-1,3	<b>615335</b>	1	1	42	525	980	14	2,650
1,2-1,8	<b>615325</b>	1	1	42	860	1570	14	3,600

Other length on request

Only applies when using FRIALEN Pressure Tapping Valves

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Please turn over for important information regarding application of our products.

# FRIALEN® Installation kits for Pressure Tapping Valves EBS

## Areas of Application

Telescopic actuating linkage for operation of the FRIALEN-DAV from the street cap.

## Assembly Instructions

Dimension RD valid for DAV  $d_1 = 90-125$ . For DAV  $d_1 < 90$  please deduct -50 mm and for  $d_1 > 125$  please add +50 mm (also see DAV dimension L).

Ten good reasons for using the FRIALEN-Installation kit EBS:

- w Stepless adjustment in the stated range ( $L_{min}$  /  $L_{max}$ ) without the use of tools
- w Self supporting in any extended position
- w Safe from pulling out
- w Assembly without tools
- w Corrosion proof
- w Telescopic installation kit can be extended even once it has been installed and filled
- w Constructive tuning of transferable torque to FRIALEN-DAV
- w Break-proof dome coupler
- w Stainless steel connecting pins
- w Parts of the protective pipe are fully welded together

For further information, please call our customer service staff and specialist advisers.

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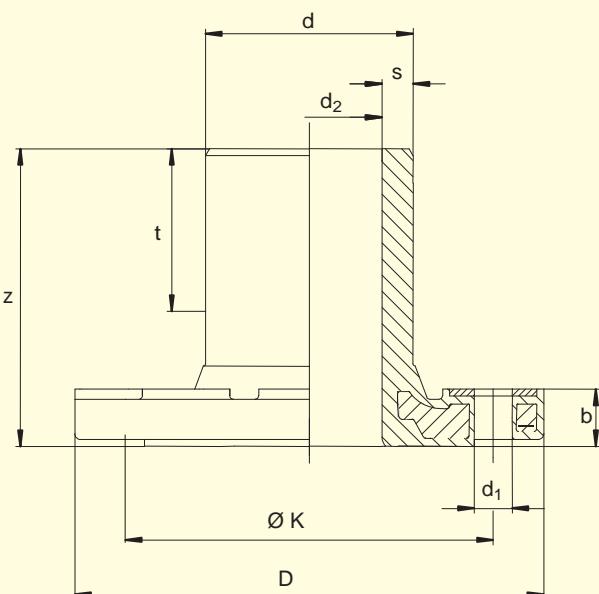
EFL

lemový nákružok s integrovanou prírubou

# FRIALEN® Full Faced Flanges (Spigot fittings) EFL PE 100 SDR 11

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

FRIALEN®



d/DN	Order Ref.	Stock-status	VE	PE	D	$\varnothing K$	$d_1$	$d_2$	t	z	b	s	Holes for screw	Weight kg/each
63/50	T-615 417	1	5	250	160	125	16,5	50,6	53	105	23	5,8	4	1,500
90/80	T-615 418	1	5	160	204	160	16,5	71,5	71	130	25	8,2	8	2,540
110/100	T-615 419	1	3	96	224	180	16,5	86,8	83	150	27	10,0	8	3,200
125/100	T-615 605	1	2	64	224	180	16,5	101,0	85	160	30	11,4	8	3,280
160/150	T-615 421	1	2	36	288	240	20,5	127,0	120	190	29	14,6	8	6,140
180/150	T-615 927	1	2	36	288	240	20,5	122,5	120	200	31	16,4	8	6,660
225/200 <sup>G)</sup>	T-615 607	1	1	27	343	295	20,5	179,5	120	225	31	20,5	8	9,100

G) Flange bore for PN 10

Please turn over for important information regarding the use of the  
FRIALEN® Full Faced Flanges.



# FRIALEN® Full Faced Flanges (Spigot fittings) EFL PE 100 SDR 11

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

## Areas of Application

The FRIALEN® Full Faced Flange EFL is used for the connection between HDPE and another material or valve up to PN 16.

EFL d 63-180 bolt circle for PN 10 and PN 16.

EFL d 225/DN 200 is available only with a PN 10 bolt circle.

## Assembly Instructions

The Full Faced Flange is installed without pressure. Please refer to the FRIALEN® Assembly Instructions regarding preparations for FRIALEN® fusion on the flange adaptor (marking insertion depth, removing oxide skin, cleaning etc.)

DIN EN 1092-1 applies to bolt circle diameter, measurements and number of bolts.

All commercial profile and flat gaskets can be used. Please observe the bolt torque specifications by the gasket manufacturer. We recommend profile gaskets type G-St.

## Three good reasons in favour of the FRIALEN®-Full Faced Flanges

- Flange adaptor and flange are one construction component and make a homogeneous unit
- The cold flowing properties well known with HDPE are avoided through this constructive configuration.
- Solid construction. Integration of the flange prevents tear-off.

For further information please call our FRIALEN®-customer service and specialist personnel

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FLR

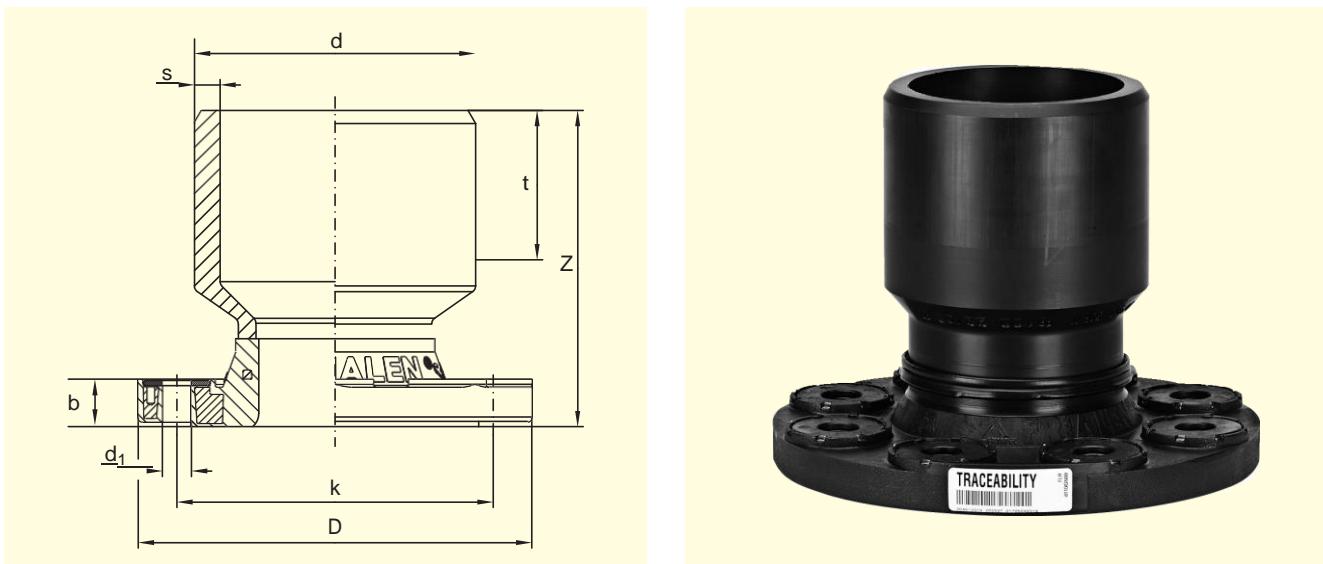
redukovaný lemový nákružok s integrovanou prírubou

FRIALEN®

# FRIALEN® FLR Flange Reducers

**PE 100 SDR 11**

Maximum operating pressure 16 bar (water)



Additional grommets required

d/DN	Order Number	Stock-status	VE	PE	D	ØK	d <sub>1</sub>	t	z	b	s	Number of screw holes	Weight kg/each
110/80	T-616 065	1	3	96	204	160	16.5	82	161	25	10	8	3.900
160/100	T-616 241	1	2	64	224	180	16.5	85	180	27	14.6	8	4.350
225/100	T-616 242	1	2	36	224	180	16.5	110	270	27	20.5	8	5.750

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Please turn over for important information regarding the application of  
**FRIALEN®-FLR**.



# FRIALEN® FLR Flange Reducers

## PE 100 SDR 11

Maximum operating pressure 16 bar (water)

### Area of Application

The FRIALEN® FLR flange reducer is used as material adapter. In addition, there are specific options for the direct connection of

- Flange valves in reduced branches in connection with a FRIALEN T-piece or a FRIALEN Spigot Saddle SA
- Hydrants at FRIALEN elbows with base WF 90° - d 110

The compact component ensures that the reduced flange connection is achieved easily, quickly and economically.

For the vertical connection of hydrants with elbows with base unit WF 90° or T-pieces T it is necessary to regard the height of coverage.

The constructive design eliminates the familiar cold flow behaviour of HD-PE around the flange connection. Protective measures against corrosion are not required.

### Processing Advice

Fusion of the pipe socket takes place according to the FRIALEN assembly instructions. Flange design according to DIN EN 1092-1. Grommets are required for the flange connections. All standard profile and flat gaskets may be used. We recommend profile gaskets type G-St. Please observe gasket manufacturers' instructions with regards to screw torque.

**Please call our FRIALEN® customer care team and specialist advisers for more information.**

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Y YS

rozdelovač Y s integrovanou elektrospojkou

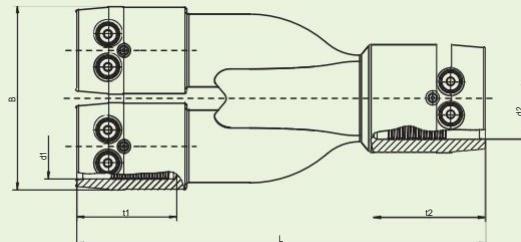
# FRIALEN® Geo Y- and YS-pieces

with integrated heating coils for the connection of  
borehole heat exchangers

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)

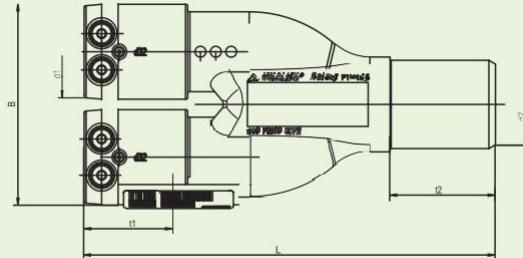
FRIALEN® eo



NEW: 8 mm coupler extension for more safety



Y-piece



YS-piece

**Y-piece**

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t <sub>1</sub>	t <sub>2</sub>	B	Weight kg/each
32	40	640034	1	28	504	205	50	56	92	0,240
40	50	640036	1	18	324	219	56	60	115	0,360

**YS-piece**

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t <sub>1</sub>	t <sub>2</sub>	B	Weight kg/each
32	40	640035	1	28	504	187	40	46	92	0,190
40	50	640037	1	18	324	203	46	50	115	0,300

The FRIALEN Geo Y- and YS-pieces can be fused with pipes made of PE 100, PE 100 Plus Geo CR respectively PE 100-RC of SDR stages 11 to 17.6.

SKZ Mark A 500 (SKZ HR 3.26)

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For important information on the use of the  
**FRIALEN® Geo Y-pieces**, please see on the back.



# FRIALEN® Geo Y- and YS-pieces

**with integrated heating coils for the connection of borehole heat exchangers**

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)

## Area of application

The FRIALEN® Geo Y- and YS-pieces are used for the connection of FRIALEN® Geo borehole heat exchanger pipes to be able to operate two or more circuits via a shut-off element or to quickly and efficiently create a direct connection to the heat pump.

FRIALEN® Geo Y- and YS-pieces have a smooth, hydraulically optimised internal contour for optimal flow conditions.

## Assembly instructions

The connection of the pipes with FRIALEN® Geo Y- and YS-pieces made by FRIALEN® electro-fusion is leak-proof and longitudinally strong.

The PE spigot end of the YS-pieces as well as the borehole heat exchangers- and connection pipes, made of PE 100 or PE 100 plus Geo CR respectively PE 100-RC, get prepared (removing oxide layer/cleaning), according to the general assembly instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225") and can be used for example with a FRIALEN® elbow 90°.

- less space required thanks to compact design
- reduces installation time thanks to integrated fusion couplers giving simultaneously processing safety
- leak-proof, longitudinally strong connection
- exposed, fixed heating coil for direct heat transfer to the pipe
- maximum stability through great wall thickness
- fusion indicators for visual fusion control
- barcode for fully automatic fusion with HDPE pipes from SDR stages 11 to 17.6, taking into consideration the ambient temperature (temperature compensation)
- flexible use enabled due the variation of either Y-piece (3 x coupler) or YS-piece (2 x coupler, 1 x spigot end)
- additional barcode for tracing back the component part (Traceability-Coding)
- durable batch marking
- individual foil wrap to prevent dirtying at building site
- touch proof electric contacts
- small annular gap for build-up of optimum joining pressure in the fusion zone

## Many good reasons for using the FRIALEN® Geo Y- and YS-pieces

- NEW: 8 mm coupler extension of the Y-piece for more safety when installing coiled pipe because of long guiding- and holding zones

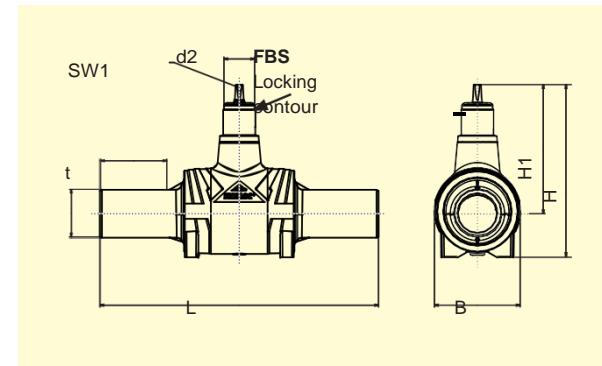
For further information, please ask our FRIALEN® Geo-Team. Simply call us!

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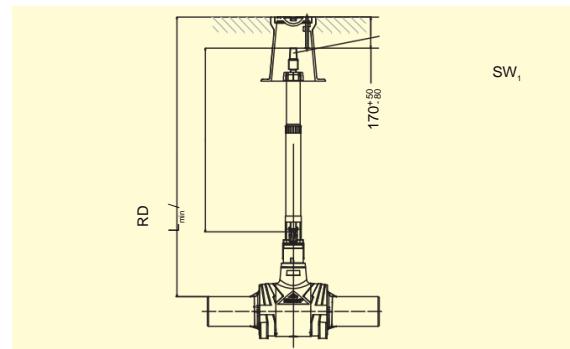
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**FRIALOC****uzatváracia armatúra s PE telesom****FRIALOC® Shut-Off Valve with shut-off mechanism  
suitable for plastics****PE 100 SDR 11**

Maximum working pressure 16 bar (water)

d	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t	B	H <sub>1</sub>	H	SW <sub>1</sub>	Turns Open/close	Weight kg/each.
90	80	616293	1	1	8	720	158	225	335	450	19	9	13,900
110	80	616294	1	1	8	720	164	225	335	450	19	9	14,200
125	80	616295	1	1	8	720	174	225	335	450	19	9	14,500
160	80	616296	1	1	2	1.010	196	330	450	608	19	14	37,900
180	80	616297	1	1	2	1.030	210	330	450	608	19	14	39,000
NEW <sup>**</sup> 200	80	616453 <sup>□</sup>	2	1	2	1.030	120	330	450	608	19	14	44,000
225	80	616298 <sup>□</sup>	1	1	2	1.030	124	330	450	608	19	14	45,500
NEW <sup>**</sup> 250	80	616438 <sup>□</sup>	2	1	2	1.030	132	330	450	608	19	14	46,000

Registered by DVGW under registration no. DW-6210BT0171. Please observe the marking directly at the product, which is mandatory.

<sup>□</sup> limited passage corresponds to dim. d 180**FBS** zemná súrava pre FRIALOC**FRIALEN® Installation kits FBS for FRIALOC® PE shut-off valves with KlickFix® system****bars of hot zinc dipped steel**

RD in m	Order Ref.	Stock-status	BX	PU	L <sub>min</sub>	L <sub>max</sub>	SW <sub>1</sub>	Weight kg/each
0,75 - 1,0	616308	2	1	42	397	571	30	2,500
0,9 - 1,3	616309	1	1	42	552	881	30	2,950
1,2 - 1,8	616310	1	1	42	817	1441	30	3,850
1,5 - 2,3	616318	2	1	42	1035	1847	30	4,400

**bars of stainless steel**

RD in m	Order Ref.	Stock-status	BX	PU	L <sub>min</sub>	L <sub>max</sub>	SW <sub>1</sub>	Weight kg/each
0,75 - 1,0	616315	2	1	42	397	571	30	2,400
0,9 - 1,3	616316	1	1	42	552	881	30	2,800
1,2 - 1,8	616317	1	1	42	817	1441	30	3,450
1,5 - 2,3	616319	2	1	42	1035	1847	30	4,150
2,4 - 3,5	616326	2	1	1	1875	3460	30	6,350

Please note: For FRIALOC from d 160 RD -0,1 m.

Other length on request.

Please turn over for important information regarding application of our products.

# FRIALOC® Shut-Off Valve with shut-off mechanism suitable for plastics

## Range of use / application

FRIALOC is used as shut-off valve in water piping systems. The free passage of the PE shut-off valve shows no constrictions with regard to the connecting pipe SDR 11. Actuation is made from the street cap using the installation kit FBS. Squared shaft end width across flats 19. Thanks to the innovative shut-off mechanism, activation is possible with only a few turns and without major force.

## Notes on processing

The FRIALOC shut-off valve is homogeneously connected to the PE piping by FRIALEN fusion using FRIALEN safety fittings. This requires no gaskets, material transitions, or mechanical connections. The homogeneous joint is permanently leak-tight and friction-locked. Corrosion protection is not required. The shut-off valve can also be integrated into existing piping networks made of other materials, e.g. using flanges.

Please observe the notes on the installation of the FRIALOC shut-off valve in the FRIALEN assembly instructions for house service and supply pipings up to d 225.

## Many good reasons for FRIALOC:

- w FRIALOC facilitates the completely fused and homogeneous PE piping without flanges and material transitions
- w Typically PE: no corrosion, no incrustation
- w Innovative two-flap mechanism for a reliable shut-off under all operating conditions

- w Low-wear drive: proven in fatigue test by 2,500 dynamic test cycles under maximum pressure
- w Hygiene: no stagnating water, minimised sealing area
- w Corrosion-resistant metal materials
- w Low actuation forces, smooth-running even given under full differential pressure
- w Optimal hydraulics thanks to a full-port passage, no constrictions (until d180)
- w Few turns for opening/closing
- w Significant weight saving compared to metal valves
- w Stable support in the ditch bottom thanks to large support area
- w Length of connecting couplers d90-d180 designed for two fusion processes, can be reduced for compact shape
- w Special contour for a pull-tight and dirt-proof connection to the protective pipe of the FRIALEN-FBS
- w Each single shut-off valve is inspected by the factory after mounting
- w Production data are saved, archived, and can be documented via a traceability barcode

## FRIALEN® Installation kits FBS Coupling sleeve with KlickFix® system

Optimally matched, telescopic activation bar to operate the FRIALOC PE shut-off valve from the street cap.

## Assembly instructions

Before fusion, the FRIALOC PE shut-off valve must be aligned corresponding to the planned actuation to guarantee a correct positioning of the FRIALEN installation kit (FBS).

## Ten good reasons for the installation kit FBS for FRIALOC PE shut-off valves:

- w easy and safe installation thanks to KlickFix® system
- w protective pipe of polyethylene protects from intrusion of sand or soil

- w pull tight connection between FRIALOC and protective pipe: solid and dirt-proof
- w assembly without tools
- w self-supporting in all telescopic positions
- w safe from being pulled out
- w corrosion-resistant
- w telescopic installation kit can also be adjusted even once in place and filled
- w constructive harmonizing of the transferable torque onto the FRIALOC PE shut-off valve
- w connexion pins made of stainless steel

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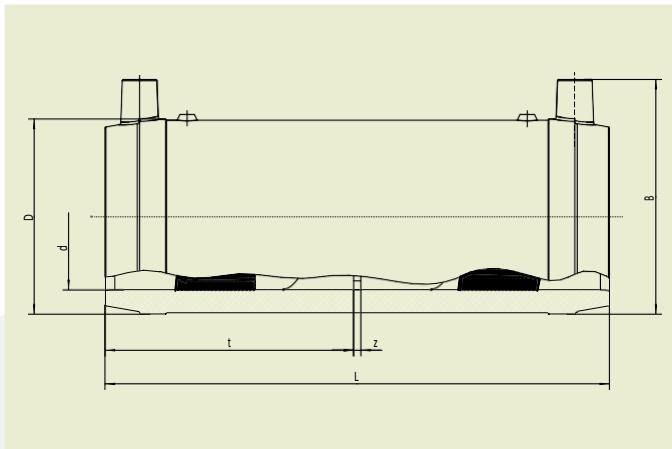
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## FRIALONG predĺžená presuvná spojka

### FRIALONG LONG COUPLERS WITH REMOVABLE CENTER STOP



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	B	Z	Weight kg/each
32	615736	1	40	1280	45	136	67	62	2	0,110
40	615737	1	30	960	54	146	72	72	2	0,140
50	615608	1	16	512	68	175	86	86	2	0,250
63	615738	1	10	320	82	197	97	97	2	0,370

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8601AU2248

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## FRIALEN® SAFETY FITTINGS

### FRIALONG LONG COUPLERS WITH REMOVABLE CENTER STOP

#### Areas of Application

The FRIALEN Long Coupler FRIALONG is the ideal connection coupler when installing pipes as coiled pipes for domestic connections from d 32 to d 63. This occurs when coiled pipes and weld-on ends of valves or house entries are joined together, and especially when both pipe ends come from coiled pipes.

#### Assembly Instructions

The fusion of pipe ends with the FRIALEN long coupler FRIALONG takes place using FRIALEN fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see „Assembly Instructions“ for FRIALEN Safety Fittings for house connections and distribution pipes (Remove oxide skin/clean). It is important to make sure that the outlet spigots of valves and fittings are at least half as long as the coupler.

#### Good reasons for using the FRIALEN Long Coupler FRIALONG:

- Increased installation safety when using coiled pipe in domestic connections
- Up to 80% longer than standard FRIALEN Couplers
- Extremely long guiding and retaining zones for taking up coiled pipe
- An alignment function for curved pipe ends is achieved by an extra large insertion depth within the coupler which includes long cold zones
- Exposed heating coil and exceptionally wide fusion zones ensure optimum heat transmission
- No additional tools (holding clamp) required
- All this means fewer and easier steps with increased safety during processing
- Center stop easily removable
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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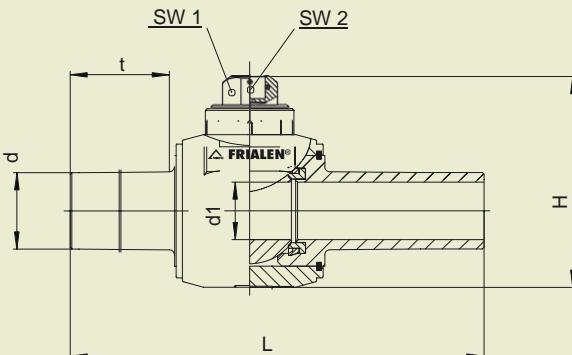
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## KH gul'ový kohút s tesnením NBR, plný prietok

FRIALEN® SAFETY FITTINGS

**KH BALL VALVES IN HD-PE WITH NBR-SEALING, 1/4-TURN,  
FULL PORT PASSAGE**



PE 100 SDR 11

Maximum working pressure 10 bar (gas)



d	d <sub>o</sub>	Order Ref.	Stock-status	Rx	Pu	L	t	SW <sub>1</sub>	SW <sub>2</sub>	H	Weight
20	24	616470	1	1	170	310	98	50 x 50	20	138	0.500
25	24	616471	1	1	170	310	98	50 x 50	20	138	0.550
32	34	616176	1	1	100	324	108	50 x 50	20	156	0.770
40	34	616177	1	1	100	324	108	50 x 50	20	156	0.800
50	43	616178	1	1	50	405	129	50 x 50	25	193	2.240
63	51	616179	1	1	50	410	134	50 x 50	25	206	2.420
90	98	616180	1	1	18	577	173	50 x 50	25	288	6.600
110	98	616181	1	1	18	577	173	50 x 50	25	288	6.750
125	98	616182	1	1	18	577	173	50 x 50	25	288	6.900

FRIALEN-Safety Fittings can be fused to pipes of SDR-stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm.

Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos.: DG-8631AU2251 and DG-8631AU2252

BS d 63 - d 225 required

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## FRIALEN® SAFETY FITTINGS

### **KH BALL VALVES IN HD-PE WITH NBR-SEALING, 1/4-TURN, FULL PORT PASSAGE**

#### Areas of Application

The FRIALEN-Ball Valve KH with NBR-sealing is suitable for shutting off sections of the main and also for isolating house connection pipes. The Ball Valve KH can be applied in pipe systems for gas supply and for compressed air.

The passage of the valve ( $d_1$ ) corresponds approx. with the internal diameter of the pipe socket SDR without constriction.

The Ball Valve KH is opened and closed by a 1/4-turn with the installation kit BS. The installation kit allows the operation from the street cap and is optimal adapted to the FRIALEN-Ball Valve KH. For further information see this data sheet page 2. or data sheet installation kit BS No. 22/00.

#### Assembly Instructions

The FRIALEN-Ball Valve KH is connected to the pipe by using Couplers, Elbows or T-Pieces fused to its ends. It is suitable both for shutting off sections of the main and also for isolating house connection pipes.

The connection with HD-PE pipes takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The spigot ends to be fused are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

Before fusion the FRIALEN-Ball Valve KH must be lined up to suit the type of actuation intended, in order to ensure that the installation kit BS will placed correctly.

#### Good reasons for using the FRIALEN-Ball Valve KH:

- The FRIALEN-Ball Valve provides a completely fused HD-PE pipe network, without transitions to other materials or flange connections
- Another step towards a pure PE-pipe system
- Good testability due to lack of constriction of internal diameter
- Floating ball, axial seals in the ball axle and combination of ball guidance and ball seal in one part compensate for bending defects
- No deposits on internal areas, resistant to chemical and electrical reactions
- No corrosion proofing required
- Optimum hydraulics due to pipe identical passage and contour providing ease of flow, optimum flow speed
- Low activating element, low weight
- Extra long spigot ends dimensioned for two fusion operations
- Actuating of the KH with the telescopic installation kit BS
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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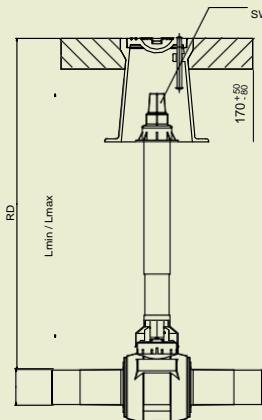
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**BS zemná súprava pre guľové ventily**

**BS INSTALLATION KITS FOR BALL VALVES AND TAPPING BALL VALVES  
(STANDARD AND TOP-LOADING)**



d	RD in m	Order Ref.	Stock-status	BX	PU	Lmin	Lmax	SW <sub>1</sub>	Weight kg/each
20-50	0,45-0,70	615741	1	1	42	398	543	30	1.800
20-50	0,60-1,00	615957	1	1	42	548	843	14	2.700
20-50	0,60-1,00	615328	1	1	42	490	785	30	2.000
20-50	1,00-1,50	616466	1	1	42	759	1303	14	3.400
20-50	1,00-1,50	615330	1	1	42	799	1343	30	3.400
20-50	1,20-2,00	616068	1	1	42	991	1785	14	3.450
20-50	1,20-2,00	615329	1	1	42	1049	1843	30	3.650
63-225	0,60-1,00	615958	1	1	42	537	812	14	2.050
63-225	0,60-1,00	615310	1	1	42	490	785	30	3.050
63-225	1,00-1,50	616467	1	1	42	746	1272	14	4.150
63-225	1,00-1,50	615331	1	1	42	786	1312	30	4.150
63-225	1,20-2,00	616069	1	1	42	980	1754	14	3.600
63-225	1,20-2,00	615311	1	1	42	1038	1812	30	5.250

Key width SW<sub>1</sub>, 14 mm for use as house connection fitting

Other length on request.

For full-port passage ball valve KH d50 select version BS d63-225

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## FRIALEN® SAFETY FITTINGS

### **BS** INSTALLATION KITS FOR BALL VALVES AND TAPPING BALL VALVES (STANDARD AND TOP-LOADING)

#### Areas of Application

Telescopic actuating linkage for operation of the FRIALEN KHP, KH, KHW, AKHP und AKHP-TL from the street cap.

#### Assembly Instructions

Before fusion, the FRIALEN KHP, KH, KHW, AKHP and AKHP-TL must be aligned to suit the type of actuation intended, in order to ensure that the installation kit BS will seat correctly.

#### Good reasons for using the FRIALEN-Installation kits BS:

- Protective pipe of polyethylene protects from intrusion of sand or soil
- Assembly without tools
- Self supporting in any extended position
- Safe from being pulled out
- Corrosion proof
- Telescope assembly set can be adjusted even once in place and filled
- Constructive harmonizing of the transferable torque onto the FRIALEN-Ball Valve
- Connection pins made from stainless steel
- Coloured marking disk for use with gas and water
- Parts of the protective pipe are fully welded together

#### Výrobca:

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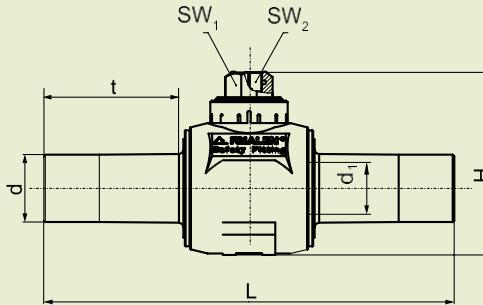
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**KHP**

gul'ový ventil s NBR tesnením

**KHP BALL VALVES IN HD-PE WITH NBR-SEALING, 1/4-TURN**



**PE 100 SDR 11**

**Maximum working pressure 10 bar (gas)**



d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	L	t	SW <sub>1</sub>	SW <sub>2</sub>	H	Weight kg/each
32	24	612490	1	1	170	310	96	50 x 50	20	136	0.540
40	24	612497	1	1	170	310	96	50 x 50	20	136	0.580
50	24	612492	1	1	170	310	96	50 x 50	20	136	0.680
63	43	612494	1	1	50	410	128	50 x 50	25	193	2.300
90	67	612495	1	1	24	553	154	50 x 50	25	241	4.200
110	67	612493	1	1	24	553	154	50 x 50	25	241	4.500
125	67	612496	1	1	24	553	154	50 x 50	25	241	5.200
160	98	612483	1	1	8	539	202	50 x 50	25	332	12.000
180	98	615309	1	1	8	539	202	50 x 50	25	332	12.500
200	98	612480	3	1	8	539	202	50 x 50	25	332	13.500
225	98	616186	1	1	8	539	202	50 x 50	25	332	14.500

FRIALEN-Safety Fittings can be fused to pipes of SDR-stages 11 to 17.6. Minimum wall thickness s min ≥ 3 mm.

Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos.: DG-8631AU2251, DG-8631AU2252 and DG-8631AU2253

**Výrobca:**

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Technical Plastics Division  
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## FRIALEN® SAFETY FITTINGS

### KHP BALL VALVES IN HD-PE WITH NBR-SEALING, 1/4-TURN

#### Areas of Application

The FRIALEN-Ball Valve KHP with NBR-sealing is suitable for shutting off sections of the main and also for isolating house connection pipes. The Ball Valve KHP can be applied in pipe systems for gas supply and for compressed air.

The Ball Valve KHP is opened and closed by a 1/4-turn with the installation kit BS. The installation kit allows the operation from the street cap and is optimal adapted to the FRIALEN-Ball Valve KHP. For further information see this data sheet page 2. or data sheet installation kit BS No. 22/00.

#### Assembly Instructions

The FRIALEN-Ball Valve KHP is connected to the pipe by using Couplers, Elbows or T-Pieces fused to its ends. It is suitable both for shutting off sections of the main and also for isolating house connection pipes.

The connection with HD-PE pipes takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The spigot ends to be fused are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

Before fusion the FRIALEN-Ball Valve KHP must be lined up to suit the type of actuation intended, in order to ensure that the installation kit BS will placed correctly.

#### Good reasons for using the FRIALEN-Ball Valve KHP:

- The FRIALEN-Ball Valve provides a completely fused HD-PE pipe network, without transitions to other materials or flange connections
- Another step towards a pure PE-pipe system
- Floating ball, axial seals in the ball axle and combination of ball guidance and ball seal in one part compensate for bending defects
- No deposits on internal areas, resistant to chemical and electrical reactions
- No corrosion proofing required
- Particularly little pressure loss, optimum flow speed
- Low activating element, low weight
- Extra long spigot ends dimensioned for two fusion operations
- Actuating of the KHP with the telescopicable installation kit BS
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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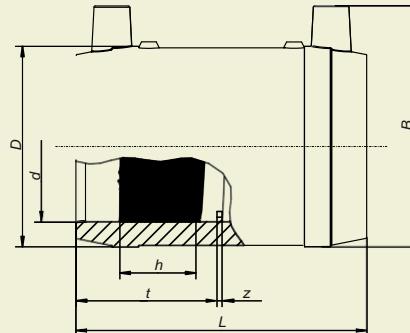
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**MB**

**Objímka so zarážkou**

## **MB COUPLERS WITH REMOVABLE STOP**



**PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
20	612680	1	110	3.520	33	60	29	2	17	49	0.040
25	612681	1	90	2.880	37	78	39	2	24	54	0.054
32	612682	1	60	1.920	45	78	38	2	21	61	0.064
40	612683	1	40	1.280	54	86	42	2	23	71	0.100
50	612684	1	25	800	68	98	48	2	27	82	0.150
63	612685	1	15	480	82	110	55	2	29	96	0.221
75	612686	1	50	400	98	122	60	3	32	110	0.360
90	612687	1	30	240	114	157	77	3	51	127	0.510
110	612688	1	24	192	137	159	78	3	49	152	0.710
125	612689	1	16	128	156	172	85	3	51	169	0.950
140	612690	1	12	96	174	184	91	3	52	185	1.270
160	612691	1	8	64	199	190	94	3	52	207	1.770

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8601AU2248 and DV-8606AU2249

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## FRIALEN® SAFETY FITTINGS

### MB COUPLERS WITH REMOVABLE STOP

#### Areas of Application

The FRIALEN-coupler MB is used for pipe connections when laying long runs. Additional areas of application:

- w Integration of adapters into an existing pipe-line
- w Connection of pipelines with fixed or restraint points
- w Reinforcement / sealing of localised pipe damage
- w Reinforcement of pinch points

#### Assembly Instructions

The fusion of pipe ends with the FRIALEN-coupler MB takes place using FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends. Please note that spigot of valves must be at least half as long as the coupler.

#### Good reasons for using the FRIALEN-Coupler MB:

- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Touch proof electric contacts
- w Fusion indicator for visual fusion control
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the fitting (Traceability-Coding)

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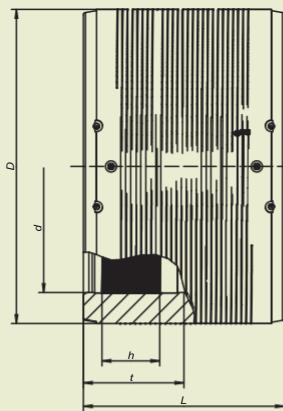
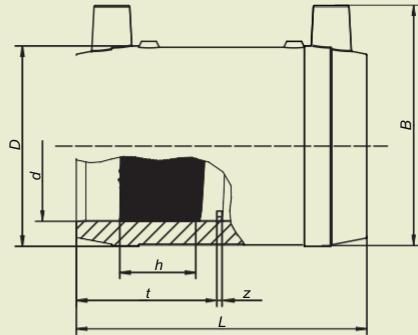
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## UB SDR 11 presuvná spojka

### UB SDR 11 SLIDE-OVER COUPLERS, SDR 11



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
16	616577	1	135	4.320	29	60	30	16	45	0.030
20	612660	1	110	3.520	33	60	30	17	49	0.037
25	612661	1	90	2.880	37	78	39	25	53	0.054
32	612662	1	60	1.920	45	77	39	21	61	0.064
40	612663	1	40	1.280	54	86	43	23	71	0.096
50	612664	1	25	800	68	98	49	27	82	0.151
63	612665	1	15	480	82	112	56	29	96	0.225
75	612666	1	50	400	98	122	61	32	110	0.360
90	612667	1	30	240	114	157	78	51	127	0.510
110	612668	1	24	192	137	159	79	49	152	0.705
125	612669	1	16	128	156	172	86	46	169	0.946
140	615001	1	12	96	174	184	92	52	185	1.270
160	612671	1	8	64	199	190	95	52	207	1.772
180	612672	1	6	48	220	210	105	63	228	2.088
200	612673	1	1	56	247	220	110	63	252	2.798
225	612674	1	1	36	277	236	118	71	280	3.950
250	612675	1	1	24	315	246	123	68	315	5.800
280	615073	1	1	18	347	285	142	56	347	7.740
315	612670	1	1	18	390	300	150	78	390	10.040
355	615074	1	1	9	445	300	150	68	445	14.600
400	615075	1	1	4	500	320	160	90	500	20.800
450	615076	1	1	4	560	340	170	79	560	30.000
500	615124	1	1	3	630	360	180	80	630	40.000
560	616312	1	1	2	715	380	190	95	715	55.000
630	616269	1	1	2	810	420	210	101	810	79.600
710	616313	1	1	1	900	442	210	108	900	101.000
800	616314	1	1	1	1000	500	250	136	1000	138.800
900	616440	3	1	1	1130	600	300	165	1130	210.300

Slide-over couplers d16 PE100 SDR11 are to be processed with pipes SDR11 and from d20 until d900 PE100 SDR11 are to be processed with pipes SDR11 / SDR17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8601AU2248, DV-8606AU2249 and DV-8611AU22500.

☒ separate fusion zones

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## FRIALEN® SAFETY FITTINGS

### UB SDR 11 SLIDE-OVER COUPLERS, SDR 11

#### Areas of Application

The FRIALEN-Coupler UB is used for cut and lay pipe connections.

Additional areas of application:

- Integration of adapters into an existing pipeline
- Connection of pipelines with fixed or restraint points
- Reinforcement / sealing of localised pipe damage
- Reinforcement of pinch points on small dimensions

#### Assembly Instructions

The fusion of pipe ends with the FRIALEN-Coupler UB takes place using FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225" and "FRIALEN-Special Technology for laying large bore pipes and relining pipe networks"). This involves removing the oxide skin and cleaning the pipe ends. Please note that spigot of valves must be at least half as long as the coupler.

To compensate a larger annular gap (> 1 mm, max. 3 mm) between coupler and pipe, the pre-heating barcode can be used for couplers UB from d 400 (see instructions packed up with the coupler).

For removal of the oxide layer, FWG scraper tools are available which facilitate a uniform swarf removal and a reproducible quality of the fusion area preparation.

#### Good reasons for using the FRIALEN-Slide-over Coupler UB:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Touch proof electric contacts
- Fusion indicators for visual fusion control
- From d 400: pre-heating technique for a optimal gap-bridging
- From d 400: External reinforcement for an ideal fusion pressure
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding).

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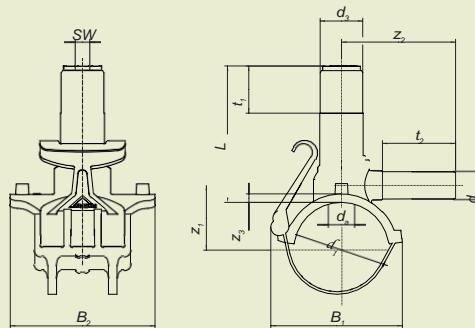
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**DAA**

**prípojková navŕtavacia armatúra**

**DAA PRESSURE TAPPING TEES WITH EXTRA LONG OUTLET SPIGOT**



**PE 100 SDR 11**

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



<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>Order Ref.</b>	<b>Stock-status</b>	<b>BX</b>	<b>PU</b>	<b>d<sub>3</sub></b>	<b>L</b>	<b>t<sub>1</sub></b>	<b>t<sub>2</sub></b>	<b>z<sub>1</sub></b>	<b>z<sub>2</sub></b>	<b>z<sub>3</sub></b>	<b>B<sub>1</sub></b>	<b>B<sub>2</sub></b>	<b>WS in mm</b>	<b>Drilling Ø d<sub>a</sub></b>	<b>Weight kg/each</b>
40	20	612630	1	30	240	50	120	50	66.00	32	105	8	85	136	17	25	0.370
40	25	616473	1	30	240	50	120	50	83.00	32	122	8	85	136	17	25	0.380
40	32	616474	1	30	240	50	120	50	86.00	32	125	8	85	136	17	25	0.385
50	20	616475	1	28	224	50	120	50	66.00	37	108	8	95	136	17	25	0.385
50	25	612702	1	28	224	50	120	50	83.00	37	125	8	95	136	17	25	0.390
50	32	615080	1	28	224	50	120	50	86.00	37	128	8	95	136	17	25	0.400
63	20	612631	1	20	160	50	130	50	66.00	51	100	10	108	146	17	25	0.450
63	25	612633	1	20	160	50	130	50	83.00	51	118	10	108	146	17	25	0.460
63	32	612632	1	20	160	50	130	50	86.00	51	123	10	108	146	17	25	0.465
63	63	616334	1	20	160	50	160	50	115.00	51	165	10	108	146	17	30	0.635
75	32	616482	1	24	192	50	130	50	86.00	57	126	10	120	146	17	25	0.485
90	20	616483	3	14	112	50	160	50	66.00	66	106	10	137	170	17	30	0.600
90	25	616484	1	14	112	50	160	50	83.00	66	123	10	137	170	17	30	0.610
90	32	612634	1	14	112	50	160	50	86.00	66	126	10	137	170	17	30	0.615
90	63	612701	1	14	112	50	160	50	115.00	66	168	10	137	170	17	30	0.730
110	20	616487	3	14	112	50	160	50	66.00	76	111	10	152	170	17	30	0.620
110	25	616488	1	14	112	50	160	50	83.00	76	128	10	152	170	17	30	0.625
110	32	612637	1	14	112	50	160	50	86.00	76	134	10	152	170	17	30	0.630
110	63	612624	1	14	112	50	160	50	115.00	76	175	10	152	170	17	30	0.780
125	20	616491	3	12	96	50	160	50	66.00	83	111	10	167	170	17	30	0.650
125	25	616492	1	12	96	50	160	50	83.00	83	131	10	167	170	17	30	0.655
125	32	612649	1	12	96	50	160	50	86.00	83	138	10	167	170	17	30	0.670
125	63	612309	1	12	96	50	160	50	115.00	83	180	10	167	170	17	30	0.800
140	32	616495	1	12	96	50	160	50	86.00	91	141	10	170	170	17	30	0.700
140	63	616496	1	12	96	50	160	50	115.00	91	185	10	170	170	17	30	0.830
160	20	616497	1	10	80	50	160	50	66.00	106	108	10	195	186	17	30	0.730
160	25	616498	1	10	80	50	160	50	83.00	106	128	10	195	186	17	30	0.735
160	32	612641	1	10	80	50	160	50	86.00	106	137	10	195	186	17	30	0.745
160	63	612650	1	10	80	50	160	50	115.00	106	185	10	195	186	17	30	0.875
180	20	616501	3	10	80	50	190	50	66.00	116	110	10	203	186	17	30	0.785
180	25	616502	3	10	80	50	190	50	83.00	116	132	10	203	186	17	30	0.790
180	32	612651	1	10	80	50	190	50	86.00	116	141	10	203	186	17	30	0.790
180	63	612652	1	10	80	50	190	50	115.00	116	188	10	203	186	17	30	0.940
200	32	612654	1	8	64	50	190	50	86.00	126	144	10	205	186	17	30	0.810
200	63	612659	1	8	64	50	190	50	115.00	126	190	10	205	186	17	30	0.950
225	32	612657	1	8	64	50	190	50	86.00	138	146	10	214	186	17	30	0.835
225	63	612655	1	8	64	50	190	50	115.00	138	197	10	214	186	17	30	0.980

FRIALEN Pressure Tapping Tees d 40 can be fused to pipes SDR 11 and  $\geq d$  50 to pipes SDR 11 - 17.6.

Other SDR on request. Please observe the marking directly at the product, which is mandatory.

## FRIALEN® SAFETY FITTINGS

### DAA PRESSURE TAPPING TEES WITH EXTRA LONG OUTLET SPIGOT



#### Areas of Application

The FRIALEN Pressure Tapping Tees DAA are used as branch fittings and can be fused to mains that are unpressurised or under operating pressure.

#### Assembly Instructions

The fusion of FRIALEN Pressure Tapping Tee DAA to the PE-HD main and the service pipe takes place by FRIALEN fusing - leakproof and longitudinally strong.

The pipe, saddle and the outlet spigot are prepared (oxide layer removed/cleaned) in accordance with the general installation instructions (see "Assembly instructions" for FRIALEN Safety Fittings for house connections and distribution pipes up to d 225).

Thanks to its innovative and patented clamping mechanism, the FRIALEN Pressure Tapping Tee DAA can also be installed without any tool quickly and reliably on the HD-PE main when it exhibits ovality or has expanded under operating pressure.

#### Good reasons for using the FRIALEN Pressure Tapping Tees DAA:

- w Compact design
- w Simple and reliable assembly without any tool thanks to the patented fast clamping lever
- w The flexible saddle compensates pipe tolerances and always provides optimal, uniform buildup of melt pressure during fusion
- w Assembly without rounding clamps or special tools
- w The Pressure Tapping Tee is one unit with captive parts
- w Only one 17 mm wrench size for tapping and installing the plug
- w Chipless tapping
- w Leak-free tapping of gas mains under operating pressure up to 10 bar
- w Low torque needed for tapping
- w Punched-out pipe piece fits securely in the drill
- w Stable thread as guidance for the driller during tapping process even at large pipe wall thicknesses and low temperatures
- w Solid upper and lower stop of driller, with integrated torque limiter
- w Extra wide fusion zone
- w After tapping, stack can be fused non-accessible with FRIALEN cap K
- w Outlet spigot length measured for two fusion operations
- w Additional barcode for traceability (traceability coding)
- w Both barcodes exposed on fast clamping lever for easy scanning with readerwand or barcode scanner

#### Výrobca:

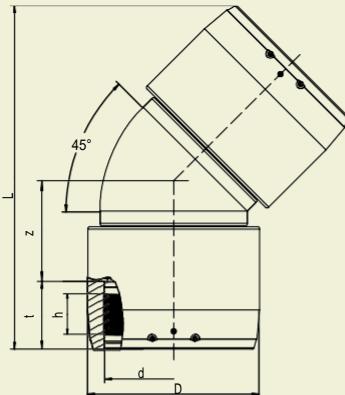
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## W45 XL      elekrotvarovkové koleno XL 45°

### W45 XL ELBOWS 45° XL



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	Weight kg/each
250	616404	1	1	6	310	621	128	176	80	17.300
280	616405	1	1	4	350	702	139	205	84	25.600
315	616406	1	1	2	396	755	150	215	80	36.000

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request.

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos. DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250.

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## FRIALEN® SAFETY FITTINGS

### W45 XL ELBOWS 45° XL

#### Areas of Application

The FRIALEN XL Elbow W45° is used for all changes of direction in HD-PE pipes.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN XL Elbow W45° takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN XL large pipe technology for laying large pipes and relining pipe networks"). This involves removing the oxide layer and cleaning the pipe ends.

#### Good reasons for using the FRIALEN XL Elbow W45°:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

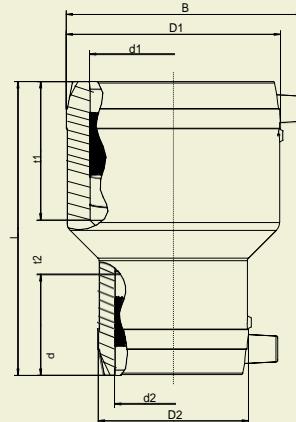
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## MR elektrotvarovková redukcia

### MR ELECTROFUSION REDUCERS



PE 100 SDR 11

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

	d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t <sub>1</sub>	t <sub>2</sub>	D <sub>1</sub> /D <sub>2</sub>	B	Weight kg/each
	32	16	616452	3	70	2.240	91	39	34.00	45/28	62	0.060
<b>NEW</b>	32	20	615386	1	80	2560	88	39	30.00	45/32	62	0.060
	32	25	615502	1	70	2240	88	39	33.00	45/38	62	0.070
	40	20	615387	1	60	1920	98	43	30.00	54/32	70	0.080
	40	32	615388	1	50	1600	98	43	39.00	54/45	70	0.090
	50	20	612069	1	32	1024	110	49	37.00	68/32	82	0.130
	50	32	612070	1	32	1024	110	49	39.00	68/45	82	0.140
	50	40	612071	1	25	800	110	49	43.00	68/54	82	0.140
	63	32	615389	1	18	576	125	55	44.00	82/45	96	0.210
	63	40	615390	1	16	512	125	55	43.00	82/54	96	0.220
	63	50	612072	1	16	512	125	55	48.00	82/68	96	0.230
<b>NEW</b>	75	63	616583	1	15	270	143	61	55.00	94/79	110	0.325
	90	50	615391	1	15	270	160	69	49.00	117/68	129	0.470
	90	63	615392	1	15	270	160	69	55.00	117/82	129	0.510
<b>NEW</b>	90	75	616582	1	15	270	159	67	63.00	113/94	127	0.505
	110	63	615393	1	10	180	160	79	55.00	142/82	152	0.730
	110	90	615693	1	8	144	180	79	69.00	140/115	152	0.900
	125	90	615694	1	8	144	200	86	69.00	155/115	166	0.980
<b>NEW</b>	125	110	616510	1	16	128	202	95	70.00	157/137	172	1.300
	160	110	615695	1	8	64	230	98	79.00	201/140	207	1.990
<b>NEW</b>	180	125	616511	1	1	60	275	108	74.00	214/155	230	2.600
	225	160	616356	1	1	36	270	110	98.00	282/203	283	4.860

FRIALEN safety fittings can be fused to pipes SDR11 - SDR17.6 with exception of the dimensions d 125/110 and d 180/125.

These dimensions can be fused to pipes SDR9 - SDR26. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request.

Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8601AU2248 and DV-8606AU2249

#### Výrobca:

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# FRIALEN® SAFETY FITTINGS

## MR ELECTROFUSION REDUCERS

### Areas of Application

The FRIALEN Electrofusion Reducer MR is applied for immediate pipe reduction within the pipe system.

### Assembly Instructions

Fusing of pipe ends with the FRIALEN Electrofusion Reducers MR takes place by FRIALEN fusion – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (note "Assembly Instructions" for FRIALEN Safety Fittings for house connections and distribution pipes (Remove oxide skin/clean)).

### Good reasons for using the FRIALEN Electrofusion Reducers MR:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Touch proof electric contacts
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

Výrobca:

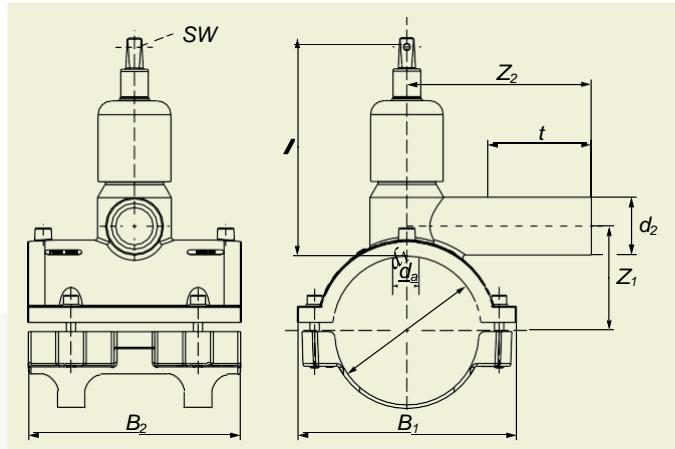
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## DAV prípojkový ventil s navŕtavacou armatúrou

### DAV PRESSURE TAPPING VALVES WITH EXTRA LONG OUTLET SPIGOT



PE 100 SDR 11

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

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t	z <sub>1</sub>	z <sub>2</sub>	B <sub>1</sub>	B <sub>2</sub>	Drilling Ø d <sub>a</sub>	Turns Open/close	Weight kg/each
50	32	615955	1	16	288	164	89	45	117	85	95	20	7.00	1.310
63	32	615341	1	16	288	164	85	53	115	98	105	20	7.00	0.950
63	40	615342	1	16	288	164	92	56	125	98	105	20	7.00	0.970
75	32	615956	1	12	216	164	88	59	130	113	125	20	7.00	1.390
90	32	615344	1	12	96	200	84	71	126	146	150	30	7.00	1.750
90	50	615346	1	12	96	200	105	74	152	146	150	30	7.00	1.800
90	63	615347	1	12	96	200	118	74	166	146	150	30	7.00	1.870
110	32	615348	1	10	80	200	84	80	126	170	180	30	7.00	1.990
110	50	615350	1	10	80	200	104	82	155	170	180	30	7.00	2.060
110	63	615351	1	10	80	200	118	82	180	170	180	30	7.00	2.120
125	32	615352	1	10	80	200	83	84	133	190	185	30	7.00	2.185
125	50	615354	1	10	80	200	102	89	160	190	185	30	7.00	2.245
125	63	615355	1	10	80	200	115	82	180	190	185	30	7.00	2.320
140	63	615930	1	10	80	200	115	90	180	210	185	30	7.00	2.290
160	32	615356	1	6	48	251	82	115	124	225	200	30	10.00	2.670
160	50	615358	1	6	48	251	104	119	154	225	200	30	10.00	2.750
160	63	615359	1	6	48	251	117	124	176	225	200	30	10.00	2.810
180	32	615361	1	5	40	251	82	125	124	242	200	30	10.00	2.680
180	50	615363	1	5	40	251	104	129	154	242	200	30	10.00	2.760
180	63	615364	1	5	40	251	117	134	176	242	200	30	10.00	2.820
200	32	615366	3	5	40	251	82	135	124	263	220	30	10.00	2.770
200	50	615368	3	5	40	251	111	139	154	263	220	30	10.00	2.830
200	63	615369	1	5	40	251	117	142	176	263	220	30	10.00	2.900
225	32	615374	1	5	40	251	82	148	124	274	220	30	10.00	2.790
225	50	615376	1	5	40	251	111	152	154	274	220	30	10.00	2.850
225	63	615377	1	5	40	251	117	155	176	274	220	30	10.00	2.920

FRIALEN-Pressure Tapping Valves DAV ≤ d 63 can be used for pipes of SDR stage 11 and > d 63 of SDR stages 11 to 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-6611AU2255

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## FRIALEN® SAFETY FITTINGS

### DAV PRESSURE TAPPING VALVES WITH EXTRA LONG OUTLET SPIGOT

#### Areas of Application

The FRIALEN-Pressure Tapping Valves DAV are used for branches of unpressurised and pressurised gas and water pipelines. Outlet spigots are prepared for receiving gas flow controllers. Dimensions on request.

#### Assembly Instructions

The fusion of the HD-PE distribution pipes and the house connections with FRIALEN-Pressure Tapping Valves takes place by FRIALEN-fusing – leakproof and longitudinally strong.

For tapping as well as "OPEN/CLOSE" an amount of turns with the key are required as follows:

- 10 turns for d 160-225
- 7 turns for d 50-140

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe covered by the saddle as well as the outlet spigot and the pipe end.

#### Good reasons for using the FRIALEN-DAV:

- w Only 7-10 turns to activate "OPEN/CLOSE"
- w Simplified appliance due to little drilling strengths
- w Higher flow result, less loss of pressure: in position "OPEN" the drill is not in the floating cross-section
- w Fusing and drilling of the main under maximum permitted working pressure gas/water
- w Compact part in HD-PE
- w Preassembled unit without loose parts
- w No preventive measures necessary with regard to corrosion
- w Actuating spindle in stainless steel
- w Swarfless tapping due to rotating punching drill made of stainless steel
- w Punched-out pipe piece fits securely in drill
- w Drill with upper and lower stop
- w Length of outlet spigot dimensioned for two fusion operations
- w Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN-EBS)
- w Additional barcode for tracing back the fitting (Traceability-Coding)

#### Výrobca:

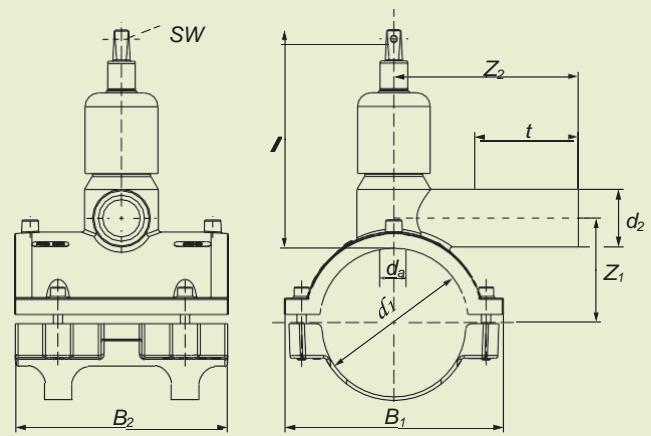
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## DAV kit prípojkový ventil s navŕtavacou armatúrou a spojkou

### DAV KIT PRESSURE TAPPING VALVES WITH EXTRA LONG OUTLET SPIGOT IN KIT VERSION



PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t	z <sub>1</sub>	z <sub>2</sub>	B <sub>1</sub>	B <sub>2</sub>	Drilling Ø d <sub>a</sub>	Weight kg/each
63	32	615614	1	16	288	164	85	53	115	98	105	20	1.445
63	40	615615	1	16	288	164	85	55	125	98	105	20	1.490
90	32	615616	1	12	96	200	84	71	126	146	150	30	1.835
90	40	615617	1	12	96	200	105	74	152	146	150	30	1.970
110	32	615620	1	10	80	200	85	75	130	175	180	30	1.995
110	40	615621	1	10	80	200	50	80	110	175	180	30	2.160
110	50	615622	1	10	80	200	105	80	160	175	180	30	2.170
110	63	615623	1	10	80	200	115	75	180	175	180	30	2.270
125	32	615624	1	10	80	200	85	80	145	190	185	30	2.250
125	40	615625	1	10	80	200	50	85	110	190	185	30	2.385
125	50	615626	1	10	80	200	105	85	165	190	185	30	2.395
125	63	615627	1	10	80	200	115	80	180	190	185	30	2.540
160	32	615628	1	6	48	251	82	115	124	225	200	30	2.815
160	40	615629	1	6	48	251	104	119	154	225	200	30	2.965
160	50	615630	1	6	48	251	104	119	154	225	200	30	2.975
160	63	615631	1	6	48	251	117	124	176	225	200	30	3.105
180	32	615632	1	5	40	251	82	125	124	235	200	30	2.825
180	40	615633	1	5	40	251	104	129	154	235	200	30	2.975
225	32	615640	1	5	40	251	85	147	130	260	195	30	2.935
225	40	615641	1	5	40	251	60	144	115	260	195	30	3.070

FRIALEN-Pressure Tapping Valves DAV ≤ d 63 can be used for pipes of SDR stage 11 and > d 63 of SDR stages 11 to 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-6611AU2255

■ with electrofusion reducers MR d 50/40.

Výrobca:

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# FRIALEN® SAFETY FITTINGS

## DAV KIT PRESSURE TAPPING VALVES WITH EXTRA LONG OUTLET SPIGOT IN KIT VERSION

### Areas of Application

The FRIALEN-Pressure Tapping Valves DAV are used for branches of unpressurised and pressurised gas and water pipelines. Outlet spigots are prepared for receiving gas flow controllers. Dimensions on request.

### Assembly Instructions

The fusion of the HD-PE distribution pipes and the house connections with FRIALEN-Pressure Tapping Valves takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The connection to the house connection pipe is carried out by means of the enclosed coupler FRIALEN-MB or reducer FRIALEN-MR. The saddle and the outlet spigot have to be handled (removing of the oxide layer/cleaning) according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225").

### Good reasons for using the FRIALEN-DAV:

- Only 7-10 turns to activate "OPEN/CLOSE"
- Simplified appliance due to little drilling strengths
- Higher flow result, less loss of pressure: in position "OPEN" the drill is not in the floating cross-section
- Fusing and drilling of the main under maximum permitted working pressure gas/water
- Compact part in HD-PE
- Preassembled unit without loose parts
- No preventive measures necessary with regard to corrosion
- Actuating spindle in stainless steel
- Swarfless tapping due to rotating punching drill made of stainless steel
- Punched-out pipe piece fits securely in drill
- Drill with upper and lower stop
- Length of outlet spigot dimensioned for two fusion operations
- Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN-EBS)
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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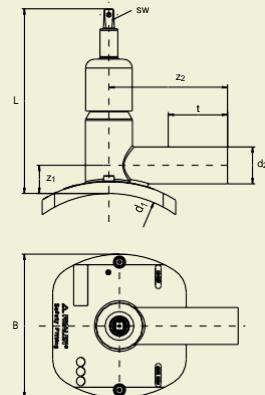
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**DAV TL**

prípojkový ventil s navŕtavacou armatúrou Top Loading

**DAV TL** PRESSURE TAPPING VALVE TOP-LOADING WITH EXTRA LONG  
OUTLET SPIGOT



**PE 100 SDR 11**

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t	z <sub>1</sub>	z <sub>2</sub>	B	Drilling α d	Turns Screwdriver	Weight kg/pc
250-315	63	616464	1	7	56	251	117	42	176	220	30	10.00	2.455
355-400	63	616465	1	7	56	251	117	42	176	220	30	10.00	2.459

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

Other outlet dimensions with Electrofusion Reducers MR.

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## FRIALEN® SAFETY FITTINGS

### DAV TL PRESSURE TAPPING VALVE TOP-LOADING WITH EXTRA LONG OUTLET SPIGOT

#### Areas of Application

FRIALEN-Pressure Tapping Valve DAV-TL is used for branches of unpressurised and pressurised pipes for the variable adaptation to all pipe diameters within the indicated range.

#### Assembly Instructions

The fusion of the HD-PE distribution pipes and the house connections with the FRIALEN-Pressure Tapping Valves takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Large pipe technique and pipe network relining"). This involves removing the oxide skin, to clean and clamp the construction part onto pipe using FRIALEN clamping device FRIATOP.

#### Good reasons for using the FRIALEN-DAV:

- Only 10 turns to activate "OPEN/CLOSE"
- Simplified use due to low drilling torque
- Fusing and drilling of the main under maximum working pressure gas/water
- Compact part in HD-PE
- Preassembled unit without loose parts
- No preventive measures necessary with regard to corrosion
- Actuating spindle in stainless steel
- Swarfless tapping due to rotating punching drill made of stainless steel
- Punched-out pipe piece remains securely in drill
- Drill with upper and lower stop
- Length of outlet spigot dimensioned for two fusion operations
- Maintenance free, operating isolating valve actuated by a linkage (e.g. FRIALEN-EBS)
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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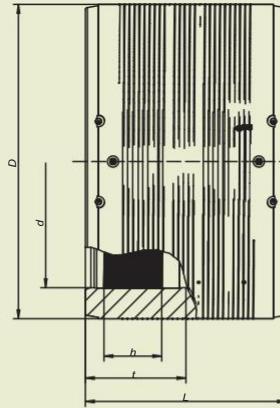
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## UB SDR 17 presuvná spojka

### UB SDR 17 SLIDE-OVER COUPLERS, SDR 17



PE 100 SDR 17

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
315	616529	1	1	18	356	280	140	72	358	5.880
355	616530	1	1	9	400	290	145	70	402	7.600
400	616531 ②	1	1	9	450	300	150	78	452	10.100
450	616532 ②	1	1	3	506	320	160	87	508	13.650
500	616533 ②	1	1	3	562	350	175	85	564	18.250
560	615706 ②	1	1	2	630	380	190	77	632	24.190
630	615726 ②	1	1	2	710	420	210	101	712	34.870
710	615994 ②	1	1	2	800	442	221	80	802	46.000
800	616290 ②	1	1	1	900	500	250	137	902	65.900
900	616345 ② ②	3	1	1	1024	500	250	110	1026	91.500
1000	616403 ② ②	3	1	1	1130	610	305	129	1132	128.000
1200	616416 ② ②	3	1	1	1356	670	335	155	1358	205.000

Slide-over couplers from d315 until d1200 PE100 SDR17 are to be processed with pipes SDR 26 - 17. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8611AU2250 and DW-8610CN0420.

② separate fusion zones

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## FRIALEN® SAFETY FITTINGS

### UB SDR 17 SLIDE-OVER COUPLERS, SDR 17

#### Areas of Application

The FRIALEN-Coupler UB is used for cut and lay pipe connections.

Additional areas of application:

- Integration of adapters into an existing pipeline
- Connection of pipelines with fixed or restraint points
- Reinforcement / sealing of localised pipe damage
- Reinforcement of pinch points on small dimensions

#### Assembly Instructions

The fusion of pipe ends with the FRIALEN-Coupler UB takes place using FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225" and "FRIALEN-Special Technology for laying large bore pipes and relining pipe networks"). This involves removing the oxide skin and cleaning the pipe ends. Please note that spigot of valves must be at least half as long as the coupler.

To compensate a larger annular gap (> 1 mm, max. 3 mm) between coupler and pipe, the pre-heating barcode can be used for couplers UB from d 560 (see instructions packed up with the coupler). Preheating is already integrated in the two-phase fusion process of the couplers UB-XL from d 1000.

For removal of the oxide layer, FWSG scraper tools are available which facilitate a uniform swarf removal and a reproducible quality of the fusion area preparation.

For large couplers UB-XL from d 1000, the powerful fusion unit FRIAMAT XL is to be used. The FRIAMAT XL is an all-purpose unit and operates with an input voltage of 400V, output voltage of max. 80V.

#### Good reasons for using the FRIALEN-Slide-over Coupler UB:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Touch proof electric contacts
- Fusion indicators for visual fusion control
- From d 560: pre-heating technique for a optimal gap-bridging
- From d 315: External reinforcement for an ideal fusion pressure
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding).

#### Výrobca:

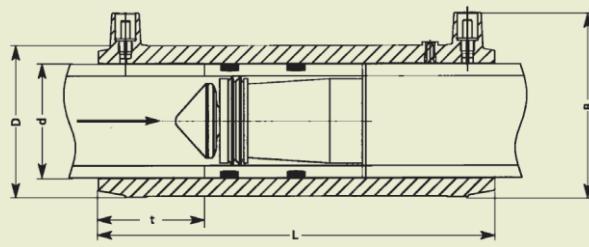
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## FRIASTOPP *pipe life*      spojka s integrovanou spätnou klapkou

### FRIASTOPP LONG COUPLERS WITH INTEGRATED PIPELIFE GAS-STOP™ SYSTEM



PE 100 SDR 11

Maximum working pressure type U, U<sub>UE</sub>, S: 5 bar (gas), type A/D: 1 bar (gas)



d	Type	Order Ref.	Stock-status	BX	PU	D	L	t	Operating pressure range p <sub>min</sub> - p <sub>max</sub>	VN	Weight kg/each
32	U	616199	1	40	1280	45	136	38	35 mbar - 5 bar	16 - 38	0.140
50	U	616201	1	20	640	68	175	54	35 mbar - 5 bar	38 - 91	0.350
63	U	616203	1	12	384	82	197	59	35 mbar - 5 bar	58 - 140	0.560
32	UUE	616200	1	40	1280	45	136	38	35 mbar - 5 bar	16 - 38	0.140
50	UUE	616202	1	20	640	68	175	54	35 mbar - 5 bar	38 - 91	0.350
63	UUE	616204	1	12	384	82	197	59	35 mbar - 5 bar	58 - 140	0.560
32	A/D	616205	1	40	1280	45	136	38	25 mbar - 1 bar	10 - 14	0.140
50	A/D	616207	1	20	640	68	175	54	25 mbar - 1 bar	25 - 36	0.350
63	A/D	616209	1	12	384	82	197	59	25 mbar - 1 bar	40 - 55	0.560
32	S	616339	1	40	1280	45	136	38	200 mbar - 5 bar	36 - 80	0.140
50	S	616340	3	20	640	68	175	54	200 mbar - 5 bar	110 - 240	0.350
63	S	616341	3	12	384	82	197	59	200 mbar - 5 bar	180 - 400	0.560

p<sub>min</sub> – p<sub>max</sub>: min. – max. operating pressure, i. e. incoming pressure Pipelife Gas-Stop™.

V<sub>N</sub>: nominal flow in m<sup>3</sup>/h for p<sub>min</sub> – p<sub>max</sub>, related to natural gas (d = 0.6 in standard condition 1013.25 mbar, 0°C)

The **Universal type U** meets perfectly the practical requirements of the operating pressure range and the required flow volume. Type U is available without, or as type U<sub>UE</sub> with surplus flow opening.

The **Special type S** is designed for high nominal flow rates and adapted to the flow capacities of standard pressure regulators.

Type A/D, U<sub>UE</sub>, S: FRIASTOPP-Pipelife Gas-Stop™With surplus flow device

Surplus flow volume

A/D: 30 l/h with 100 mbar

U<sub>UE</sub> and S: 30 l/h with 1 bar.

**Type U, S:** FRIASTOPP-Pipelife Gas-Stop™ without surplus flow device

Leak rate 3.0 l/h.

Other types on request.

FRIALEN-Safety fittings can be fused to pipes SDR 11 – 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos.

FRIALONG = DV-8601AU2248.

Pipelife Gas-Stop™ according DVGW G 5305-2 (01.10.2013) = DG-4360BP0060.

## FRIALEN® SAFETY FITTINGS

# FRIASTOPP LONG COUPLERS WITH INTEGRATED PIPELIFE GAS-STOP™ SYSTEM

### Areas of Application

FRIASTOPP is used for gas and service lines according to DVGW G459-1 appendix (12/03) with operating pressure from 25 mbar – 5 bar.

FRIASTOPP is a safety device which automatically cuts off the gas flow in the event of pipe damage, e.g. caused by dredging or drilling.

FRIASTOPP is best installed in the branch between mains and service line, immediately behind the service line valve. The Pipelife Gas-Stop™ type selection takes place according to the minimum operating pressure and the required flow output based on consumption.

The **universal type U** covers the practical requirements of the operating pressure range and the required flow volume perfectly. Type U is available without, or as Type U<sub>UE</sub>, with surplus flow opening.

### Functions

(see also leaflet on technical data "Pipelife Gas-Stop™" by Pipelife Austria GmbH & Co KG, <http://www.pipelife-gasstop.com>).

FRIASTOPP shuts off automatically at a defined gas flow as typically occurs with damaged gas service lines. Gas flow is cut off instantaneously and completely. The types A/D, U<sub>UE</sub> and S have surplus flow devices. The surplus flow amount available increases the pressure in the intact gas line allowing the Gas-Stop™ to reopen automatically.

Type A/D, U<sub>UE</sub> and S: Pipelife Gas-Stop™ with surplus flow device:

surplus flow amounts over 30 l/h require additional passive safety measures according to DVGW-G459-1-B.

Types U and S without surplus flow opening are reopened when counter pressure (approx. mains pressure) is applied. It does not need to be made accessible for this purpose.

### Assembly Instructions

FRIASTOPP is to be processed according to the installation and operating instructions which come with each FRIASTOPP.

Constricting the gas route by means of FRIASTOPP is possible up to 10 bar regardless of whether the Gas-Stop™ is open or shut. The initial mains pressure of the component can be gleaned from the data plate:

- purple data plate (Type U) for 35 mbar to 5 bar
- blue data plate (Type A/D) for 25 mbar to 1 bar
- red data plate (Type S) for 200 mbar to 5 bar.

The use of this component should be marked at the main shut-off device of the building (appropriate label is included in the delivery).

Fusion of FRIASTOPP with the HD-PE service line takes place using the FRIALEN-fusion process – leakproof and longitudinally strong.

Installation is prepared according to the general installation requirements (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"), i.e. remove oxidic layer and clean.

### Good reasons for using FRIASTOPP:

- Factory made combination made from FRIALEN long coupler and Pipelife Gas-Stop™
- The reduction of the cold zones by the integrated Pipelife Gas-Stop™ is compensated in comparison to the standard coupler
- Each FRIASTOPP fitting is subject to a functional control in our works
- The exposed heating coil and the extra wide fusion zones ensure optimum heat transmission to the pipe
- Additional barcode for tracing back the underground fitting (Traceability-Coding)
- The fitting may be installed in any position
- Each FRIASTOPP is marked with a own serial number
- The type label is adhesive and can be directly applied for e.g. constructional logs

### The Pipelife Gas-Stop™:

- has a low pressure loss
- is largely resistant to pollutants in the gas
- is made from plastic and is therefore corrosion resistant and has a long life
- is tried and tested millions of times in over twenty years
- an increase in operating pressure possible anytime with suitable mains
- is subject to a 100% function test
- Universal type U: universal application, simple storage, no danger of confusion, low operational training cost
- is easy to use

### The Special Type S:

- is suitable for higher nominal flow rates
- enables an optimized dimensioning of connecting pipes
- the nominal flow rates meet the requirements of standard pressure regulators

### Výrobca:

**FRIATEC Aktiengesellschaft ·  
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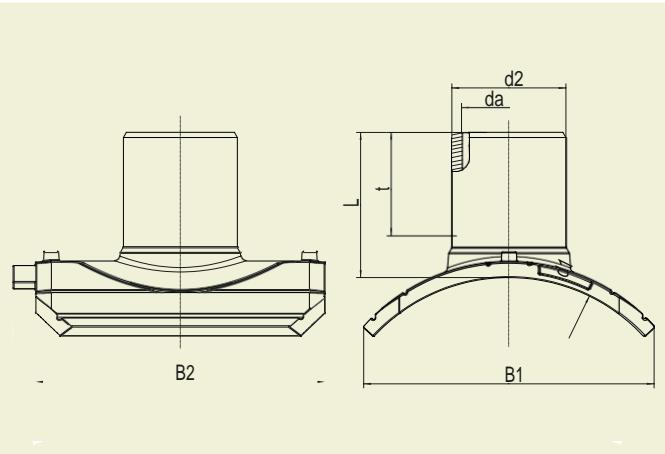
### Dodáva a technický servis zabezpečuje:

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www.plastix.sk  
plastix@plastix.sk**

**SA UNI**

**sedlová odbočková elektrotvarovka UNITOP**

**SA UNI SPIGOT SADDLES**



**PE 100 SDR 11**

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	L	t	B <sub>1</sub>	B <sub>2</sub>	Drilling Ø d <sub>a</sub>	Weight kg/each
250-280	90	616553	1	5	40	130	79	260	279	66	1.465
250-280	110	616554	1	5	40	140	82	260	279	82	1.610
250-280	125	616555	1	5	40	146	87	260	279	94	1.790
250-280	160	616556	1	5	40	158	98	260	279	123	2.180
315-400	90	616557	1	5	40	130	79	280	279	66	1.485
315-400	110	616558	1	5	40	140	82	280	279	82	1.630
315-400	125	616559	1	5	40	146	87	280	279	94	1.810
315-400	160	616560	1	5	40	158	98	280	279	123	2.190
450-800	90	616561	1	5	40	130	79	307	279	66	1.500
450-800	110	616562	1	5	40	140	82	307	279	82	1.645
450-800	125	616563	1	5	40	146	87	307	279	94	1.820
450-800	160	616564	1	5	40	158	98	307	279	123	2.200

FRIALEN safety fittings can be fused to pipes SDR 11 - SDR 26. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

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## FRIALEN® SAFETY FITTINGS

### SA UNI SPIGOT SADDLES



#### Areas of Application

Instead of cost-intensively integrating a T-piece, a branch or vent can be very comfortably created using the FRIALEN spigot saddle SA-UNI. The spigot outlet can be fused with FRIALEN couplers MB or UB.

#### Assembly Instructions

The saddle is clamped onto the pipe with the UNITOP clamping device (see FRIATOOLS product range). The clamping device UNITOP is an universal tool for all SA-UNI dimensions. Please read the assembly and operating instructions for the clamping device UNITOP.

The fusion of the HD-PE distribution pipes and the house connections with FRIALEN-Spigot Saddles SA-UNI takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see assembly instruction FRIALEN-XL for laying large pipes and relining pipe networks). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

For tapping of pipes without pressure please use the FRIATOOLS tapping equipment FWAB XL. Please refer the assembly and operating instructions of the drilling device FWAB XL / FWAB ASA. The fusion and tapping of pipes under pressure is possible with special tapping equipment. Please contact our applications engineers.

#### Good reasons for using the FRIALEN Spigot Saddle SA-UNI:

- w Compact construction
- w HD-PE saddle with exposed heating element for optimal heat transfer
- w Low tapping forces
- w Burr-free and almost flush tapping for maximum hydraulic performance
- w Leakage free tapping possible by means of a shut off element
- w Extra wide fusion zone
- w Additional barcode for tracing back the underground fitting (Traceability-Coding)
- w Before tapping the pipe a leak test can take place with the pressure testing device (FWDPA SA)
- w Touch proof electric contacts
- w Easy and safe assembly by top-loading with the UNITOP clamping device.
- w Fusion indicators for visual fusion control
- w Durable batch marking
- w Individually wrapped for dirt protection

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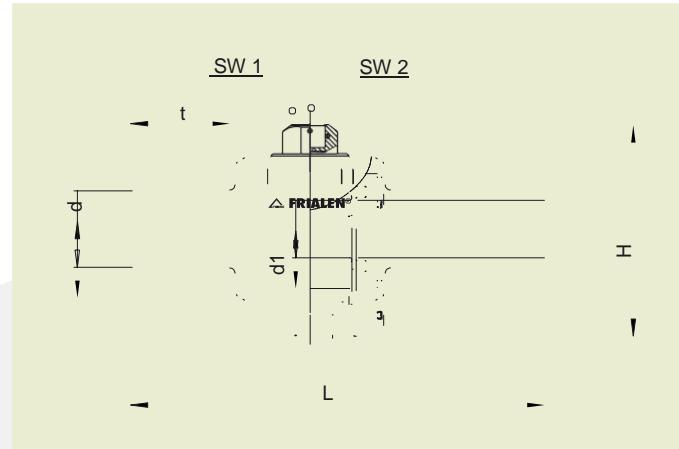
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## KHW guľový ventil s tesnením EPDM, plný prietok

### KHW BALL VALVES IN HD-PE WITH EPDM-SEALING, 1/4-TURN, FULL PORT PASSAGE



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	L	t	SW <sub>1</sub>	SW <sub>2</sub>	H	Weight kg/each
32	34	616656	1	1	100	324	108	50 x 50	20	156	0.770
40	34	616657	1	1	100	324	108	50 x 50	20	156	0.800
50	43	616658	1	1	50	405	129	50 x 50	25	193	2.240
63	51	616659	1	1	50	410	134	50 x 50	25	206	2.420

FRIALEN-Safety Fittings can be fused to pipes of SDR-stages 11 to 17.6. Minimum wall thickness s min ≥ 3 mm.

Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DW-6210CQ0059

BS d 63 - d 225 required

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## FRIALEN® SAFETY FITTINGS

### KHW BALL VALVES IN HD-PE WITH EPDM-SEALING, 1/4-TURN, FULL PORT PASSAGE

#### Areas of Application

The FRIALEN-Ball Valve KHW with EPDM-sealing is suitable for shutting off sections of the main and also for isolating house connection pipes. The Ball Valve KHW can be applied in pipe systems for water supply, for compressed sewage, mineral and sea water pipes. Further media on request.

The passage of the valve ( $d_1$ ) corresponds approx. with the internal diameter of the pipe socket SDR without constriction.

The Ball Valve KHW is opened and closed by a 1/4-turn with the installation kit BS. The installation kit BS allows the operation from the street cap and is optimal adapted to the FRIALEN-Ball Valve KHW. For further information see this data sheet page 2. or data sheet installation kit BS No. 22/00.

#### Assembly Instructions

The FRIALEN-Ball Valve KHW is connected to the pipe by using Couplers, Elbows or T-Pieces fused to its ends. The connection with HD-PE pipes takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The spigot ends to be fused are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

Before fusion the FRIALEN-Ball Valve KHW must be lined up to suit the type of actuation intended, in order to ensure that the installation kit BS will placed correctly.

#### Good reasons for using the FRIALEN-Ball Valve KHW:

- w The FRIALEN-Ball Valve provides a completely fused HD-PE pipe network, without transitions to other materials or flange connections
- w Another step towards a pure PE-pipe system
- w Optimum hydraulics due to pipe identical passage and contour providing ease of flow
- w Good testability due to lack of constriction of internal diameter
- w Floating ball, axial seals in the ball axle and combination of ball guidance and ball seal in one part compensate for bending defects
- w No deposits on internal areas, resistant to chemical and electrical reactions
- w No corrosion proofing required
- w Optimum hydraulics due to pipe identical passage and contour providing ease of flow, optimum flow speed
- w Low activating element, low weight
- w Extra long spigot ends dimensioned for two fusion operations
- w Actuating of the KHW with the telescopic installation kit BS
- w Additional barcode for tracing back the underground fitting (Traceability-Coding)

#### Výrobca:

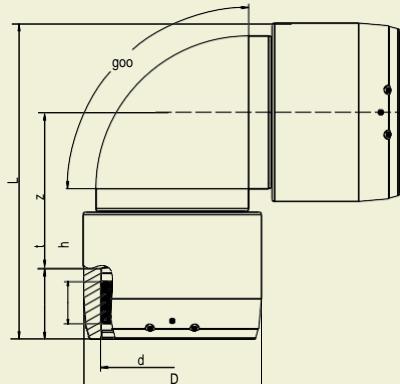
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**W90 XL      koleno 90°XL**

**W90 XL ELBOWS 90° XL**



**PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	Weight kg/each
250	616408	1	1	6	310	534	128	251	80	19.100
280	616409	1	1	2	350	621	139	307	84	27.500
315	616410	1	1	2	396	677	150	329	80	40.000

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request.

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos. DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250.

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## FRIALEN® SAFETY FITTINGS

### W90 XL ELBOWS 90° XL

#### Areas of Application

The FRIALEN XL Elbow W90° is used for all changes of direction in HD-PE pipes.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN XL Elbow W90° takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN XL large pipe technology for laying large pipes and relining pipe networks"). This involves removing the oxide layer and cleaning the pipe ends.

#### Good reasons for using the FRIALEN XL Elbow W90°:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

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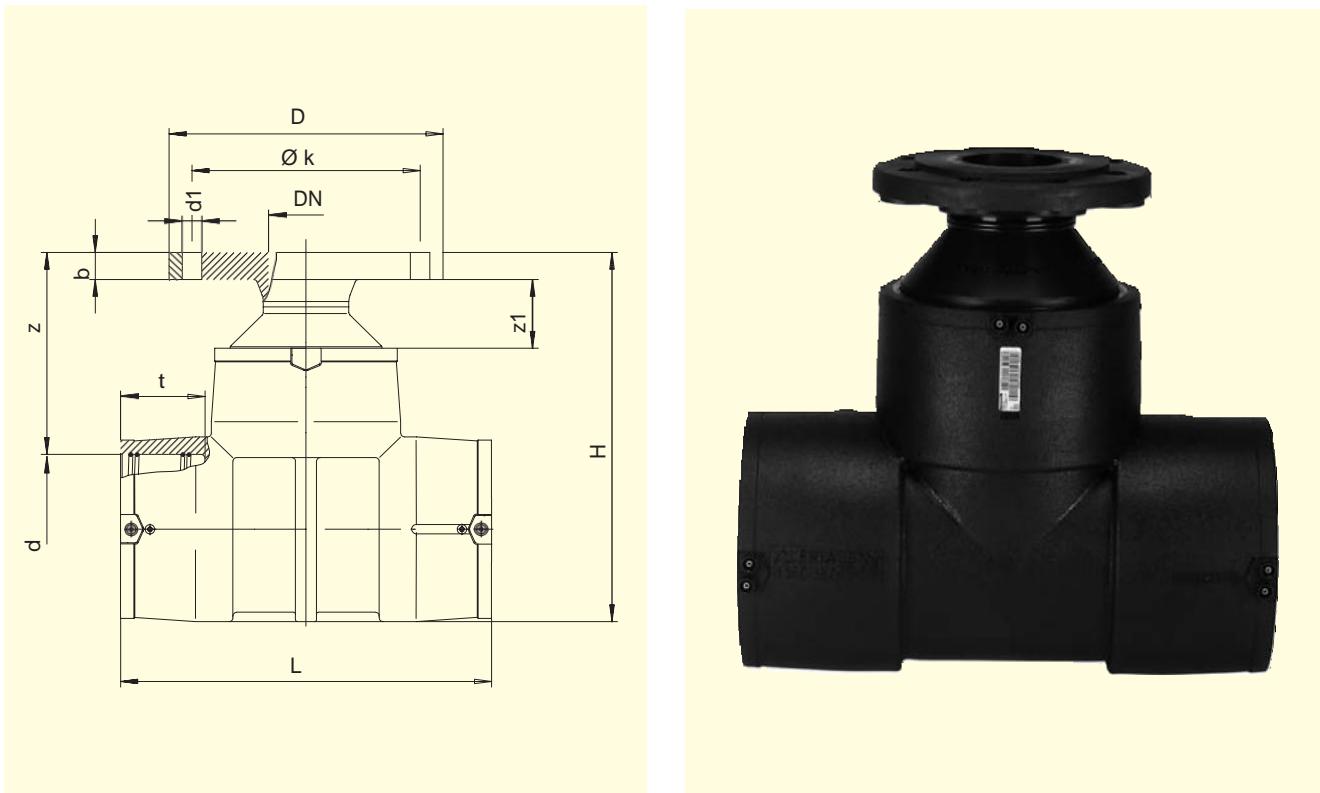
FLT

prírubový T kus

**FRIALEN® Flansch-T-Stück FLT****d/DN 110/80 – 225/80****PE 100 SDR 11/\*PE 100 SDR 17**

Maximal zulässiger Betriebsdruck 16 bar (Wasser)

\*Maximal zulässiger Betriebsdruck 10 bar (Wasser)



zusätzliche Unterlegscheiben sind notwendig

d/DN	Best.-Nr.	Lagerstatus	VE	PE	D	Øk	d <sub>1</sub>	z	z <sub>1</sub>	H	t	L	Lochz. f.Schr.	Gewicht kg/St.
110/80	T-615 590	1	4	32	204	160	16,5	190	42	316	87	355	8	4,880
125/80	T-615 591	1	3	24	204	160	16,5	200	45	343	87	384	8	5,550
160/80	T-615 592	1	2	16	204	160	16,5	210	50	390	96	430	8	9,100
180/80	T-615 910	1	1	8	204	160	16,5	210	–	416	103	480	8	10,000
225/80*	T-616 031	1	2	4	204	160	16,5	210	–	465	118	580	8	15,420

FRIALEN®-Sicherheitsfittings sind mit Rohren der SDR-Stufen 11 bis 17.6 schweißbar  
Erteilte DVGW-Prüfzeichen: DV-8606AU2249 und DV-8611AU2250

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Wichtige Informationen zur Verwendung der FRIALEN® Flansch-T-Stücke finden Sie auf der Rückseite.



# FRIALEN® Flansch-T-Stück FLT

d/DN 110/80 – 225/80

**PE 100 SDR 11/\*PE 100 SDR 17**

Maximal zulässiger Betriebsdruck 16 bar (Wasser)

\*Maximal zulässiger Betriebsdruck 10 bar (Wasser)

## Einsatzbereich

Das FRIALEN® Flansch-T-Stück wird für den Übergang von Rohren aus PE-HD auf Rohre bzw. Armaturen aus metallischen Werkstoffen eingesetzt.

Das Haupteinsatzgebiet des FRIALEN® Flansch-T-Stückes ist der Hydrantenanschluss. Für eine Abzweigleitung in DN 80 kann direkt eine Absperrarmatur angeflanscht werden. Andere Nennweiten können auch mit dem FRIALEN-T-Stück<sup>1</sup>) in Verbindung mit der FRIALEN-Flanschreduzierung FLR bzw. bei Nennweitengleichheit durch den FRIALEN-Einschweißflansch EFL<sup>2</sup>) ausgeführt werden.

## Verarbeitungshinweise

Das Flansch-T-Stück wird nur in drucklosem Zustand eingebaut.

Die Vorbereitungen für das FRIALEN®-Schweißen (zwei Schweißvorgänge) des T-Stücks in Durchgangsrichtung mit PE-HD Rohren (Einstechtiefen markieren, Oxidhaut entfernen, reinigen, etc.) sind der FRIALEN® Montageanleitung zu entnehmen.

Die Flanschanschlussmaße entsprechen DIN EN 1092-1.

Zusätzliche Unterlegscheiben für die Flanschschrauben sind notwendig.

Alle handelsüblichen Profil- oder Flachdichtungen können verwendet werden. Die Schraubenanzugsmomente der Dichtungshersteller sind zu beachten. Wir empfehlen Profildichtungen des Typs G-St.

<sup>1)</sup> siehe Datenblatt Nr. 10

<sup>2)</sup> siehe Datenblatt Nr. 46

**Weitere Informationen erhalten Sie bei unseren FRIALEN®-Kundenbetreuern und -Fachberatern. Rufen Sie uns an!**

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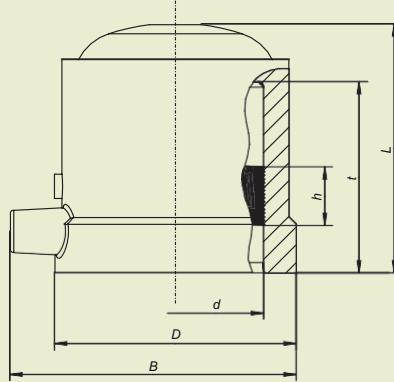
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K

## klenuté dno pre navŕtavacie armatúry

### K CAP FOR PRESSURE TAPPING TEES



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
50	612310	1	30	960	69	72	55	17.6	82	0,110

FRIALEN-Safety Fittings can be fused with pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8601AU2248

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## FRIALEN® SAFETY FITTINGS

### K CAP FOR PRESSURE TAPPING TEES

#### Areas of Application

The FRIALEN-Cap is used for final sealing of the drill socket (dome) of a Pressure Tapping Tee DAA  $\geq d$  90/xx or SPA  $d$  63. Also suitable as a sealing cap for  $d$  50 pipes.

#### Assembly Instructions

The fusion of the dome of a FRIALEN-Pressure Tapping Tee with the FRIALEN-Cap K takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The dome is prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to  $d$  225").

#### Good reasons for using the FRIALEN-Cap K:

- Large insertion depth for ease of pipe guiding
- Maximum stability through great wall thickness
- Cold zones at the end to prevent the flow of molten material
- Exposed heating coils for optimal heat transfer to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

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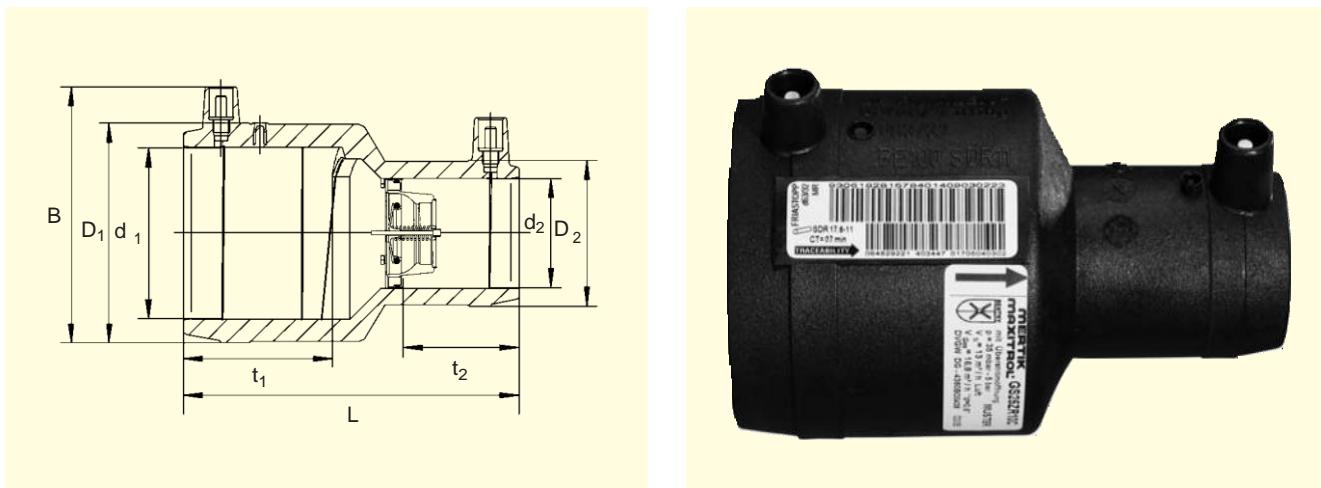
**MRSTOPP<sub>mertik</sub>****redukovaná spojka so spätnou klapkou**

# FRIALEN® MR-STOPP Reducer Couplers

## with integrated Mertik Maxitrol Excess Flow Valve

### PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Type	Order Ref.	Operating Pressure Range	V <sub>N</sub>	Stock-status	VE	PE	L	t <sub>1</sub>	t <sub>2</sub>	weight kg/each
p <sub>min</sub> - p <sub>max</sub>												
50	40	Z	T-616 218	35 mbar - 5 bar	26 - 62	1	12	600	110	49	37	0.210
50	40	D	T-616 237	25 mbar - 1 bar	19 - 27	1	12	600	110	49	37	0.210
63	32	Z	T-616 219	35 mbar - 5 bar	17 - 40	1	10	500	125	55	44	0.240
63	32	D	T-616 238	25 mbar - 1 bar	11 - 16	1	10	500	125	55	44	0.240
63	40	Z	T-616 220	35 mbar - 5 bar	26 - 62	1	8	400	125	55	40	0.290
63	40	D	T-616 239	25 mbar - 1 bar	19 - 27	1	8	400	125	55	40	0.290
63	50	Z	T-616 221	35 mbar - 5 bar	41 - 99	1	8	400	125	55	47	0.370
63	50	D	T-616 240	25 mbar - 1 bar	28 - 40	1	8	400	125	55	47	0.360

The **universal type Z** meets the practical requirements of the operating pressure range and the necessary flow quantity.

Type D, Z: Mertik Maxitrol® with overflow device, max. overflow quantity D: 30 l/h at 100 mbar, Z: 30 l/h at 1 bar.

p<sub>min</sub> - p<sub>max</sub>: min – max operating pressure or Mertik Maxitrol® initial pressure.

V<sub>N</sub>: nominal flow at p<sub>min</sub> – p<sub>max</sub> in relation to natural gas d = 0.6 at standard conditions (1013 mbar, 15 °C) in m<sup>3</sup>/h.

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Please turn over for important information regarding application of the FRIALEN®-MR-STOPP.



# FRIALEN® MR-STOPP Reducer Couplers

## with integrated Mertik Maxitrol Excess Flow Valve

### PE 100 SDR 11

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

#### Area of Application

MR-STOPP is used for gas service lines according to DVGW G459-1-appendix (12/03) for operating pressure ranging from 25 mbar – 5 bar.

The MR-STOPP is a FRIALEN reducer coupler with integrated excess flow valve which automatically shuts off the gas flow in the event of pipe damage leading to leaking of gas, caused e.g. by dredging or drilling.

The MR-STOPP is best installed into the branch between main and service line, directly behind the tapping valve.

The Mertik Maxitrol type selection takes place according to the minimal operating pressure of the network and the flow output required by the consumer.

The **Universal Type Z** meets perfectly the practical requirements of the operating pressure range and the necessary flow quantity.

#### Operation

(see also leaflets on technical data by Mertik Maxitrol® "SENTRY GS gas flow monitor for underground external networks")

The MR-STOPP is subdivided into types D or Z according to mains pressure range. It shuts off automatically at a defined gas flow as typically occurs where there is damage to the gas service line. The gas flow is stopped immediately and completely. Types D and Z have overflow devices. This overflow quantity allows the pressure in the undamaged gas pipe to increase again in order for the excess flow valve to re-open automatically. Type D, Z: Mertik maxitrol® with overflow device: overflow quantities of over 30 l/h require additional passive safety measures in the building according to DVGW-G459-1-B.

#### Processing Advice

The MR-STOPP is to be processed according to the operation and installation instructions which come with each MR-STOPP.

Installation always takes place in the direction of the flow of the medium going from larger to smaller dimensions. The flow direction is marked by arrows on the label.

Pressure testing of the gas route using MR-STOPP is authorised up to 10 bar air with the gas flow monitor open.

Operational mains pressure of the component is printed on the type label:

- Yellow type label (type Z) for 35 mbar up to 5 bar
- Orange type label (type D) for 25 mbar up to 1 bar

For further information, please call our FRIALEN® customer service staff and specialist advisers.

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DVGW test symbols awarded:  
reducer coupler MR = DV-8601AU2248.

Gas flow monitor = DG-4360BO0438.

The use of this component can be marked in the area of the main shut-off device of the building (appropriate ID card including markings of product data and batches are all included in the initial delivery).

FRIALEN® safety fittings may be welded with pipes of SDR levels 11. Welding MR STOPP with HD-PE service pipe system takes place using FRIALEN® fusion – tight and with axial force. Installation is prepared according to the general installation requirements (see also "Installation instructions for FRIALEN® safety fittings for service and distributor lines up to d 225) (remove oxidic layer/clean).

#### Eleven Reasons for MR-STOPP

- Factory made combination of FRIALEN® MR reducer coupler and Mertik Maxitrol® excess flow valve
- Especially important with reducer couplers: triple centre stop provides maximum protection from expressing / position shifting.
- The shortening the cold zones through integrated GS is compensated as opposed to the standard coupler
- Exposed heating coil and wide fusion zones allow optimum heat transfer
- Additional barcode for traceability of excess flow valve and coupler (traceability coding).

#### Excess Flow Valve

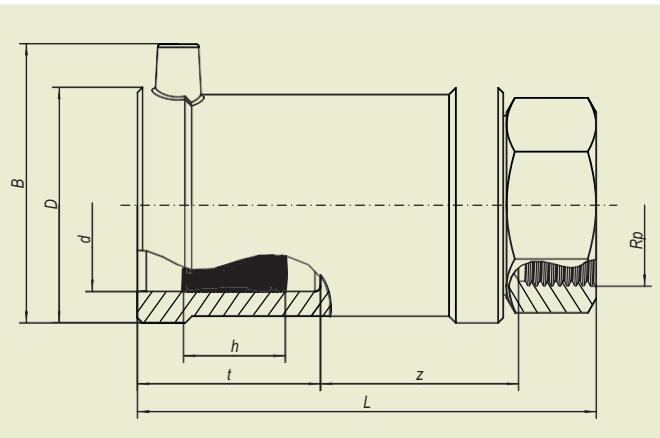
- has been individually function checked and adjusted precisely by the factory
- has low pressure loss
- is largely resistant to contaminations in the gas
- its principle has been tried and tested for years
- tolerates pressure increase from low to medium pressure in suitable network
- Type Z can be applied universally from 35 mbar to 5 bar, simple storage, no risk of mix-ups, low operational training needs.

## MUM

## prechodová spojka PE - bronz, vnútorný závit

### FRIALEN® SAFETY FITTINGS

### MUM TRANSITION FITTINGS HD-PE/GUNMETAL WITH FEMALE THREAD



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	Rp	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
32	1"	612595	1	20	1.080	47	112	42	49	24	61	0.360
40	1 1/4"	612596	1	20	800	58	121	46	53	30	70	0.520
50	1 1/2"	612692	1	15	600	70	136	53	60	30	80	0.650
63	1 1/2"	612708	1	10	300	84	141	53	61	35	94	1.230
63	2"	612693	1	10	400	84	141	53	61	35	94	1.050

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness  $s \text{ min} \geq 3 \text{ mm}$ . Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

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## FRIALEN® SAFETY FITTINGS

### MUM TRANSITION FITTINGS HD-PE/GUNMETAL WITH FEMALE THREAD

#### Areas of Application

FRIALEN-Transition Fittings MUM are threaded joints as an adaptor from a metal pipe with external thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the gunmetal and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Fittings MUM:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Gunmetal end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

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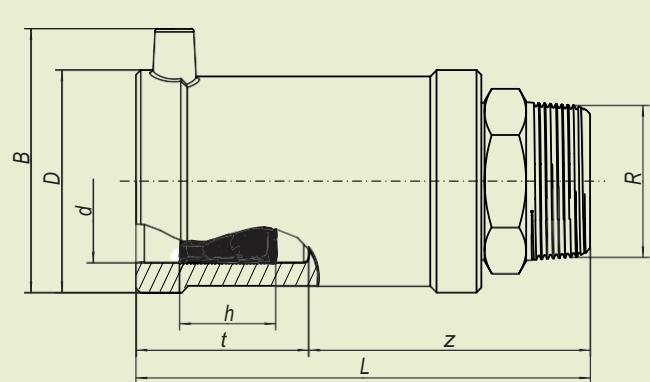
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MUN

prechodová spojka PE - mosadz, vonkajší závit

## MUN TRANSITION FITTINGS HD-PE/BRASS WITH MALE THREAD



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
20	1/2"	612710	1	40	2.880	35	91	33	58	15		0.160
25	3/4"	612711	1	30	2.160	40	99	37	63	20		0.190
32	1"	612712	1	20	1.440	47	112	42	70	24	61	0.310
32	1 1/4"	612709	1	20	1.080	47	120	42	70	24	61	0.390
32	1 1/2"	612698	1	15	810	47	121	42	70	24	61	0.450
40	1"	612721	1	20	800	58	123	46	75	30	70	0.480
40	1 1/4"	612713	1	20	800	58	126	46	77	30	70	0.460
40	1 1/2"	612718	1	20	800	58	127	46	78	30	70	0.520
40	2"	612725	1	20	600	58	132	46	86	30	70	0.680
50	1"	612719	1	15	600	70	134	53	81	30	80	0.620
50	1 1/4"	612716	1	15	600	70	136	53	83	30	80	0.610
50	1 1/2"	612714	1	15	600	70	137	53	84	30	80	0.620
50	2"	612706	1	15	600	70	147	53	94	30	80	0.760
63	1 1/4"	612722	1	10	400	84	138	53	84	35	94	0.910
63	1 1/2"	612717	1	10	400	84	137	53	84	35	94	0.890
63	2"	612715	1	10	400	84	142	53	89	35	94	0.920
75	2"	612694	1	10	256	98	165	61	104	38		1.470
75	2 1/2"	612695	1	10	256	98	167	61	106	38		1.490

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6, minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-7501AU2256 and DV-7501AU2257

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## FRIALEN® SAFETY FITTINGS

### MUN TRANSITION FITTINGS HD-PE/BRASS WITH MALE THREAD

#### Areas of Application

FRIALEN-Transition Fittings MUN are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the brass and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Fittings MUN:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Brass end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

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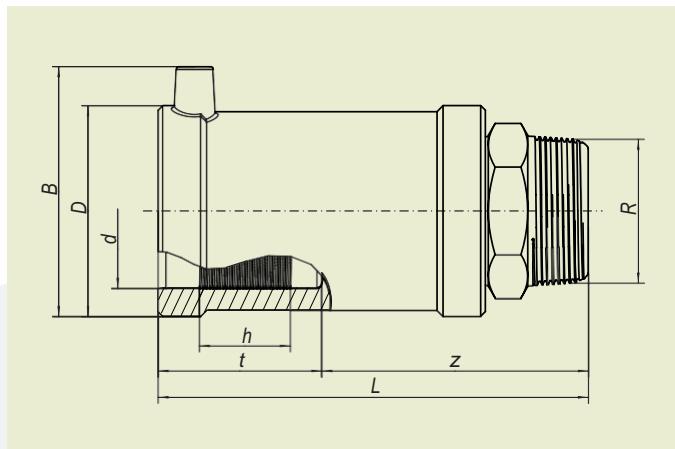
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**MUN -V2A** prechodová spojka PE - nerez, vonkajší závit

**MUN-V2A** TRANSITION FITTINGS HD-PE/STAINLESS STEEL WITH MALE THREAD



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



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
40	1"	616516	1	20	1000	58	123	45,5	75	30	69,5	0,460
40	1 1/2"	612727	1	20	1000	58	127	45,5	78	30	69,5	0,495
50	1 1/2"	612726	1	15	750	70	137	53	84	29,8	80	0,600
63	1 1/2"	612705	1	10	500	84	137	53	84	35	93,5	0,865
63	2"	612899	1	10	500	84	142	53	89	35	93,5	0,910

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6, minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos. DV-7501AU2256 and DV-7501AU2257

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## FRIALEN® SAFETY FITTINGS

### MUN-V2A TRANSITION FITTINGS HD-PE/STAINLESS STEEL WITH MALE THREAD

#### Areas of Application

FRIALEN-Transition Fittings MUN-V2A are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler. The threaded joint is made of stainless steel (Material St. 1.4305 / X8CrNiS18-9).

#### Assembly Instructions

During assembly, only a spanner applied to the provided metal hexagon must be used to screw the component into its metal counterpart. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the stainless steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Fittings MUN-V2A:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Stainless steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the underground fitting (Traceability-Coding)
- Threaded joint made of stainless steel (St. 1.4305) = resistant to corrosion
- Suitable for usage in high humidity environment or in industrial area

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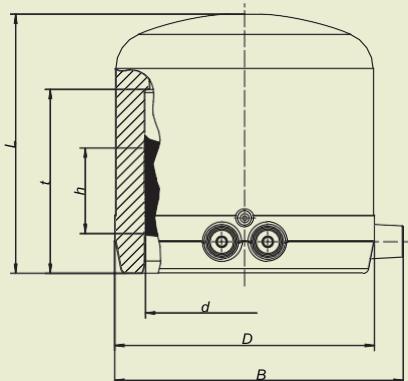
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**MV**

**klenuté dienko**

## **MV END CAPS**



**PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
20	612025	2	40	2000	31	62	41	22	46	0,035
25	612026	2	40	2000	35	65	41	22	51	0,040
32	612027 □	1	40	1280	44	70	44	24	61	0,060
40	612028 □	1	25	800	55	75	49	28	70	0,090
50	612029	1	20	640	67	80	55	30	80	0,125
63	612030	1	15	480	84	88	63	31	96	0,210
75	612031	1	20	640	99	99	70	31	110	0,320
90	612032	1	16	288	118	114	79	40	130	0,500
110	612033	1	12	216	143	125	82	34	153	0,825
125	612034	1	8	144	163	135	87	42	168	1,160
160	612035	1	10	60	208	160	98	54	210	2,240
180	616183	1	6	48	225	195	100	50	225	2,800
200	616184	1	4	32	250	210	105	51	250	3,900
225	616185	1	4	32	280	230	115	50	280	5,050

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8601AU2248 and DV-8606AU2249

① Also recommended as fused caps for the dome of FRIALEN-Pressure Tapping Tees DAA/DAP ≤ d63.

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# FRIALEN® SAFETY FITTINGS

## MV END CAPS

### Areas of Application

The FRIALEN-End Caps MV are used to close HD-PE pipe ends.

Also recommended as fused caps (d32 and d40) for the dome of FRIALEN-Pressure Tapping Tees DAA and DAP up to d63.

### Assembly Instructions

The fusion of a pipe end or the dome of a FRIALEN-Pressure Tapping Tee with the FRIALEN-End Cap MV takes place using FRIALEN-fusing – leakproof and longitudinally strong.

The fusion area is prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends. Next to moulded fittings and accessories it is recommended to install a piece of pipe of 20 - 60 cm length, accordingly to the diameter, so that the pipeline can be continued later on.

### Good reasons for using the FRIALEN-End Caps MV:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Touch proof electric contacts
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

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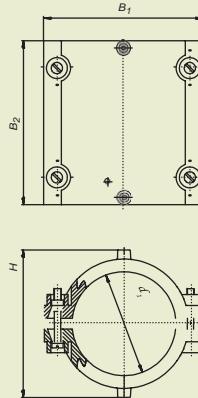
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## RS zosilňovacie strmene

FRIALEN® SAFETY FITTINGS

**RS REINFORCING SADDLE**



PE 100 SDR 11

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



d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	H	B <sub>1</sub>	B <sub>2</sub>	Weight kg/each
63	612519	1	20	360	105,5	105	104	0,260

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DV-8601AU2248

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# FRIALEN® SAFETY FITTINGS

## RS REINFORCING SADDLE

### Areas of Application

The FRIALEN-Reinforcing Saddles are used for the repair of minor pipe damage with no escape of fluid, especially to reinforce crushed zones and points with external damage.

### Assembly Instructions

The fusion of the HD-PE pipe with the FRIALEN-Reinforcing Saddles takes place by FRIALEN-fusing – leakproof and longitudinally strong.

Both HD-PE saddles have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe covered by the saddles.

### Good reasons for using the FRIALEN-RS:

- Compact construction
- HD-PE saddle with exposed heating element for optimal heat transfer
- Preassembled unit without loose parts
- Extra wide fusion zone
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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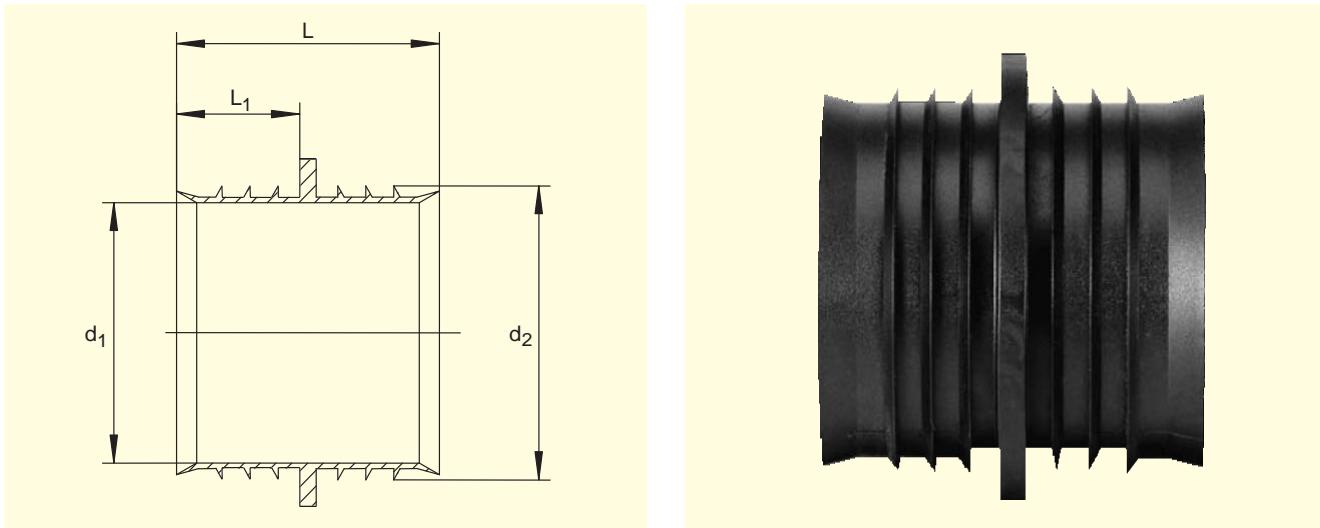
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**RW****vodotesná vložka**

# **FRIALEN®-Repair Sleeves RW**

**suitable only for pipes SDR 11**

d	d <sub>1</sub>	d <sub>2</sub>	Order Ref..	Stock-status	VE	PE	L	L <sub>1</sub>	Weight kg/each
32	21,2	27,0	T-615 127	1	50	4.500	35	16	0.004
40	27,6	34,0	T-615 128	1	50	4.500	35	16	0.005
50	35,6	42,0	T-615 129	1	50	4.500	35	16	0.007
63	45,9	52,5	T-615 130	1	40	3.600	47	22	0.012

Measure d means: Repair Sleeves for pipe d xy

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**Technical Plastics Division**  
**P.O.B. 71 02 61 · D-68222**  
**Mannheim**

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Please turn over for important information regarding application of the  
**FRIALEN®-Repair Sleeves RW**



# FRIALEN®-Repair Sleeves RW

## suitable only for pipes SDR 11

### Areas of Application

The FRIALEN®-Repair Sleeve is used for the repair of house connection water pipes in the depressurised state. The Repair Sleeve prevents the ingress of water into the fused area of the FRIALEN®-Cougler MB or UB.

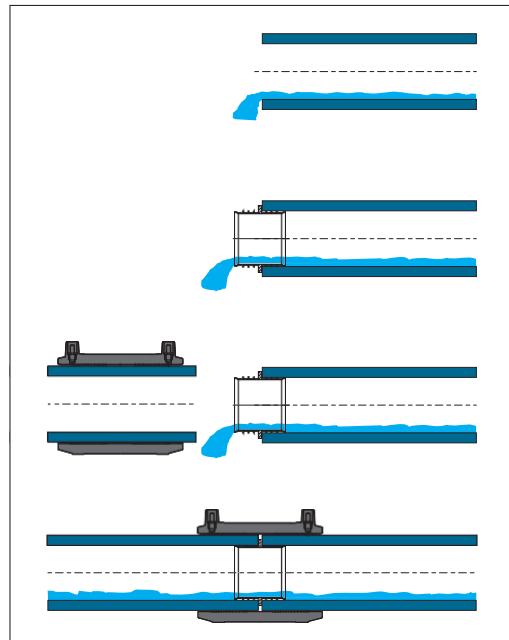
### Assembly Instructions

The pipe is parted and the damaged piece is taken out. A new piece of pipe is made to fit. Two FRIALEN®-Cougler are pushed onto this. The Repair Sleeves are pushed into the existing pieces of pipeline and the new made to measure piece of pipe positioned between them. The couplers are then fitted halfway over the sleeves and fused.

The Repair Sleeve RW is only suitable for pipe SDR 11.

### One good reason for using the FRIALEN®-Repair Sleeves

- For repair or connection work on domestic water connection pipes the sleeve prevents residual water from running back into the fusion zone.



Please find our datasheets for  
downloading on the internet at  
[www.friatec.de](http://www.friatec.de)

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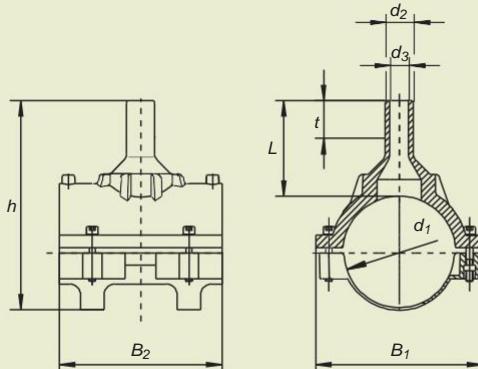
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## SA sedlová odbočková elektrotvarovka

### FRIALEN® SAFETY FITTINGS

#### SA SPIGOT SADDLES



PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	L	t	h	B <sub>1</sub>	B <sub>2</sub>	Drilling Ø d <sub>a</sub>	Weight kg/each
63	32	612757	1	20	360	22	100	44	171	108	118	20	0,330
63	50	612759	1	20	360	37	113	55	184	108	118	36	0,370
75	50	615020	1	15	270	38	82	55	167	110	125	36	0,430
90	32	615285	1	20	160	21	103	44	207	155	150	20	0,700
90	63	612819	1	20	160	50	103	63	207	155	150	46	0,720
110	32	615334	1	12	96	24	125	51	238	178	180	20	0,788
110	50	615031	1	12	96	39	132	60	245	178	180	36	0,816
110	63	612760	1	12	96	49	150	81	263	178	180	46	0,868
110	90	615411	1	12	96	70	115	79	228	165	190	65	0,960
125	32	615087	1	12	96	21	109	44	248	190	185	20	0,945
125	63	612761	1	12	96	47	109	63	248	190	185	46	0,990
125	90	615412	1	12	96	70	116	79	243	185	205	65	1,080
125	110	615584	1	10	80	86	116	82	243	185	205	84	1,150
160	32	612886	1	8	64	21	126	44	289	223	265	20	1,440
160	63	612762	1	6	48	47	140	63	303	223	265	46	1,520
160	90	615413	1	2	36	70	140	79	303	223	265	65	1,640
160	110	615739	1	2	36	86	140	82	303	223	265	84	1,765
160	125	615585	1	2	36	98	140	87	303	223	265	95	1,880
180	63	612763	1	6	48	47	109	63	291	240	195	46	1,190
180	90	615414	1	2	36	70	116	79	312	241	285	65	1,820
180	110	615948	1	2	36	86	136	82	319	241	285	84	1,960
180	125	615740	1	2	36	98	141	87	324	241	285	95	2,110
200	63	612764	1	5	40	47	109	63	311	250	195	46	1,260
225	63	612765	1	5	40	47	109	63	336	255	195	46	1,210
225	90	615415	1	5	40	70	130	79	358	284	279	65	1,950
225	110	616044	1	5	40	86	140	82	368	284	279	84	1,960
225	125	616045	1	4	32	97	146	87	374	284	279	95	2,240
225	160	616046	1	4	32	125	157	98	385	284	279	123	2,580

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Saddle parts d 63 can only be fused to pipes of SDR stage 11. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration-Nos.: DV-8601AU2248 and DV-8606AU2249

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# FRIALEN® SAFETY FITTINGS

## SA SPIGOT SADDLES

### Areas of Application

The FRIALEN-Spigot Saddles SA are used for tapping of depressurised gas- and waterpipes as well as for pressure drainage. The branch line is connected with the outlet spigot by using a FRIALEN coupler UB.

### Assembly Instructions

The fusion of the HD-PE distribution pipes and the house connections with FRIALEN-Spigot Saddles SA takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipes covered by the saddle and the coupler.

Swarfless tapping up to Ø 46 mm, from Ø 65 to Ø 123 mm extremely swarfreduced by using the tapping equipment of Hütz + Baumgarten.

For pipes without pressure spigot saddles SA can be used as a T-piece with a reduced outlet.

For tapping the main line under operating pressure, please contact our Application Engineering Department.

### Good reasons for using the FRIALEN-SA:

- Compact construction
- exposed heating element for optimal heat transfer
- Preassembled unit without loose parts
- Nearly swarfless tapping by tapping equipment of Hütz + Baumgarten
- Low tapping power
- Burr - and nearly ledge - free tapping for a maximum of hydraulic power.
- Leakage free tapping possible by means of a shut off element
- Extra wide fusion zone
- Additional barcode for tracing back the fitting (Traceability-Coding)

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SAB

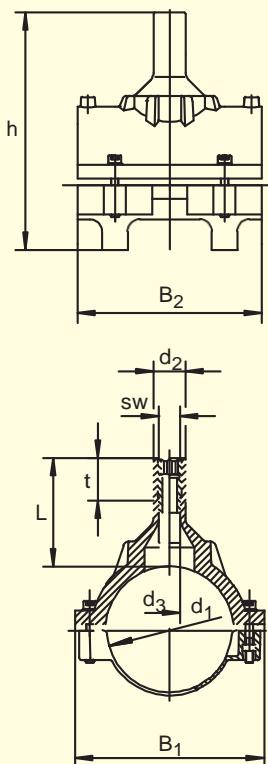
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FRIALEN®

# FRIALEN®-Spigot Saddles with integral drill SAB

**PE 100 SDR 11**

Maximum working pressure 16 bar (Water) / 10 bar (Gas)



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	VE	PE	d <sub>3</sub>	L	h	t	B <sub>1</sub>	B <sub>2</sub>	SW	Weight kg/each
63*	32	T-615 091	1	20	360	21	100	171	42	108	118	17	0.408
90	32	T-615 092	1	20	160	21	89	193	42	155	150	17	0.762
110	32	T-615 093	1	12	96	21	109	233	42	175	180	17	0.972
125	32	T-615 094	1	12	96	21	109	248	42	190	185	17	1.030
160	32	T-615 095	1	6	48	21	109	283	42	225	195	17	1.204

FRIALEN®-Safety Fittings can be fused and tapped to pipes of SDR stages 11 to 17.6

\*Saddle parts d 63 can only be fused to pipes of SDR stage 11.

DVGW-Registration-No.: DV-8606AU2249

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Please turn over for important information regarding application of the  
FRIALEN®-Spigot Saddles with integral drill SAB



# FRIALEN®-Spigot Saddles with integral drill SAB PE 100 SDR 11

Maximum working pressure 16 bar (Water) / 10 bar (Gas)

## Areas of Application

The FRIALEN®-Spigot Saddles with integral drill SAB are used for tapping in the depressurised state of gas and water pipes. Outlet spigot for use with FRIALEN®-couplers MB or UB.

## Assembly Instructions

The fusion of the HDPE distribution pipes and the house connections with FRIALEN®-Spigot Saddles SAB takes place by FRIALEN®-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN®-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

## Seven good reasons for using the FRIALEN®-SAB

- Compact construction
- HDPE saddle with exposed heating element for optimal heat transfer
- Tapping area free of heating wires
- Swarfless tapping with integral drill
- Preassembled unit without loose parts
- Extra wide fusion zone
- Additional barcode for tracing back the underground fitting (Traceability-Coding).

For further information, please call our  
FRIALEN®-customer service staff and specialist advisers.

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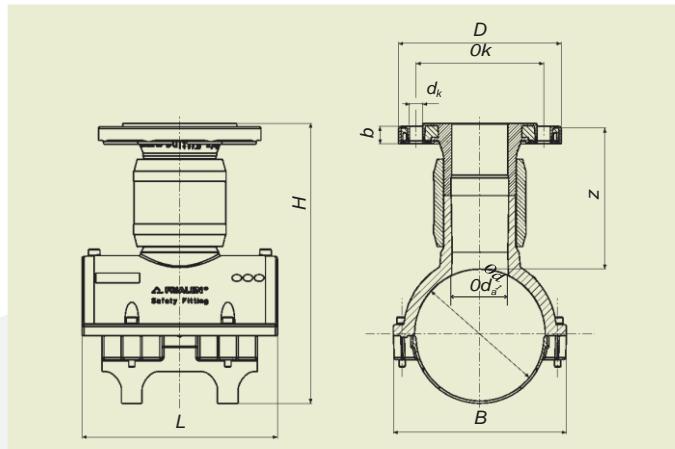
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## SAFL

## sedlová odbočka s integrovanou prírubou

FRIALEN® SAFETY FITTINGS

## SAFL SPIGOT SADDLES WITH FLANGE OUTLET



PE 100 SDR 11

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



d <sub>f</sub> /DN	Order Ref.	Stock-status	BX	PU	D	L	B	d <sub>k</sub>	Z	Ø k	H	Holes for screw	b	Drilling Ø d	Weight kg/each
110/80	616016	1	3	54	204	190	165	16.5	180	160	296	8	25	65	3.700
125/80	616017	1	2	36	204	205	185	16.5	180	160	311	8	25	65	3.940
160/80	616018	1	2	36	204	245	217	16.5	180	160	346	8	25	65	4.320
180/80	616019	1	2	36	204	285	241	16.5	180	160	366	8	25	65	4.610
225/80	616020	1	2	16	204	284	286	16.5	180	160	411	8	25	65	4.720
125/100	616021	1	2	36	224	205	185	16.5	180	180	311	8	27	84	4.770
160/100	616022	1	2	36	224	245	217	16.5	180	180	346	8	27	84	5.270
180/100	616023	1	2	36	224	285	241	16.5	180	180	366	8	27	84	5.520
225/100	616024	1	2	16	224	284	286	16.5	180	180	411	8	27	84	5.635

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8606AU2249

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## FRIALEN® SAFETY FITTINGS

### SAFL SPIGOT SADDLES WITH FLANGE OUTLET

#### Areas of Application

The FRIALEN Spigot Saddle with Flange Outlet SAFL is used for the integration of flange valves and hydrants up to PN 16.

#### Assembly Instructions

The saddle of the SAFL is mounted and fused onto the HD-PE mains. Drilling into the HD-PE mains can take place

- without pressure in the mains
- under operating pressure on application of a gate-valve on the flange side

using standard drill equipment. We recommend Hütz + Baumgarten.

The fusion of the saddle piece with the HD-PE mains takes place using FRIALEN-fusion – leakproof and longitudinally strong. Saddle and HD-PE mains are prepared according to the general installation instructions (see Assembly Instructions for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing oxide skin.

The flange connection measurements correspond to DIN EN 1092-1. Supplementary washers are required.

All standard profile and flat gaskets can be used. Torques advised by the gasket manufacturer must be observed. We recommend profile gaskets of type G-St.

#### Good reasons for using the FRIALEN-Spigot Saddle with Flange Outlet SAFL:

- Compact component from HD-PE
- Flange adaptor and flange are one component. They make up one homogeneous unit
- Factory made combination of FRIALEN-Spigot Saddle, FRIALEN-Coupler and Full Faced Flange
- Smooth on the inside and no fusion bead at the connection between SA and EFL, optimum hydraulics
- The cold flowing properties well known with HD-PE are avoided by constructive flange design
- Solid construction. Integration of the flange prevents tear-off
- Short overall length for horizontal and vertical installation
- Top stability due to great wall thickness
- Extremely economical solution
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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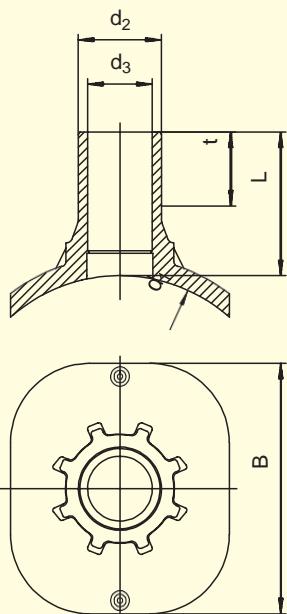
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SA TL

sedlová odbočková elektrotvarovka Top Loading

**FRIALEN®-Spigot Saddles Top-Loading SA-TL****PE 100 SDR 11**

Maximum working pressure 16 bar (Water) / 10 bar (Gas)



$d_1$	$d_2$	Order Ref.	Stock-status	VE	PE	$d_3$	L	t	B	DrillingØ (Q)	Weight kg/each
250-560	32	T-615 465	1	5	90	21	109	42	200	20	0.621
250-560	63	T-615 466	1	5	90	47	109	56	200	46	0.676
250-560	90 <sup>o)</sup>	T-615 850	1	5	90	61	111	80	200	60	0.770

<sup>o)</sup> Drilling diam. max. 60 mm<sup>Q)</sup> We recommend the tapping equipment of Hütz + Baumgarten

FRIALEN®-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6  
DVGW-Registration-No.: DV-8606AU2249 and DV-8611AU2250

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Please turn over for important information regarding application of the  
**FRIALEN®-Spigot Saddles SA-TL**

# FRIALEN®-Spigot Saddles Top-Loading SA-TL

## PE 100 SDR 11

Maximum working pressure 16 bar (Water) / 10 bar (Gas)

### Areas of Application

The FRIALEN®-Spigot Saddles SA-TL are used for tapping in the depressurised state of gas and water pipes as well as for pressure drainage. Outlet spigot for use with FRIALEN®-couplers MB or UB.

SA-TL can be used for pipes in the depressurised state as a T-piece with reduced outlet.

### Assembly Instructions

The saddle is clamped onto the pipe with the FRIATOP clamping device (see pricelist "Technical Equipment"). Please read the "Assembly and Operating Instructions for FRIATOP clamping unit (Top-Loading)".

The fusion of the HDPE distribution pipes and the house connections with FRIALEN®-Spigot Saddles SA-TL takes place by FRIALEN®-fusing – leakproof and longitudinally strong.

The saddle and the outlet spigot have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN®-Special Technology for laying large bore pipes and relining pipe networks  $\geq d 250$ "). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

Swarfless tapping up to  $\varnothing$  46 mm, at  $\varnothing$  60 mm extremely swarfreduced.

For tapping pressurized pipes a shut off equipment can be used or tapping with the tapping device can be done via a combination of shut off device/KHP-Ball Valve/EFL-Full Faced Flange or shut off device/AQUAFAST®-Flange.

### Seven good reasons for using the FRIALEN®-SA-TL

- Compact construction
- HDPE saddle with exposed heating element for optimal heat transfer
- Swarfless tapping by tapping equipment of Hütz + Baumgarten
- Leakage free tapping possible by means of a shut off element
- Extra wide fusion zone
- The SA-TL can be applied universally to large HDPE pipe diameters  $d$  250-560. This means additional economy due to less material needed and less stock both with suppliers and trade
- Additional barcode for tracing back the underground fitting (Traceability-Coding).

**For further information, please call our FRIALEN®-customer service staff and specialist advisers.**

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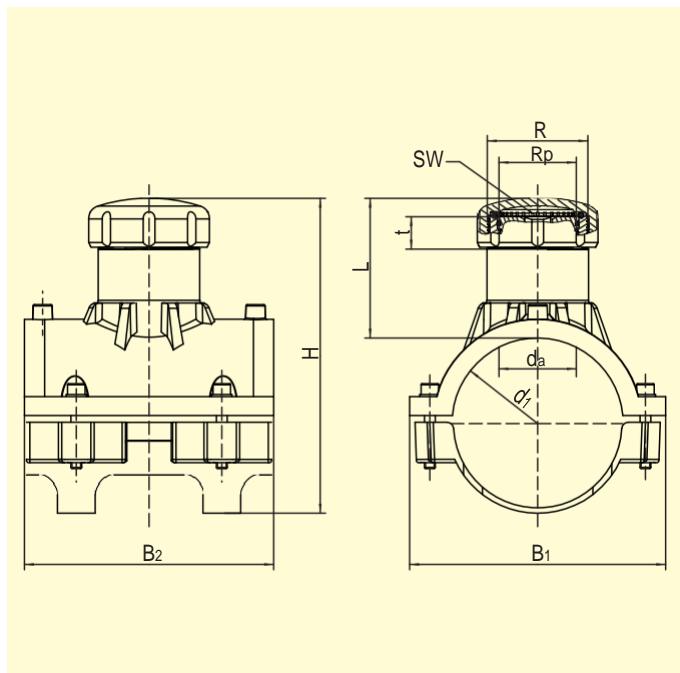
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**SPA** sedlová armatúra pre uzavíracie balóny  
**FRIALEN® Shut off Saddles SPA**

FRIALEN®

**PE 100 SDR 11**

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



d <sub>1</sub>	R	Rp	Order Ref.	Stock-status	BX	PU	L	t	B <sub>1</sub>	B <sub>2</sub>	H	SW	Drilling Ø d <sub>a</sub>	Weight kg/each
63	G 1 1/2	G 1 1/8	<b>612753</b> □	1	20	360	76	19	108	118	146	19	31,0	0,610
90	G 2 1/2	G 2	<b>612677</b>	1	16	128	104	24	156	150	197	19	56,5	1,472
110	G 2 1/2	G 2	<b>612750</b>	1	12	96	104	24	178	180	217	19	56,5	1,630
125	G 2 1/2	G 2	<b>612751</b>	1	12	96	104	24	190	185	232	19	56,5	1,800
160	G 2 1/2	G 2	<b>612752</b>	1	8	64	104	24	230	195	267	19	56,5	1,940
180	G 2 1/2	G 2	<b>612754</b>	1	7	56	104	24	235	195	287	19	56,5	1,950
200	G 2 1/2	G 2	<b>612755</b>	1	6	48	104	24	252	193	307	19	56,5	1,944
225	G 2 1/2	G 2	<b>612756</b>	1	5	40	104	24	258	193	332	19	56,5	1,964

FRIALEN-Shut off Saddles from d 90 can be fused to pipes of SDR stages 11 to 17.6.

Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DV-8601AU2248, DV-8606AU2249

- Shut off Saddles d 63 may only be processed using pipes up to SDR 11.

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Please turn over for important information regarding application of our products.



# FRIALEN® Shut off Saddles SPA

## Areas of Application

FRIALEN-Shut off Saddles SPA are suitable for blocking media by the use of commercial shut off equipment or for vending/flushing.

## Assembly Instructions

The fusion of the HDPE mains and the FRIALEN-Shut off Saddle takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe and the saddle have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d225"). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

**Nine good reasons for using the FRIALEN-Shut off Saddles SPA:**

- w **Compact construction**
- w **HDPE saddle with exposed heating element for optimal heat transfer**
- w **Compact part suitable for normal commercial shut off equipment and for tapping of the main-pipe**
- w **Long and solid brass-external thread for a safe connection of the shut off equipment**
- w **Brass-internal thread for a safe sealing by using a plug, permanently and immovable anchored in the HDPE**
- w **Includes brass plugs with square recess**
- w **Protection against access to the dome by fusing on a FRIALEN SPAK or K**
- w **DVGW registered**
- w **Additional barcode for tracing back the underground fitting (Traceability-Coding)**

For further information, please call our customer service staff and specialist advisers.

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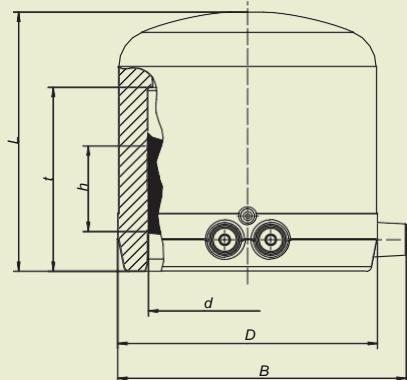
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## SPAK kryt pre SPA

FRIALEN® SAFETY FITTINGS

### SPAK CAP FOR SHUT OFF SADDLES



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
75	612311	1	20	640	99	99	70	31	110	0,280

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8606AU2249

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# FRIALEN® SAFETY FITTINGS

## SPAK CAP FOR SHUT OFF SADDLES

### Areas of Application

FRIALEN-Cap SPAK is used for final sealing of the drill socket (dome) of a Shut off Saddle SPA  $\geq d$  90 or SPA-TL. Also suitable as End Cap MV for  $d$  75.

### Assembly Instructions

The fusion of the Dome of a FRIALEN-Shut off Saddle with the FRIALEN-Cap SPAK takes place by FRIALEN-fusing – leak-proof and longitudinally strong.

The dome has to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d225"). This involves removing the oxide skin and cleaning the pipe ends.

### Good reasons for using the FRIALEN-Cap for Shut off Saddle SPAK:

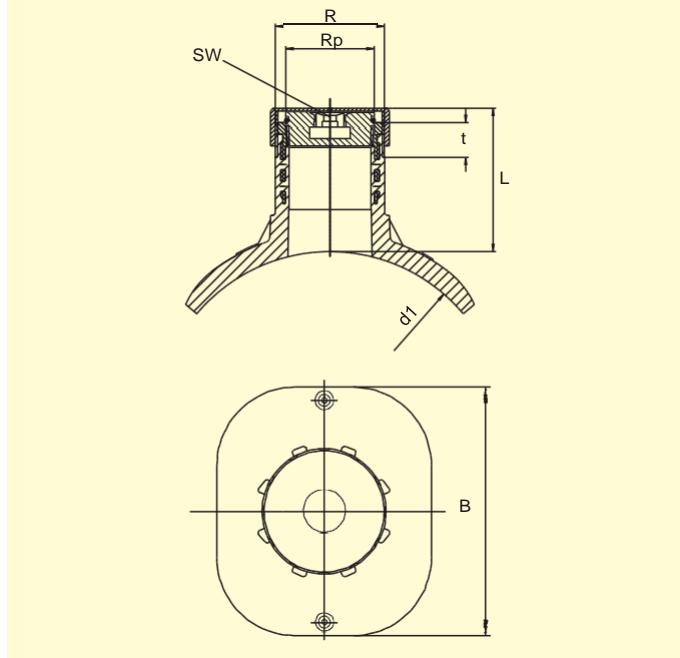
- Large insertion depth for ease of pipe guiding
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the end to prevent the flow of molten material
- Exposed heating coils for optimal heat transfer to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

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**SPA TL****sedlová armatúra pre uzatváracie balóny Top Loading****FRIALEN® Shut off Saddles Top-Loading SPA-TL****FRIALEN®****PE 100 SDR 11**

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



d <sub>1</sub>	R	Rp	Order Ref.	Stock-status	BX	PU	L	t	B	SW	Drilling Ø d <sub>a</sub>	Weight kg/each
250-315 □ (560)	G 2 1/2	G 2	<b>615395</b>	1	18	144	115	24	200	19	57	1,358

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DV-8611AU2250

□ d<sub>1</sub> up to d 560. Please refer to the instructions of the manufacturer of the balloon.**Výrobca:**

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# FRIALEN® Shut off Saddles Top-Loading SPA-TL

## Areas of Application

FRIALEN-Shut off Saddle SPA-TL is suitable for normal commercial shut off equipment.

## Assembly Instructions

The saddle is clamped onto the pipe with the FRIATOP clamping device (see pricelist "Technical Equipment"). Please read the "Assembly and Operating Instructions for FRIATOP clamping unit (Top-Loading)".

The fusion of the HDPE mains and the FRIALEN-Shut off Saddle Top-Loading takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe and the saddle have to be prepared according to the general installation instructions (see Assembly Instructions for "FRIALEN-Large Pipe Technique for laying large pipes and relining pipe networks"). This involves removing the oxide skin and cleaning the pipe covered by the saddle.

Eight good reasons for using the FRIALEN-Shut off Saddle SPA-TL:

- w **Compact construction**
- w **HDPE saddle with exposed heating element for optimal heat transfer**
- w **Compact part suitable for normal commercial shut off equipment for tapping through the saddle**
- w **Brass-guide thread permanently and immovable anchored in the HDPE**
- w **Includes brass plug with square recess**
- w **Protection against access to the dome by fusing on a FRIALEN SPAK**
- w **The SPA-TL can be applied universally to large HDPE pipe diameters d 250-315 (560). This means additional economy due to less material needed and less stock both with suppliers and trade**
- w **Additional barcode for tracing back the underground fitting (Traceability-Coding).**

For further information, please call our customer service staff and specialist advisers.

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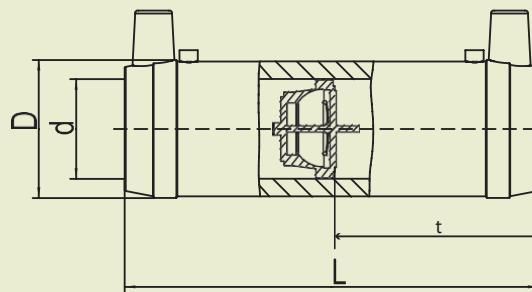
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## FRIASTOPP<sub>mertik</sub> spojka s integrovanou spätnou klapkou MERTIK

### FRIALEN® SAFETY FITTINGS

### FRIASTOPP LONG COUPLERS WITH INTEGRATED MERTIK MAXITROL EXCESS FLOW VALVE



PE 100 SDR 11

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



d	Type	Order Ref.	Stock-status	BX	PU	D	L	t	Operating pressure range pmin - pmax	VN	Weight kg/each
32	Z	616187	1	40	1280	45	136	65	35 mbar - 5 bar	17 - 40	0.140
40	Z	616188	1	30	960	54	146	71	35 mbar - 5 bar	26 - 62	0.220
50	Z	616189	1	16	512	68	175	85	35 mbar - 5 bar	41 - 99	0.380
63	Z	616190	1	10	320	82	197	96	35 mbar - 5 bar	66 - 158	0.530
32	D	616191	1	40	1280	45	136	65	25 mbar - 1 bar	11 - 16	0.140
40	D	616193	1	30	960	54	146	71	25 mbar - 1 bar	19 - 27	0.220
50	D	616195	1	16	512	68	175	85	25 mbar - 1 bar	28 - 40	0.380
63	D	616197	1	10	320	82	197	96	25 mbar - 1 bar	51 - 72	0.530
32	B	616192	1	40	1280	45	136	65	100 mbar - 5 bar	26 - 60	0.140
40	B	616194	2	30	960	54	146	71	100 mbar - 5 bar	39 - 90	0.220
50	B	616196	2	16	512	68	175	85	100 mbar - 5 bar	58 - 135	0.380
63	B	616198	2	10	320	82	197	96	100 mbar - 5 bar	94 - 219	0.530

FRIALEN safety fittings can be fused to pipes SDR 11 - SDR 17.6. Minimum wall thickness  $s_{\min} \geq 3$  mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.

FRIALONG = DV-8601AU2248.

Excess flow valve = DG-4360BO0438.

The **universal type Z** meets perfectly the practical requirements of the operating pressure range and the required flow volume. Type Z boasts a surplus flow opening. Other types on request.

$P_{\min} - P_{\max}$ : min. – max. operating pressure, i.e. incoming pressure Mertik Maxitrol.

VN: nominal flow for  $P_{\min} - P_{\max}$ , related to natural gas  $d = 0.6$  in standard condition (1013.25 mbar, 15 °C) in m<sup>3</sup>/h.

Type D, Z: Mertik Maxitrol with surplus flow device, maximum surplus flow volume D: 30 l/h with 100 mbar, Z: 30 l/h with 1 bar.  
Type B: Mertik Maxitrol without surplus flow device, maximum leak rate 3.0 l/h.

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## FRIALEN® SAFETY FITTINGS

# FRIASTOPP LONG COUPLERS WITH INTEGRATED MERTIK MAXITROL EXCESS FLOW VALVE

### Areas of Application

FRIASTOPP is used for gas and service lines according to DVGW G459-1 appendix (12/03) with operating pressure from 25 mbar – 5 bar. FRIASTOPP is a safety device which automatically cuts off the gas flow in the event of pipe damage, e.g. caused by dredging or drilling. FRIASTOPP is best installed in the branch between mains and service line, immediately behind the service line valve. The Mertik Maxitrol type selection takes place according to the minimum operating pressure of the network and the required flow output based on consumption.

The **universal type Z** meets perfectly the practical requirements of the operating pressure range and the required flow volume. Type Z boasts a surplus flow opening.

### Functions

(see also info sheet on technical data "excess flow valve SENTRY GS for underground external pipe systems by Mertik Maxitrol). FRIASTOPP is subdivided into types D, B or Z depending on mains pressure range. It cuts off automatically at a defined gas flow volume as typically occurs when a gas service line is damaged. Gas flow is cut off instantaneously and completely. The types D and Z have surplus flow devices. The surplus flow amount here allows the pressure in the intact gas pipe to rise again to allow the gas flow monitor system to reopen automatically.

Type D, Z: Mertik Maxitrol with surplus flow device: surplus flow amounts of over 30 l/h require according to DVGW-G459-1-B additional passive safety measures in the building.

Type B without surplus flow opening is reopened by the application of counter pressure (ca. network pressure). It does not need to be made accessible again for this purpose.

### Advice on Processing

FRIASTOPP is to be processed according to the installation and operating procedures. Constricting the gas route by means of FRIASTOPP is authorised up to 10 bar if the excess flow valve is open.

The initial mains pressure of the component may be read on the data plate:

- yellow data plate (Type Z) for 35 mbar to 5 bar,
- orange data plate (Type D) for 25 mbar to 1 bar,
- white data plate (Type B) for 100 mbar to 5 bar.

The use of this component should be marked at the main shut-off device of the building (appropriate label or ID card is included with the delivery). Fusion of FRIASTOPP with the HD-PE service line takes place using the FRIALEN fusion process – leakproof and longitudinally strong. Installation is prepared according to the general installation requirements (see "Assembly Instructions" for "FRIALEN Safety Fittings for house connections and distribution pipes up to d225"), i.e. remove oxidic layer and clean.

### Good reasons for using FRIASTOPP:

- w Factory made combination made from FRIALEN FRIA-LONG long coupler and Mertik Maxitrol excess flow valve
- w The reduction in the cold zones by the integrated GS is more than compensated in comparison with the standard coupler
- w Increased installation safety when using coiled pipes in domestic connections
- w The exposed heating coil and the extra wide fusion zones ensure optimum heat transmission
- w Additional barcode for tracing back the underground fitting (Traceability-Coding)

### The excess flow valve

- w has been adjusted precisely in the factory (VN)
- w has low pressure loss
- w is largely resistant to pollutants in the gas
- w has been successfully applied many thousand times in Germany using these principles
- w has pressure increase from low to medium pressure possible with suitable network
- w Type Z: can be applied universally from 35 mbar to 5 bar, simple storage, no danger of confusion, low operational training cost

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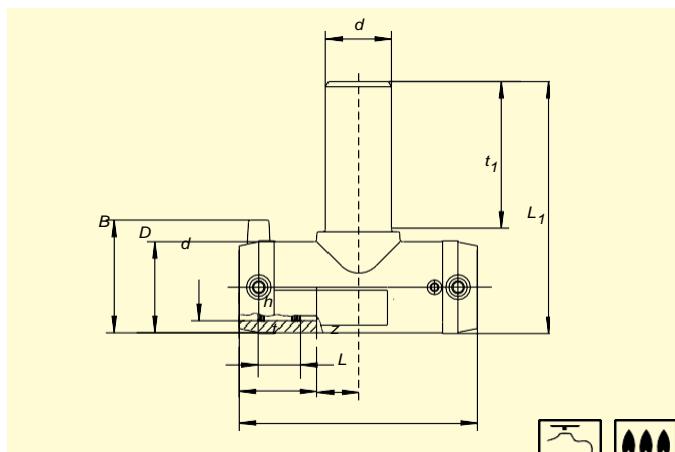
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**TA kit****T kus s predĺženou odbočkou a spojkou**

**FRIALEN® T-Pieces TA (KIT) with extra long outlet spigot in kit version; coupler MB with removeable center stop included**

**PE 100 SDR 11**

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

d	Order Ref.	Stock-status	BX	PU	D	L	L	t	t	z	h	B	Weight kg/each
25	616335	1	40	720	36	108	110	41	66	13	19	54	0,124
32	612161	1	30	540	44	116	131	39	80	19	22	61	0,190
40	612162	1	20	360	53	146	151	43	88	30	25	69,5	0,290
50	612163	1	10	180	67	175	186	49	110	38	28,5	80	0,500
63	612164	1	5	90	81	197	203	56	115	42	33	93,5	0,750

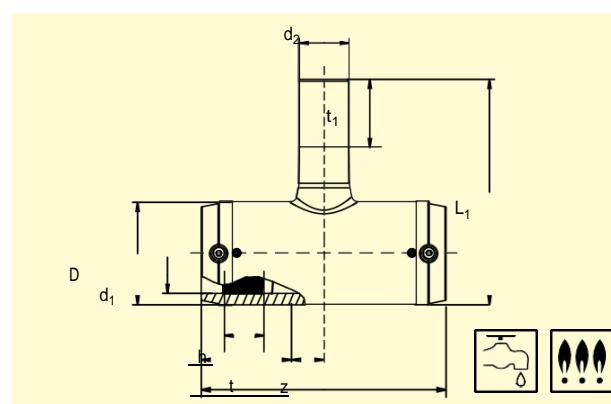
FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17,6, minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request.  
Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DV-8601AU2248

**TA****T kus s predĺženou odbočkou**

**FRIALEN® T-Pieces reduced TA red with extra long outlet spigot**

**NEW!**

**PE 100 SDR 11**

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

NEW!	d / d	Order Ref.	Stock-status	BX	PU	D	L	L	t	t	z	h	B	Weight kg/each
NEW!	32/20	616417	1	30	540	45,5	116	117	44	42	14	21,5	61,5	0,110
NEW!	40/32	616418	1	20	360	54,5	146	148	45,5	51	27,5	24,5	70	0,170
NEW!	50/32	616419	1	10	180	68,5	175	158	55	51	32,5	27,8	82	0,295
NEW!	50/40	616420	1	10	180	68,5	175	167	55	55	32,5	27,8	82	0,315
NEW!	63/32	616421	1	10	180	83,5	197	173	63	51	35,5	32	96	0,435
NEW!	63/40	616422	1	10	180	83,5	197	182	63	55	35,5	32	96	0,450
	63/50	616423	1	10	180	83,5	197	197	63	60	35,5	32	96	0,490

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17,6, minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request.

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.: DV-8601AU2248

Please turn over for important information regarding application of our products.



## FRIALEN® T-Pieces TA (KIT) with extra long outlet spigot in kit version; coupler MB with removeable center stop included and FRIALEN® T-Pieces reduced TA red with extra long outlet spigot

### Areas of Application

The FRIALEN-T pieces TA (KIT) and FRIALEN-T pieces TA red are used for pipe outlets of HDPE pipelines.

### Assembly Instructions

The fusion of the pipe ends with the FRIALEN-TA or with the FRIALEN-TA red, takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared (removing the oxide skin/cleaning) according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225").

**Eleven good reasons for using the FRIALEN-TA (KIT) and FRIALEN-TA red:**

- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Length of outlet spigot dimensioned for two fusion operations
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Touch proof electric contacts
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the fitting (Traceability-Coding)

For further information, please call our customer service staff and specialist advisers.

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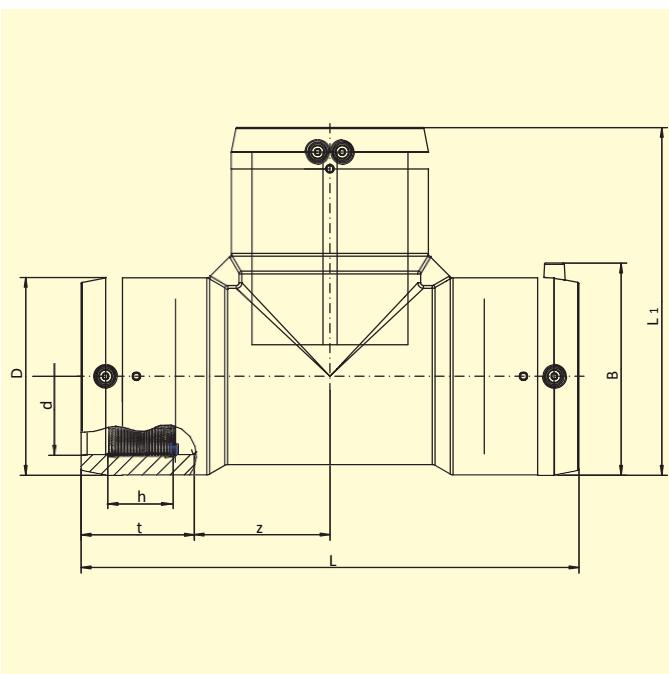
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T

# elektrotvarovkový T kus

## FRIALEN® T-Pieces T



### PE 100 S DR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	t	z	h	B	Weight kg/each
75	612165	1	8	144	96	278	187	70	69	37	111	0,980
90	612166	1	10	80	117	305	211	79	73,5	44	129	1,650
110	612167	1	6	48	142	355	248	87	90,5	48	152	2,580
125	612168	1	5	40	160	384	272	87	105	44	168	3,520
160	615277	1	3	24	200	430	315	96	119	48	206	5,820
180	615691	1	2	16	228	480	354	103	137	62	229	7,900
200	616266	1	1	8	251	550	400	115	160	54	255	11,000
225	615692	1	1	8	280	580	430	118	172	63	281	13,990

\* straight passage fusible in one-step, therefore a total of only two fusions necessary.

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. DVGW-Registration No.: DV-8606AU2249

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**FRIALEN®**

## FRIALEN® T-Pieces T

### Areas of Application

The FRIALEN T-pieces are used for equal pipe outlets of HDPE pipelines.

### Assembly Instructions

The fusion of the pipe ends with the FRIALEN T-piece takes place by FRIALEN electrofusion – leakproof and longitudinally strong.

The pipe ends are prepared (removing the oxide skin/cleaning) according to the general installation instructions (see "Assembly Instructions for FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225").

### Ten good reasons for using the FRIALEN T-piece:

- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Contacts safe to touch
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the fitting (Traceability-Coding)

For further information, please call our customer service staff and specialist advisers.

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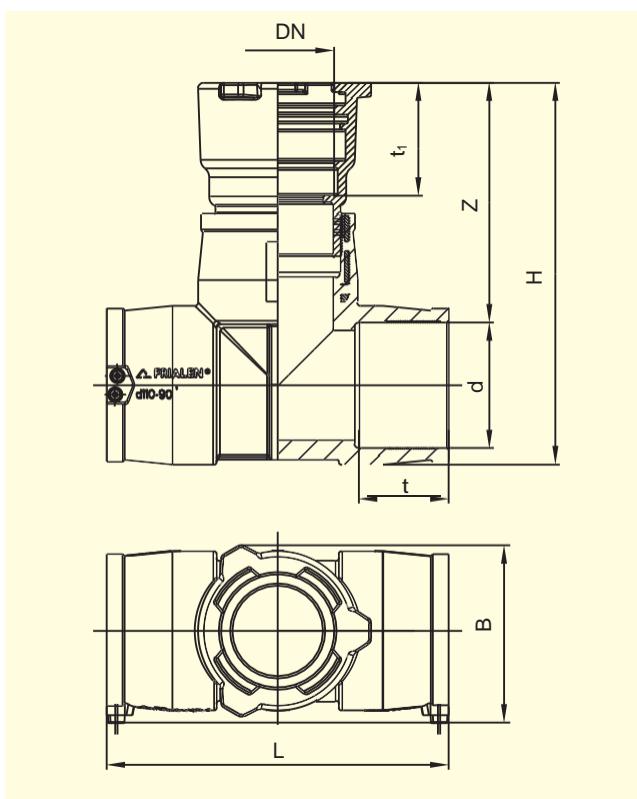
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**TGB****T kus s prechodom PE - tvárná liatina Baio****TGN****T kus s prechodom PE - tvárná liatina NOVOSIT**

## **FRIALEN®-T-Pieces TGB/TGN with Adapter HDPE/GGG for the connection of spigot hydrants Baio TGB/NOVOSIT TGN**

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)



### **FRIALEN®-TGB (Baio)**

d/DN	Order Ref.	Stock-status	VE	PE	L	B	H	Z	t	t <sub>1</sub>	Weight kg/each
110/80	T-616 147	1	4	16	302	158	337	212	83	110	7.530
125/80	T-616 148	1	3	12	314	168	352	210	85	110	8.300
160/80	T-616 149	1	2	8	390	206	376	196	96	110	12.000

### **FRIALEN®-TGN (NOVOSIT)**

d/DN	Order Ref.	Stock-status	VE	PE	L	B	H	Z	t	t <sub>1</sub>	Weight kg/each
110/80	T-616 144	1	4	16	302	158	343	218	83	112	8.000
125/80	T-616 145	1	3	12	314	168	358	216	85	112	8.670
160/80	T-616 146	1	2	8	390	206	418	238	96	112	13.850

See data sheet No. 10 for T-Pieces measurements

FRIALEN®-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6

Please turn over for important information regarding application of the

**FRIALEN®-TGB/TGN**

# FRIALEN®-T-Pieces TGB/TGN with Adapter

## HDPE/GGG for the connection of spigot hydrants

### Baio TGB/NOVOSIT TGN

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)

#### Areas of Application

The FRIALEN®-T-Pieces TGB/TGN with HDPE/GGG adapter allow the connection (longitudinally strong) of a hydrant to a cast spigot of the Baio system (TGB) or NOVOSIT (TGN).

Connecting the hydrant takes place either

- by screwing the spigot hydrant (Baio/TGB<sup>①</sup>) in until it locks into position or
- by pushing the spigot hydrant into the locking ring (NOVOSIT/TGN<sup>②</sup>).

The safety device for protecting the Baio connection from dirt and distortion when activating the hydrant is not included in the delivery schedule.

Sealing ring and locking ring (TGN) of the cast coupler are included in the delivery schedule.

#### Assembly Instructions

Fusing the pipe ends to the FRIALEN®-T-piece takes place using FRIALEN®-fusion process – leakproof and longitudinally strong.

The pipe ends are prepared (remove oxidic layer and clean) according to the general installation instructions (see also "Assembly Instructions" for "FRIALEN®-Safety Fittings for house connections and distribution pipes up to d 225").

<sup>①</sup> Mounting the cast spigot is done according to the installation instructions by the manufacturer of the system in use.

- We reserve the rights to make technical changes -

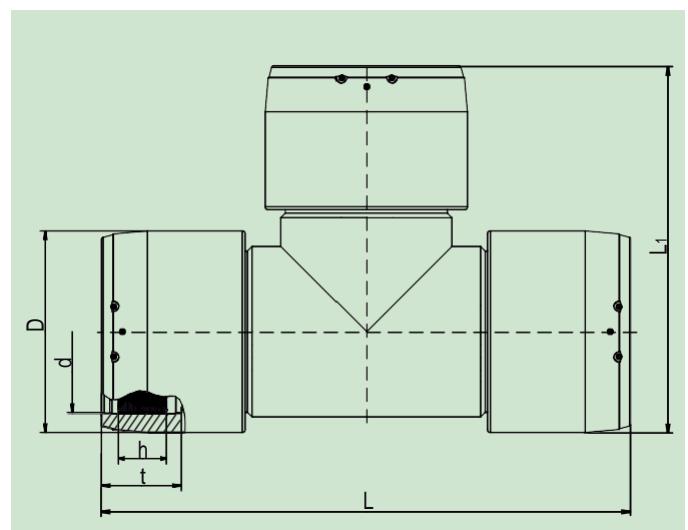
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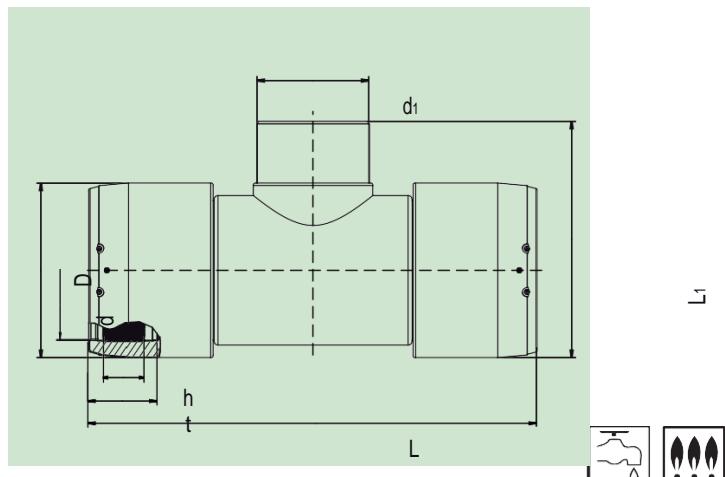
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**T XL****T-kus XL****FRIALEN® XL T-Pieces T****PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	$L_1$	t	h	Weight kg/each
250	<b>616412</b>	1	1	4	310	770	540	128	80	27,400
280	<b>616413</b>	1	1	1	350	905	630	139	84	42,200
315	<b>616414</b>	1	1	1	396	940	670	150	80	55,900

**T RED XL****T-kus XL redukovany****FRIALEN® XL T-Pieces reduced****PE 100 SDR 11**

Maximum working pressure 16 bar (water)/10 bar (gas) outlet spigot pipe SDR11



d	$d_1$	Order Ref.	Stock-status	BX	PU	D	L	$L_1$	t	h	Weight kg/each
250	110	<b>616426</b>	1	1	4	310	770	405	128	80	20,600
250	225	<b>616427</b>	1	1	4	310	770	440	128	80	21,800
280	110	<b>616428</b>	1	1	2	350	905	440	139	84	29,500
280	225	<b>616429</b>	1	1	2	350	905	475	139	84	30,800
315	110	<b>616430</b>	1	1	1	396	940	485	150	80	42,400
315	225	<b>616431</b>	1	1	1	396	940	525	150	80	43,500

Tred - outlet spigot fusible with FRIALEN-Coupler UB d225 or UB d110.

The outlet d225 can be directly reduced to d160 mm using reducer MR d225/160.

The outlet d110 can be directly reduced to d90 mm or d63 mm using reducer MR d110/90 or MR d110/63.

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. DVGW-Registration Nos.: DV-8606AU2249 and DV-8611AU2250.

Please turn over for important information regarding application of our products.

## FRIALEN® XL T-Pieces T and T red

### Areas of Application

FRIALEN XL-T-Pieces and T-Pieces with reduced outlet spigot Abgangsstutzen are used for equal pipe outlets of HDPE pipelines.

### Assembly Instructions

The fusion of the pipe ends with the FRIALEN XL T-piece takes place by FRIALEN electrofusion – leakproof and longitudinally strong.

The pipe ends are prepared (removing the oxide skin cleaning) according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-XL large pipe technology for laying large pipes and reliable pipe networks").

### Good reasons for using the FRIALEN XL-T-Pieces:

- w One compact part instead of several single components
- w Improved logistics and storage
- w Reduced effort for processing, less fusion on construction site
- w Time saving because of faster installation
- w Eyebolts for lifting tools for an easier adjustment in the trench
- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Contacts safe to touch
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the fitting (Traceability-Coding)

For further information, please call our customer service staff and specialist advisers.

#### Výrobca:

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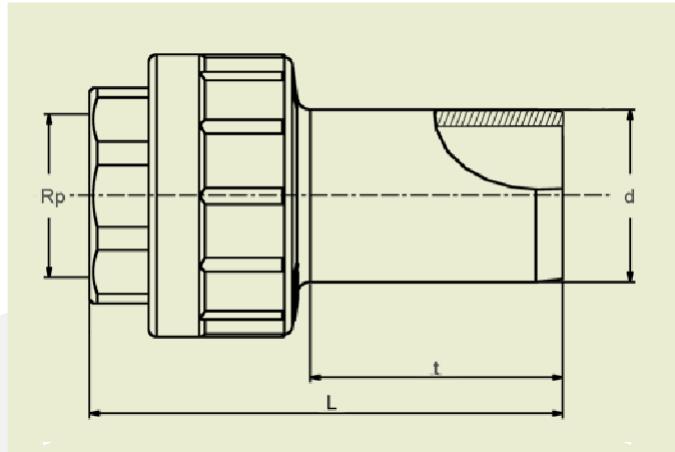
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**UAM**

**prechod PE - mosadz s vonkajším závitom**

**UAM UNIVERSAL ADAPTER HD-PE/BRASS WITH FEMALE THREAD**



**PE 100 SDR 11**

**Maximum working pressure 16 bar (water)/5 bar (gas)**



d	Rp	Order Ref.	Stock-status	BX	PU	L	t	WS in mm	Weight kg/each
20	1/2"	616615	3	80	4800	79	41	26	0.080
25	3/4"	616616	1	60	3600	77	44	32	0.120
32	1"	616156	1	35	2100	88	47	40	0.190
40	1 1/4"	616157	1	20	1200	100	56	49	0.290
50	1 1/2"	616158	1	16	1050	102	57	55	0.350
63	1 1/2"	616621	3	10	600	115	63	55	0.450
63	2"	616159	1	10	600	120	63	67	0.580
75	2 1/2"	616665	3	14	420	128	70	82	0.760
90	3"	616623	3	10	300	144	78	94	1.030
110	4"	616624	3	6	180	161	87	120	1.870
125	4"	616666	3	6	180	161	92	120	1.990

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos.

w DW-7511CR0155

w DG-7521CR0172

The brass-female thread is made from material CW612N or CW617N. Other brass materials on request.

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## UAM UNIVERSAL ADAPTER HD-PE/BRASS WITH FEMALE THREAD

### Areas of Application

The FRIALEN Universal Adapter UAM serves to connect metal construction parts which have a screwed connection e.g. valves with an HD-PE connection pipe. Suitable for gas and water supply or for industrial applications. The version with PE spigot end allows for assembly regardless of location and the homogenous fusion connection with all suitable FRIALEN fittings (exception of FRIALONG- and FRIASTOPP-Long couplers).

The threaded joint is according DIN EN 10226-1.

### Assembly Instructions

Usually the screw connection needs to be assembled first as assembly related torsion forces should not bear down on the connected PE pipe. The tightening forces must be introduced via the specially designed wrench area.

The fusion of the PE spigot end with a FRIALEN coupler takes place by using FRIALEN fusion process – leakproof and longitudinally strong.

The installation is according to the general installation instruction (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

### Good reasons for using the FRIALEN-Universal Adapter UAM:

- PE 100 spigot end – quality controlled
- Tested and quality controlled brass quality
- Assembly regardless of location, high degree of flexibility due to separate fusion of PE spigot end
- May be used with all FRIALEN fittings of identical dimensions (exception of FRIALONG- and FRIASTOPP-Long couplers)
- Universal combination option with the FRIALEN range
- HD-PE side with spigot end for processing without holding device, designed for FRIALEN couplers
- Pull-proof connection
- Brass side tightly connected with PE spigot end, safe from distortion
- Compact construction
- Additional barcode for tracing back the fitting (Traceability-Coding).
- Oxidic layer may be removed from PE spigot end using scraper tools

### Výrobca:

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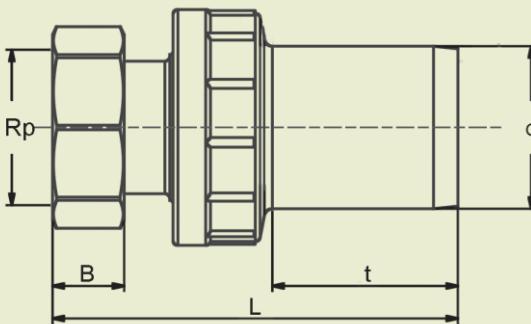
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**UAM ET**

**prechod PE mosadz s voľnou maticou**

**UAM ET UNIVERSAL ADAPTER HD-PE/BRASS WITH TRAVELLING NUT AND FEMALE THREAD**



**PE 100 SDR 11**

**Maximum working pressure 16 bar (water)**



d	Rp	Order Ref.	Stock-status	BX	PU	L	t	B	WS in mm	Weight kg/each
25	3/4"	616654	1	100	3000	110	44	15	30	0.130
32	1"	616655	1	60	1800	120	47	15	36	0.200
40	1 1/4"	616626	1	35	1050	145	56	22	50	0.300
50	1 1/2"	616627	1	30	900	150	57	22	58	0.600
63	1 1/2"	616629	1	20	600	160	63	22	58	0.700
63	2"	616628	1	20	600	170	63	26	67	0.840

Please observe the marking directly at the product, which is mandatory.

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# FRIALEN® SAFETY FITTINGS

## UAM ET UNIVERSAL ADAPTER HD-PE/BRASS WITH TRAVELLING NUT AND FEMALE THREAD

### Areas of Application

The FRIALEN Universal Adapter UAM ET with travelling nut serves to connect metal construction parts which have a screwed connection e.g. valves with an HD-PE connection pipe. The travelling nut admits the replacement of exchangeable components, like water meter. Suitable for water supply or for industrial applications. The version with PE spigot end allows for assembly regardless of location and the homogeneous fusion connection with all suitable FRIALEN fittings (exception of FRIALONG-Long couplers).

The threaded joint is according DIN EN 10226-1.

### Assembly Instructions

Usually the screw connection needs to be assembled first as assembly related torsion forces should not bear down on the connected PE pipe. The tightening forces must be introduced via the specially designed wrench area on the travelling nut.

The fusion of the PE spigot end with a FRIALEN coupler takes place by using FRIALEN fusion process – leakproof and longitudinally strong.

The installation is according to the general installation instruction (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

### Good reasons for using the FRIALEN-Universal Adapter UAM ET:

- PE 100 spigot end – quality controlled
- Tested and quality controlled brass quality
- Assembly regardless of location, high degree of flexibility due to separate fusion of PE spigot end
- May be used with all FRIALEN fittings of identical dimensions (exception of FRIALONG-Long couplers)
- Universal combination option with the FRIALEN range
- HD-PE side with spigot end for processing without holding device, designed for FRIALEN couplers
- Pull-proof connection
- Brass side tightly connected with PE spigot end, safe from distortion
- Travelling nut for a comfortable installation to the brass external thread
- Replacement of screw thread-components without further adaptations
- Compact construction
- Additional barcode for tracing back the fitting (Traceability-Coding).
- Oxidic layer may be removed from PE spigot end using scraper tools

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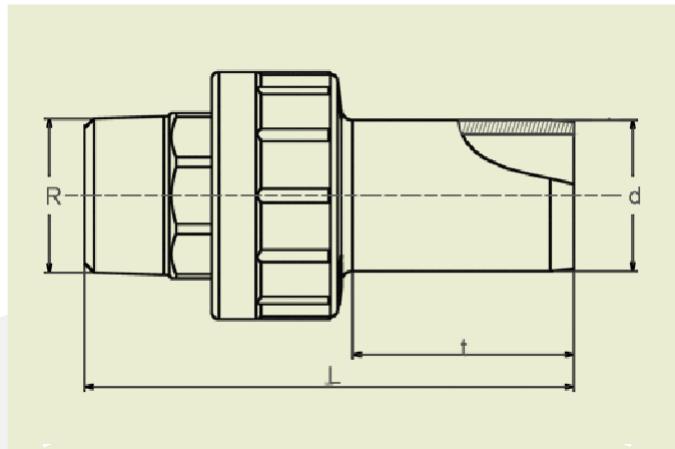
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**UAN**

**prechod PE mosadz s vonkajším závitom**

**UAN UNIVERSAL ADAPTER HD-PE/BRASS WITH MALE THREAD**



**PE 100 SDR 11**

**Maximum working pressure 16 bar (water)/5 bar (gas)**



d	R	Order Ref.	Stock-status	BX	PU	L	t	WS in mm	Weight kg/each
20	1/2"	616604	1	70	4200	94	41	22	0.100
25	3/4"	616605	1	60	2880	92	44	28	0.150
32	1"	616152	1	30	1800	104	47	35	0.240
40	1 1/4"	616153	1	20	960	121	56	44	0.400
50	1 1/2"	616154	1	16	900	123	57	50	0.520
63	1 1/2"	616610	3	9	540	136	63	50	0.620
63	2"	616155	1	9	540	140	63	62	0.730
75	2 1/2"	616612	3	14	336	155	70	77	1.200
90	3"	616613	3	6	180	172	78	90	1.600
110	4"	616614	3	4	120	200	87	115	2.900
125	4"	616664	3	4	120	200	92	115	2.950

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos.

w DW-7511CR0155

w DG-7521CR0172

The brass male thread is made from material      6 N or      6 N. Other brass materials on request.

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## FRIALEN® SAFETY FITTINGS

### **UAN UNIVERSAL ADAPTER HD-PE/BRASS WITH MALE THREAD**

#### **Areas of Application**

The FRIALEN Universal Adapter UAN serves to connect metal construction parts which have a screwed connection e.g. valves with an HD-PE connection pipe. Suitable for gas and water supply or for industrial applications. The version with PE spigot end allows for assembly regardless of location and the homogenous fusion connection with all suitable FRIALEN fittings (exception of FRIALONG- and FRIASTOPP-Long couplers).

The threaded joint is according DIN EN 10226-1.

#### **Assembly Instructions**

Usually the screw connection needs to be assembled first as assembly related torsion forces should not bear down on the connected PE pipe. The tightening forces must be introduced via the specially designed wrench area.

The fusion of the PE spigot end with a FRIALEN coupler takes place by using FRIALEN fusion process – leakproof and longitudinally strong.

The installation is according to the general installation instruction (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide layer and cleaning the pipe ends.

#### **Good reasons for using the FRIALEN-Universal Adapter UAN:**

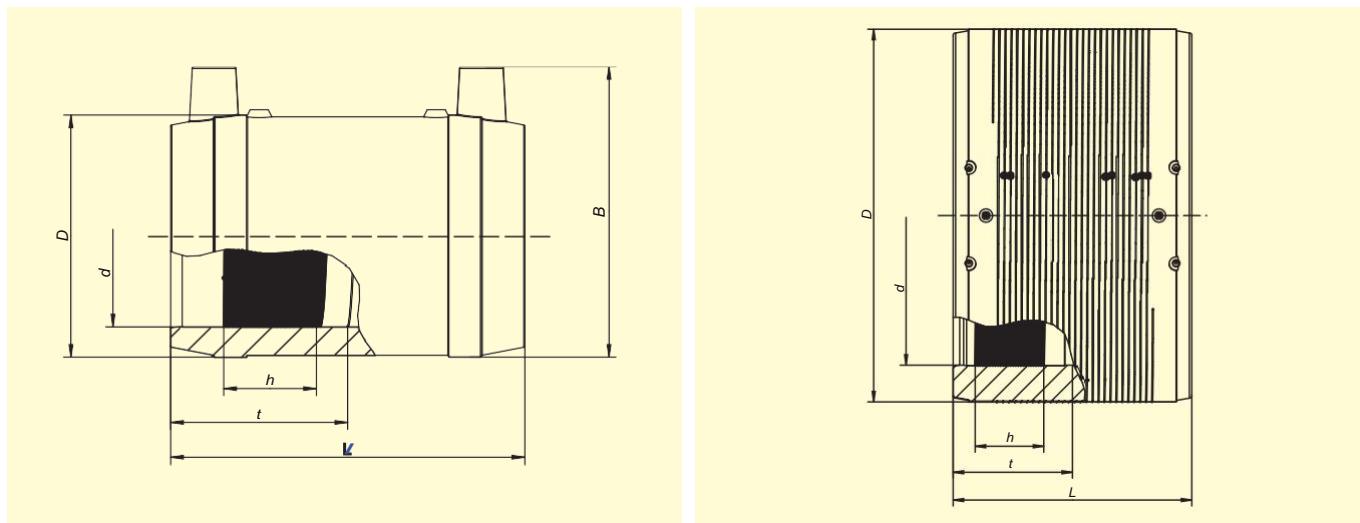
- PE 100 spigot end – quality controlled
- Tested and quality controlled brass quality
- Assembly regardless of location, high degree of flexibility due to separate fusion of PE spigot end
- May be used with all FRIALEN fittings of identical dimensions (exception of FRIALONG- and FRIASTOPP-Long couplers)
- Universal combination option with the FRIALEN range
- HD-PE side with spigot end for processing without holding device, designed for FRIALEN couplers
- Pull-proof connection
- Brass side tightly connected with PE spigot end, safe from distortion
- Compact construction
- Additional barcode for tracing back the fitting (Traceability-Coding)
- Oxidic layer may be removed from PE spigot end using scraper tools

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**UB SDR 7,4****presuvná spojka SDR 7,4****FRIALEN® Slide-over couplers UB and UB-XL SDR 7.4 and SDR 9****PE 100 SDR 7.4**

Maximum working pressure 25 bar (water) / 10 bar Gas\*



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
90	<b>616270</b>	2	30	240	117	138	69	41	127	0,530
110	<b>616271</b>	2	24	192	142	159	79	48	152	0,890
125	<b>616272</b>	2	16	128	160	172	86	46	169	1,200
140	<b>616273</b>	2	12	96	181	184	92	53	187	1,690
160	<b>616274</b>	2	8	64	206	203	101	62	212	2,420
180	<b>616282</b>	2	6	48	225	210	105	63	225	2,950
200	<b>616283</b>	2	2	36	250	224	112	67	250	3,870
225	<b>616284</b>	2	1	33	280	240	120	73	280	5,160
250	<b>616285</b>	2	1	24	315	246	123	68	315	6,840
280	<b>616286</b> □	2	1	18	355	268	134	84	355	10,700
315	<b>616287</b> □	2	1	18	400	285	142	79	400	14,580
355	<b>616288</b> □	2	1	9	450	300	150	88	450	17,900

separate fusion zones

From d 280 with pre-heating barcode for compensation of a larger annular gap.

FRIALEN-Safety Fittings UB SDR 7.4 can be fused to pipes of SDR stages 7.4 to 11. Other SDR-stages on request.  
Please observe the marking directly at the product, which is mandatory.

\* according to EN 12007-2

**PE 100 SDR 9**

Maximum working pressure 20 bar (water) / 10 bar Gas\*



d	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Weight kg/each
400	<b>616441</b> □	1	1	4	500	320	160	90	500	20,800
450	<b>616447</b> □	1	1	4	560	340	170	79	560	30,000
500	<b>616445</b> □	1	1	4	630	360	180	85	630	40,000
560	<b>616446</b> □	2	1	2	715	380	190	95	715	55,000
630	<b>616439</b> □	2	1	2	810	420	210	101	810	79,600

separate fusion zones

With pre-heating barcode for compensation of a larger annular gap.

FRIALEN-Safety Fittings UB SDR 9 can be fused to pipes of SDR stages 9 to 11. Other SDR-stages on request.  
Please observe the marking directly at the product, which is mandatory.

\* according to EN 12007-2

Please turn over for important information regarding application of our products.

## FRIALEN® Slide-over couplers UB and UB-XL SDR 7.4 and SDR 9

### Areas of Application

The FRIALEN-Couplers UB SDR 7.4 and UB SDR 9 are used for pipe connections when laying long runs. Additional areas of application:

- w Integration of adapters into an existing pipeline
- w Connection of pipelines with fixed or restraint points

### Assembly Instructions

The fusion of pipe ends with the FRIALEN-Coupler UB SDR 7.4 or UB SDR 9 takes place using FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225" and "FRIALEN-Special Technology for laying large pipes and relining pipe networks"). This involves removing the oxide skin and cleaning the pipe ends. Please note that spigot of valves must be at least half as long as the coupler.

For removal of the oxide layer, FWSG scraper tools are available which facilitate a uniform swarf removal and a reproducible quality of the fusion area preparation.

To compensate a larger annular gap (> 1 mm, max. 3 mm) between coupler and pipe, the pre-heating barcode can be used for couplers UB SDR 7.4, d 280 - d 355 and couplers SDR 9, d 400 - d 630 (see instructions packed up with the coupler).

Thirteen good reasons for using the FRIALEN-Slide-over Coupler SDR 7.4 or SDR 9:

- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Contacts safe to touch
- w Fusion indicators for visual fusion control
- w From d 225: External reinforcement for an ideal fusion pressure
- w From d 280: unique pre-heating technique for a optimal gap-bridging
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the fitting (Traceability-Coding)

For further information, please call our customer service staff and specialist advisers.

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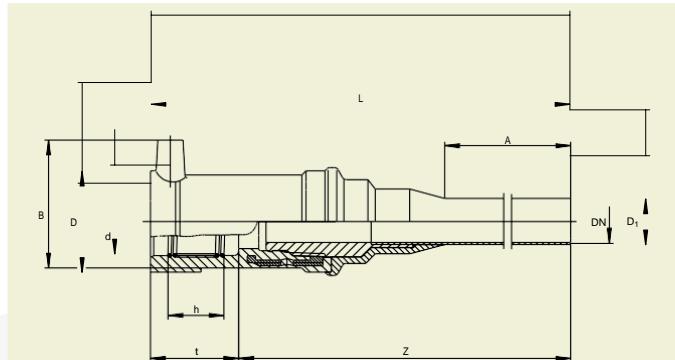
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## UFLG

## prechod PE

### UFLG TRANSITION FITTING FOR LIQUID GAS HD-PE/COPPER



**PE 100 SDR 11**

**Maximum working pressure 5 bar (gas)**



d/DN	Order Ref.	Stock-status	BX	PU	D	L	t	h	B	Z	A	D <sub>1</sub>	Weight kg/each
32/20	615733	1	25	750	49	340	44	24	61	296	200	22	0.510

FRIALEN safety fittings can be fused to pipes SDR11. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request.  
Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

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## FRIALEN® SAFETY FITTINGS

### **UFLG TRANSITION FITTING FOR LIQUID GAS HD-PE/COPPER**

#### **Areas of Application**

The FRIALEN Transition Fittings UFLG are applied for material transition in domestic pipe systems of liquid gas public utilities which are used to run consumer plants in the gaseous phase.

According to DVFG requirements (note TRF 1996-1, 5.4.6.1.1) the FRIALEN Transition Fittings are designed to provide an insoluble connection for earth-covered pipe connections. The FRIALEN Transition Fittings UFLG complies with DVGW work sheet G 477 and can be applied in low and medium pressure areas of up to maximum operating pressure of 5 bar (PN 5).

A certificate (DVGW registration No DV-7501AU2256) exists for the FRIALEN Transition Fittings UFLG. A test certificate can be made available on request.

#### **Assembly Instructions**

Jointing of FRIALEN Transition Fittings UFLG with HD-PE pipes d 32 takes place according to DIN 8074/75 using axial force with an integrated FRIALEN-Coupler. The fusion takes place by using FRIALEN fusion process – leakproof and longitudinally strong.

The copper pipe system is connected by hardsoldering (coupler soldering) with the copper pipe socket, SF Cu-F25, DIN 1787 measuring d 22 x 1.0 mm of the FRIALEN Transition Fitting UFLG. Appropriate reducing fittings are used for other pipe measurements.

#### **Good reasons for using the FRIALEN Transition Fitting UFLG:**

- The FRIALEN Transition Fitting UFLG is a problem solver for providing a connection with axial force on the PE side and thus complies with current rules
- Self-sealing, patented sealing geometry without elastomeric sealing
- HD-PE side with exposed heating element for optimal heat transfer
- Large insertion depth, extra wide fusion zones
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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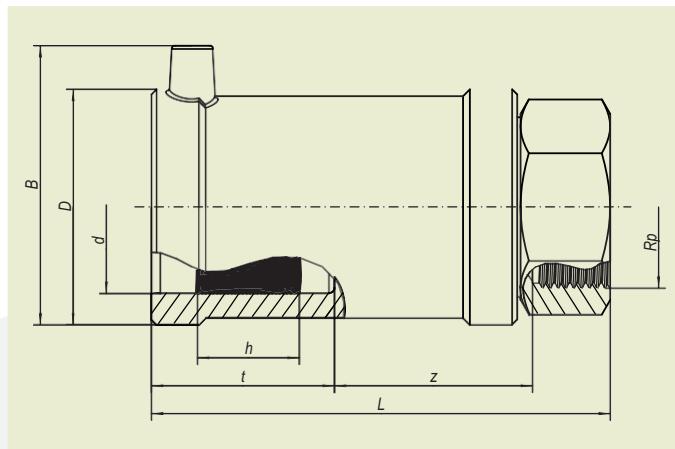
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**USTM**

**prechod PE ocel' s vnútorným závitom**

## **USTM TRANSITION FITTINGS HD-PE/STEEL WITH FEMALE THREAD**



**PE 100 SDR 11**

**Maximum working pressure 5 bar (gas)**



d	Rp	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
32	1"	612570	1	20	1.080	47	112	42	49	24	61	0.340
40	1"	612571	1	20	600	58	121	46	55	30	70	0.610
40	1 1/4"	612572	1	20	800	58	121	46	53	30	70	0.500
50	1 1/2"	612574	1	15	600	70	136	53	60	30	80	0.650
63	2"	612576	1	10	400	84	141	53	61	35	94	1.010

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6, minimum wall thickness  $s \text{ min} \geq 3 \text{ mm}$ . Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

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## FRIALEN® SAFETY FITTINGS

### USTM TRANSITION FITTINGS HD-PE/STEEL WITH FEMALE THREAD

#### Areas of Application

FRIALEN-Transition Fittings USTM are threaded joints as an adaptor from a metal pipe with external thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-USTM:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

**FRIATEC Aktiengesellschaft ·**  
**Technical Plastics Division**  
**P.O.B. 71 02 61 · D-68222**  
**Mannheim**

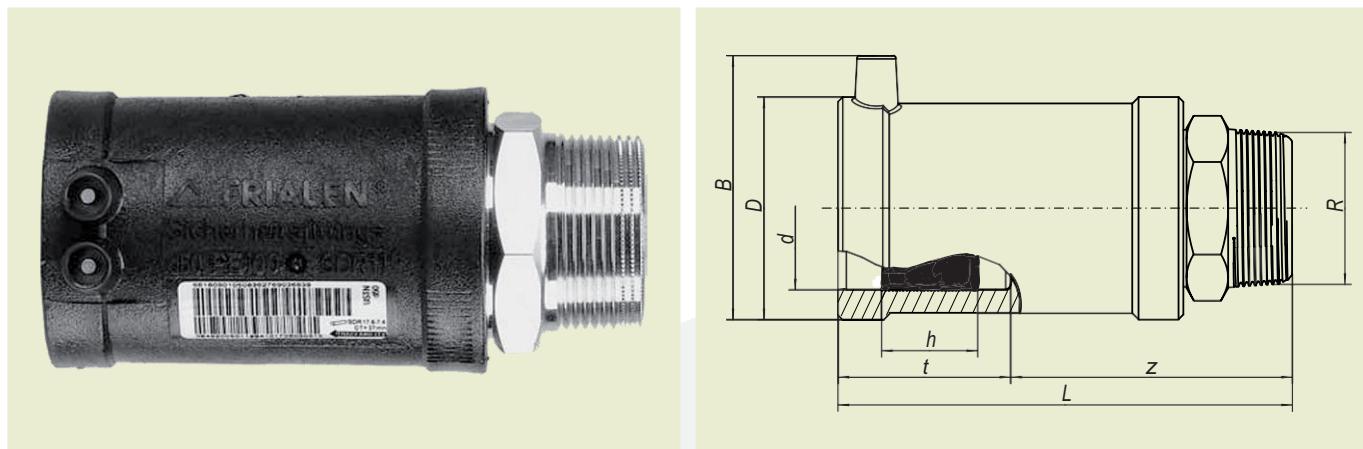
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USTN

prechod PE ocel' s vonkajším záviom

## USTN TRANSITION FITTINGS HD-PE/STEEL WITH MALE THREAD



PE 100 SDR 11

Maximum working pressure 5 bar (gas)



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
20	1/2"	612578	1	40	2.880	35	95	33	62	15	-	0.150
32	1"	612580	1	20	1.080	47	119	42	77	24	61	0.345
40	1 1/4"	612582	1	20	800	58	131	46	86	30	70	0.530
50	1 1/2"	612584	1	15	600	70	146	53	93	30	80	0.700
63	2"	612586	1	10	400	84	152	53	99	35	94	1.050

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6, minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

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## FRIALEN® SAFETY FITTINGS

### USTN TRANSITION FITTINGS HD-PE/STEEL WITH MALE THREAD

#### Areas of Application

The FRIALEN-Transition Fittings USTN are threaded joints as an adaptor from a metal pipe with threaded socket to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong. The installation of the steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN USTN:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

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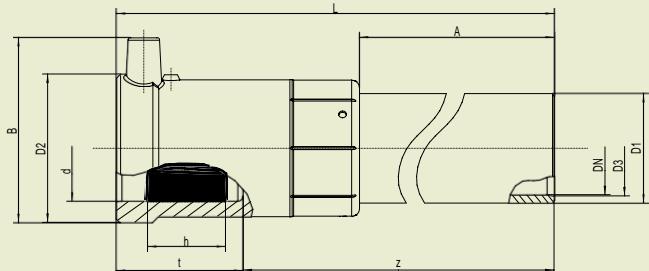
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## USTR

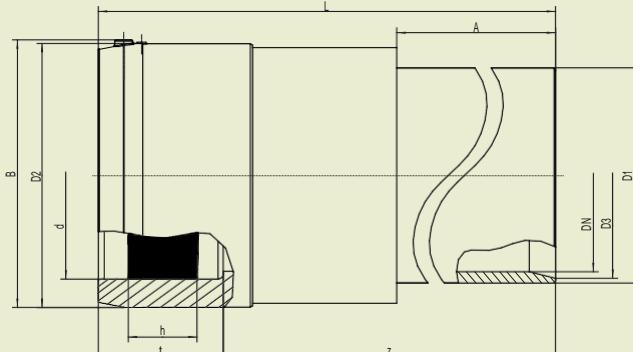
## prechod PE ocel' s integrovanou elektrospojkou

### USTR TRANSITION FITTINGS HD-PE/STEEL

d/DN 25/20-75/65



d/DN 90/80-225/200



PE 100 SDR 11

Maximum working pressure 10 bar (gas)



d/DN	Order Ref.	Stock-status	BX	PU	L	t	z	h	B	A	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	Weight kg/each
25/20	612744	1	20	600	376	36	340	20	300	27	43	21	0,840	
32/25	612780 □	1	15	450	387	44	343	24	63	300	34	49	28	0,820
40/32	612781 □	1	10	300	393	49	344	31	72	300	42	58	37	1,070
50/40	612782 □	1	8	240	409	54	355	31	83	300	48	70	42	1,320
63/50	612783 □	1	6	180	410	55	355	33	96	300	60	83	54	1,880
75/65	612789	1	4	120	425	63	363	41	114	300	76	98	70	4,420
90/80	612784 □	1	1	84	405	79	326	42	130	255	89	130	83	5,350
110/100	612785 □	1	1	54	420	82	338	35	153	255	114	153	107	8,380
125/100	612786 □	1	1	46	425	87	338	42	168	255	114	168	107	8,870
160/150	612787	1	1	24	484	98	386	54	210	250	168	199	161	17,000
180/150	615030	1	1	18	500	105	395	50		250	171	227	161	21,250
200/200	612795	1	1	12	480	112	368	53		225	219	264	211	27,020
225/200	612370	1	1	11	505	120	385	76	225	219	285	211	27,350	

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other wall thicknesses on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos.: DV-7501AU2256, DV-7501AU2257 and DV-7501AU2258

□ Front face of steel pipe according to EN 10217-1; ASTM A106/A106M-14

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## FRIALEN® SAFETY FITTINGS

### USTR TRANSITION FITTINGS HD-PE/STEEL

#### Areas of Application

FRIALEN-Transition Fittings USTR are used for connection of HD-PE house connection pipe to the steel pipe of the house entry fitting. The larger dimensions connect an HD-PE pipeline to a steel fitting or steel pipeline.

#### Assembly Instructions

Due to heat dissipation only arc welding is permissible. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

Welding of the steel end and fusion of the HDPE side have to be prepared according to the general installation instructions (see "Transition Fittings" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-USTR:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

**Výrobca:**

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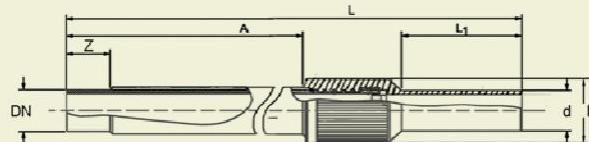
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**USTRS**

**prechod PE ocel bez elektrospojky**

## **USTRS TRANSITION FITTINGS HD-PE/STEEL (SPIGOT FITTINGS)**



**PE 100 SDR 11**

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



d/DN	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Z	A	Weight kg/each
20/15	616632	3	21	630	45	425	80	15	250	0.450
25/20	616633	1	21	630	45	460	90	35	285	0.650
32/25	616634	1	18	432	51	460	95	35	285	0.950
40/32	616635	1	12	360	63	470	100	35	285	1.250
50/40	616636	1	8	240	70	480	110	35	285	1.450
63/50	616637	1	6	180	89	480	110	35	275	2.150
75/65	616638	3	2	98	95	540	130	35	310	2.950
90/80	616639	1	2	98	117	580	140	45	310	3.950
110/100	616640	1	2	50	150	585	145	45	295	7.050
125/100	616641	1	2	50	150	585	150	45	295	7.300
140/125	616642	3	1	20	163	580	155	45	320	8.000
160/150	616643	1	1	20	210	610	160	45	290	10.500
180/150	616644	1	1	20	210	610	170	45	290	11.000
200/200	616645	1	1	16	259	630	155	45	300	17.500
225/200	616646	1	1	16	259	610	145	45	300	18.000
250/250	616647	3	1	8	324	640	140	45	300	30.500
280/250	616648	3	1	8	324	640	100	45	300	31.000
315/300	616649	3	1	6	368	725	220	45	315	46.500
355/300	616650	3	1	6	368	735	260	45	315	48.000
400/400	616651	3	1	3	475	770	190	45	350	83.200
500/500	616652	3	1	2	590	1050	365	50	350	127.500
630/600	616653	3	1	1	735	1100	430	50	360	242.000

Please observe the marking directly at the product, which is mandatory.

DVGW-Registration No.:

w DG-7521CR0259

w DW-7511CR0156

Drinking water approval must be confirmed

Frontface of steel pipe according to: ASTM A106, DIN EN ISO 3183

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## FRIALEN® SAFETY FITTINGS

### USTRS TRANSITION FITTINGS HD-PE/STEEL (SPIGOT FITTINGS)

#### Areas of Application

The FRIALEN Transition Fittings USTRS are adapters to connect HD-PE pipes to steel pipes. The HD-PE spigot end has to be connected to a HD-PE pipe with FRIALEN Couplers. The steel spigot end of the USTRS has to be connected with a welding process to a steel pipe. The front face of the steel pipe is according to ASTM A106 and DIN EN ISO 3183.

#### Assembly Instructions

The connection of the steel side happens with arc welding. Due to the heat dissipation only arc welding is permissible.

The fusion of the PE spigot end with a FRIALEN coupler takes place by using FRIALEN fusion process – leakproof and longitudinally strong.

The welding of the steel end and the fusion of the HD-PE side have to be prepared according to the general installation instruction (see "Transition Fittings" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes"). This involves removing the oxide layer and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Fitting USTRS:

- w Steel end permanently anchored in the HD-PE and will not distort
- w Little insulating work due to coated steel pipe
- w For drinking water: Steel pipe internal galvanized according to EN 10240-A1, see also note below the table on page 1
- w HD-PE side with spigot end for processing without holding device, designed for FRIALEN couplers
- w Pull-proof connection
- w Compact construction
- w Additional barcode for tracing back the fitting (Traceability Coding)
- w Oxidic layer may be removed from PE spigot end using scraper tools

Výrobca:

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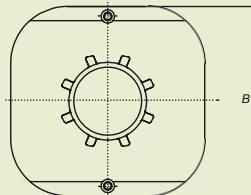
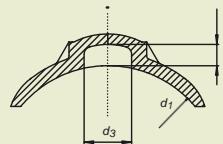
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VSC - TL

zosilňovací strmeň Top loading

## VSC-TL REPAIR SADDLE TOP-LOADING



PE 100 SDR 11

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



d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	t	B	Weight kg/each
250-560	615397	1	10	180	50	20	200	0,570

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8611AU2250

**Výrobca:**

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# FRIALEN® SAFETY FITTINGS

## VSC-TL REPAIR SADDLE TOP-LOADING

### Areas of Application

The FRIALEN-Repair Saddle Top-Loading VSC-TL is used for the repair of minor pipe damages **with and without** discharge of media.

### Assembly Instructions

The saddle is suitable for all pipe diameters in the given range. It is clamped onto the pipe by means of the FRIATOP clamping unit (see product range "Technical Equipment"). Please read the "Assembly and Operating Instructions for FRIATOP Clamping Unit (Top-Loading)".

The fusion of the HD-PE distribution pipes with the FRIALEN-Repair Saddle takes place by FRIALEN-fusing – leakproof and longitudinally strong.

In order to avoid discharge of media, the leak has to be sealed with a separate plug ( $\leq d_3$ ).

The pipe and the saddle have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Special Technology for laying large bore pipes and relining pipe networks  $\geq d 250$ "). This involves removing the oxide layer and cleaning the pipe covered by the saddle.

### Good reasons for using the FRIALEN-VSC-TL:

- Compact construction
- HD-PE saddle with exposed heating element for optimal heat transfer
- Sealing area free of heating wires
- Extra wide fusion zone
- The VSC-TL can be applied universally to large HD-PE pipe diameters  $d 250-560$ . This means additional economy since less material is needed and less stock at both suppliers and trade is necessary.
- Additional barcode for tracing back the fitting (Traceability-Coding)

### Výrobca:

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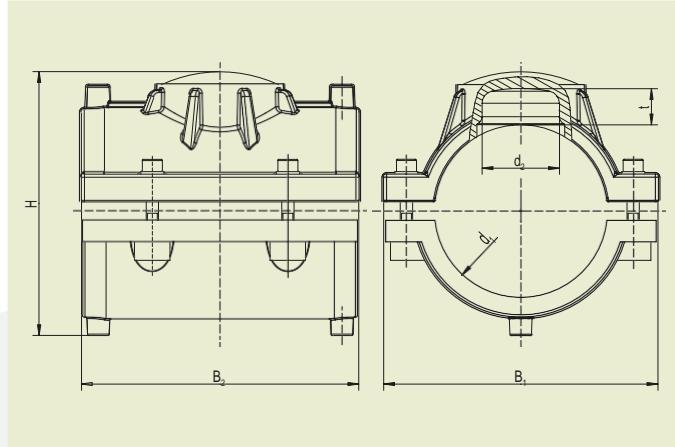
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VVS

opravný a zosilňovací strmeň dvojdielny

## VVS REPAIR AND REINFORCING SADDLES



PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	t	H	B1	B2	Weight kg/each
90	50	615164	1	24	192	21	148	155	150	0.920
110	50	615165	1	16	128	21	170	178	180	1.162
125	50	615166	1	15	120	21	183	190	185	1.360
160	50	615168	1	10	80	21	218	225	195	1.670
180	50	615169	1	6	48	21	238	240	195	1.810
200	50	615170	1	5	40	21	258	250	195	1.820
225	50	615171	1	5	40	21	283	255	195	1.900

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8606AU2249

Výrobca:

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# FRIALEN® SAFETY FITTINGS

## VVS REPAIR AND REINFORCING SADDLES

### Areas of Application

The FRIALEN-Repair and Reinforcing Saddles are used for the repair of minor pipe damages.

### Assembly Instructions

The fusion of the HD-PE pipe with the FRIALEN-Repair and Reinforcing Saddle takes place by FRIALEN-fusing – leak-proof and longitudinally strong.

In order to avoid discharge of media, the leak has to be sealed with a separate plug ( $\leq d_2$ ).

Both HD-PE saddles have to be prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to  $d = 225$ "). This includes removing the oxide layer and cleaning the pipe covered by the saddles.

### Good reasons for using the FRIALEN-VVS:

- Compact construction
- HD-PE saddle with exposed heating element for optimal heat transfer
- Sealing area free of heating wires
- Preassembled unit without loose parts
- Extra wide fusion zone
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

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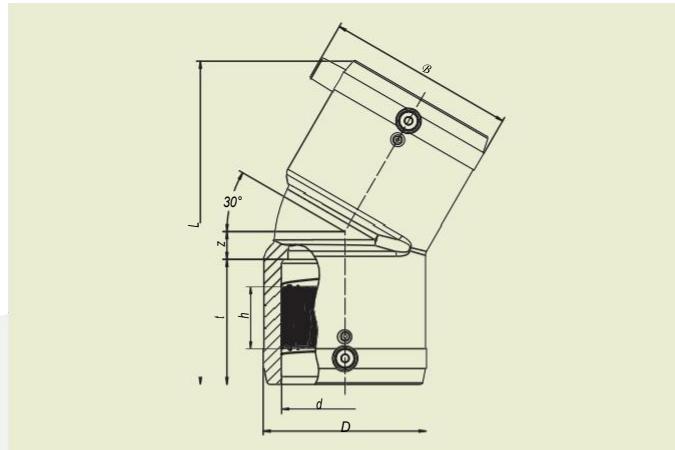
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W30°

elektrotvarovkové koleno 30°

W30° ELBOWS 30°



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
90	615272	1	8	144	115	224	72	24	43	123	0,780
110	615273	1	6	108	142	252	83	27	47	157	1,260
125	615274	1	4	72	158	270	85	30	51	162	1,640
160	615340	1	5	40	199	350	96	40	59	198	3,870
180	616261	1	3	24	229	390	101	79	57	234	4,990
200	616262	1	1	18	254	412	106	84	54	256	6,350
225	616263	1	1	18	281	456	123	86	64	282	8,220

FRIALEN Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-8606AU2249

Výrobca:

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## FRIALEN® SAFETY FITTINGS

### W30° ELBOWS 30°

#### Areas of Application

The FRIALEN-Elbow W30° is used for all changes of direction in HD-PE pipes.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN Elbows W30° takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN Elbows W30°:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

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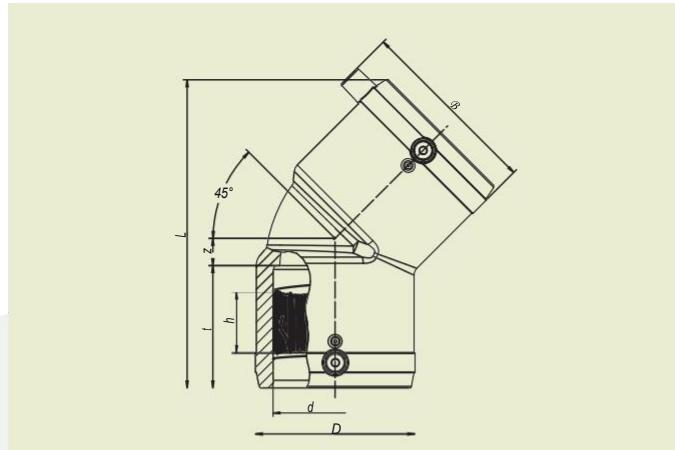
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**W45°**

**elektrotvarovkové koleno 45°**

**W45° ELBOWS 45°**



**PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
32	612092	1	45	1440	43	102	44	8	21	60	0,070
40	612094	1	25	800	54	120	49	11	29	70	0,110
50	612096	1	20	640	66	136	54	13	32	80	0,175
63	612098	1	10	320	82	158	62	14	34	95	0,295
75	612100	1	14	252	96	198	70	29	38	111	0,520
90	612102	1	8	144	115	232	79	35	45	128	0,810
110	612104	1	10	80	138	265	85	41	50	150	1,320
125	612106	1	10	80	157	279	87	46	44	167	1,770
160	615275	1	4	32	207	377	92	88	44	210	4,410
180	615687	1	3	24	228	382	97	83	65	229	4,610
200	616264	1	1	18	254	415	106	87	54	256	6,760
225	615688	1	1	8	280	450	112	98	66	281	8,290

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos. DV-8601AU2248 and DV-8606AU2249

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## FRIALEN® SAFETY FITTINGS

### W45° ELBOWS 45°

#### Areas of Application

The FRIALEN-Elbow W45° is used for all changes of direction in HD-PE pipes.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN-Elbows W45° takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see Assembly Instructions for FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Elbows W45°:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

Výrobca:

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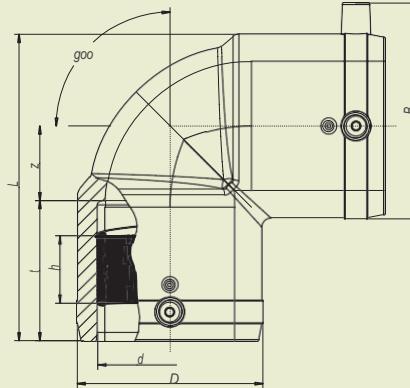
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W90°

elektrotvarovkové koleno 90°

W90° ELBOWS 90°



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	B	Weight kg/each
25	612091	1	60	1920	37	73	40	15	19	54	0,060
32	612093	1	45	1440	43	82	44	16	21	61	0,070
40	612095	1	25	800	53	96	49	21	29	70	0,110
50	612097	1	20	640	66	113	55	26	32	81	0,190
63	612099	1	8	256	83	136	62	33	30	96	0,340
75	612101	1	12	216	96	170	70	53	37	111	0,600
90	612103	1	6	108	115	202	75	65	45	128	0,950
110	612105	1	10	80	138	234	81	84	50	150	1,560
125	612107	1	8	64	157	254	87	89	44	167	2,030
160	615276	1	3	24	207	329	92	133	44	210	4,850
180	615689	1	3	24	228	354	94	146	65	229	5,760
200	616265	1	2	16	254	392	106	159	54	256	8,557
225	615690	1	1	8	280	430	113	177	66	281	10,220

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Minimum wall thickness s min  $\geq$  3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration Nos.: DV-8601AU2248 and DV-8606AU2249

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## FRIALEN® SAFETY FITTINGS

### W90° ELBOWS 90°

#### Areas of Application

The FRIALEN-Elbow W90° is used for all changes of direction in HD-PE pipes.

#### Assembly Instructions

The fusion of the pipe ends with the FRIALEN-Elbows W90° takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Elbows W90°:

- Large coupler depth for ease of pipe guiding (no holding clamps required)
- Extra wide fusion zones
- Maximum stability through great wall thickness
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for direct heat transmission to the pipe
- Small annular gap for build-up of optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Durable batch marking
- Individually wrapped for dirt protection
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

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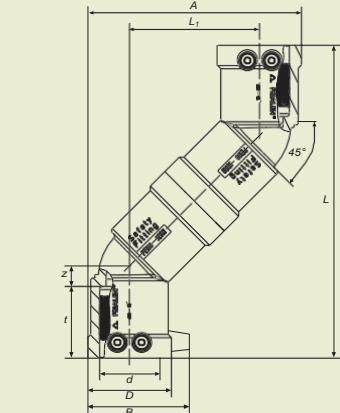
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**WET**

**etážová elektrotvarovková spojka**

**WET SWAN NECK BEND**



**PE 100 SDR 11**

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



d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	t	z	B	A	Weight kg/each
32	616051	1	15	750	49	177	74	42	10	63	123	0.220
40	616052	1	15	480	58	215	89	49	14	72	147	0.330
50	616053	1	15	270	70	242	101	53	16	83	171	0.510
63	616054	1	10	180	84	256	106	55	20	95	190	0.700

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8601AU2248

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# FRIALEN® SAFETY FITTINGS

## WET SWAN NECK BEND

### Areas of Application

The FRIALEN Swan Neck Bend WET is applied:

- w for the connection of pipes which do not approach each other in alignment, for example the connection of the outlet spigot of a pressure tapping tee with the domestic pipe via earth rocket technology,
- w where two mains are installed parallel and at the same height. Between the outlet spigot of the pressure tapping tee DAA/DAV and the domestic pipe a deviation leap is necessary to run above the second pipe.

### Assembly Instructions

The fusion of the pipe ends with the FRIALEN Swan Neck Bend WET takes place by FRIALEN-fusing – leakproof and longitudinally strong. The pipe ends are prepared according to the general installation instructions (see "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

### Good reasons for using the FRIALEN-Swan Neck Bend WET:

- w Complete prefabricated part to connect not aligned outlet spigot and pipe end
- w Large coupler depth for ease of pipe guiding (no holding clamps required)
- w Extra wide fusion zones
- w Maximum stability through great wall thickness
- w Cold zones at the front side and in the middle of the coupler
- w Exposed heating coil for direct heat transmission to the pipe
- w Small annular gap for build-up of optimum joining pressure in the fusion zone
- w Contacts safe to touch
- w Durable batch marking
- w Individually wrapped for dirt protection
- w Additional barcode for tracing back the underground fitting (Traceability-Coding)

**Výrobca:**

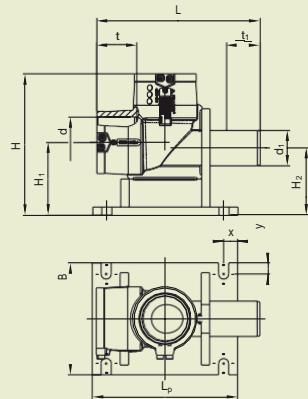
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## WF 90° elektrotavrovkové koleno 90° s opornou pätkou

### WF 90 90° ELBOW WITH BASE UNIT



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	d <sub>i</sub>	Order Ref.	Stock-status	BX	PU	L	LP	t	t1	B	H1	H2	x	y	H	Weight kg/each
90	63	615989	1	3	54	293	260	72	63	200	130	120	25	20	253	2.250
110	63	615998 □	1	6	48	346	260	83	63	200	142	127	25	20	293	2.940

FRIALEN-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other wall thicknesses on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No.: DV-8606AU2249

□ see FLR flange reducer for connection to DN80

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## FRIALEN® SAFETY FITTINGS

### WF 90 | 90° ELBOW WITH BASE UNIT

#### Areas of Application

The FRIALEN-Elbow with Base Unit WF 90° allows for connection of a hydrant alongside the mains. The hydrant connection takes place either

- by fusing the HD-PE pointed end of the hydrant with the construction part or
- for a hydrant with flange connection by applying the FRIALEN-Full Faced Flange EFL\* or with a Flange Reduction FLR\*\* d 110/DN 80.

Connection to the HD-PE mains takes place without pressure via the FRIALEN-Spigot Saddle SA d 110/90-225/110 (see Data Sheet No. 27 and leaflet) or under operating pressure with an additional cut-off device. For drilling into the mains we recommend drilling equipment by Hütz + Baumgarten.

#### Assembly Instructions

Please refer to the FRIALEN "Assembly Instructions" for preparations for the FRIALEN-fusion process (two fusion procedures) of the elbow piece with HD-PE pipes or HD-PE pipe and HD-PE valve (marking insertion depth, removing oxide skin, cleaning, etc.).

\* (see Data Sheet EFL No. 46)

\*\* (see Data Sheet FLR No. 61)

#### Good reasons for using the FRIALEN-Elbow with base unit WF 90°:

- Great wall thickness ensures optimum stability and safe positioning of the hydrant
- Separate fusion zones enable simple tension-free fusion
- Floor plate can be mounted directly onto foundations
- Base unit and elbow make up a homogeneous unit
- Large coupler depth for ease of guidance of pipe and construction part
- Small annular gap for build-up optimum joining pressure in the fusion zone
- Extra wide fusion zones
- Cold zones at the front side and in the middle of the coupler
- Exposed heating coil for optimum heat transfer onto pipe/construction part
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

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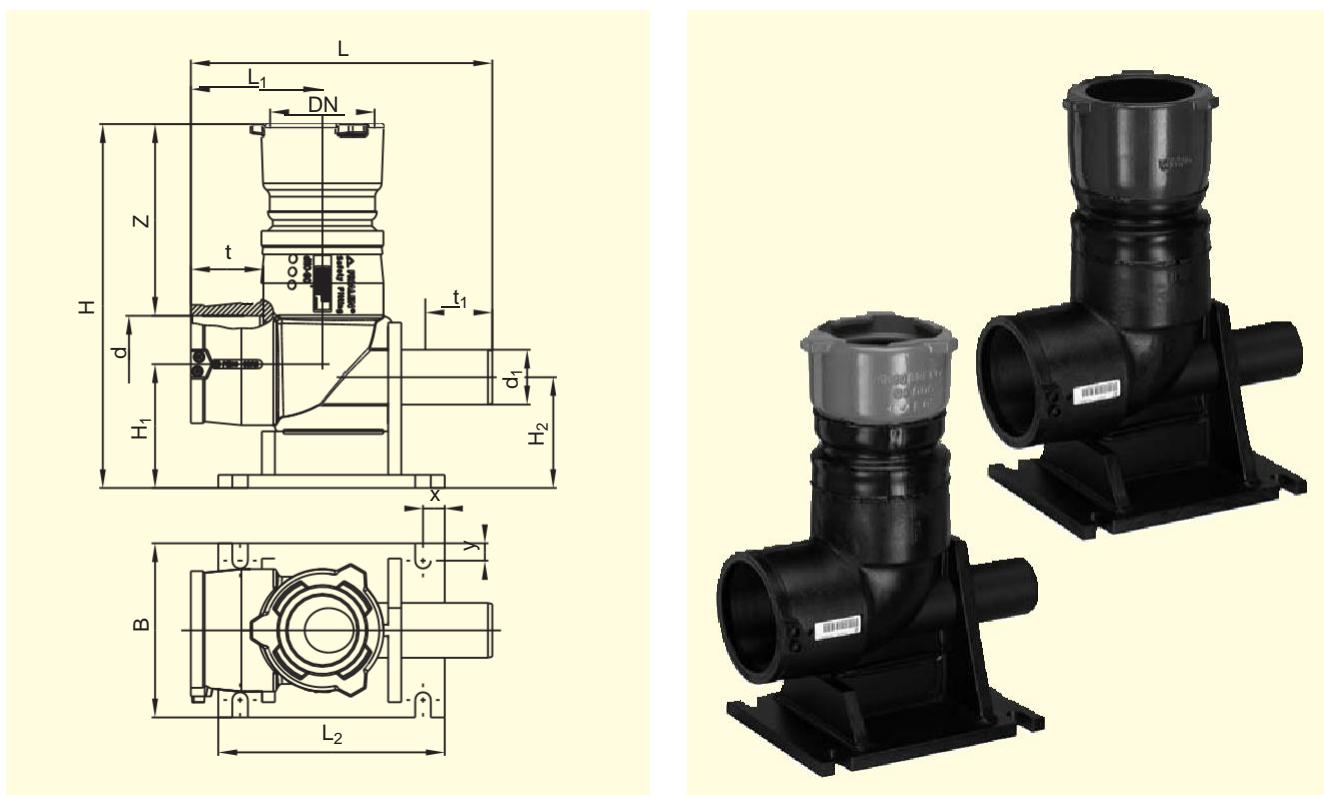
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**WFGB****elektrotvarovkové koleno s pätkou a prechodom PE liatina**

# **FRIALEN®-Elbow 90° WFGB/WFGN with base and HDPE/GGG adapter for the connection of spigot hydrant Baio WFGB/NOVOSIT WFGN**

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)



## **FRIALEN®-WFGB (Baio)**

d/DN	d1	Order Ref.	Stock-status	VE	PE	L	L <sub>1</sub>	L <sub>2</sub>	B	H	H <sub>1</sub>	H <sub>2</sub>	Z	t	t <sub>1</sub>	Weight kg/each
110/80	63	T-616 150	1	3	12	346	151	260	200	418	142	127	220	81	75	8.340

## **FRIALEN®-WFGN (NOVOSIT)**

d/DN	d1	Order Ref.	Stock-status	VE	PE	L	L <sub>1</sub>	L <sub>2</sub>	B	H	H <sub>1</sub>	H <sub>2</sub>	Z	t	t <sub>1</sub>	Weight kg/each
110/80	63	T-616 151	1	3	12	346	151	260	200	424	142	127	226	81	75	8.460

For measurements of Elbow 90° with WF 90° pedestal see data sheet No. 47

FRIALEN®-Safety Fittings can be fused to pipes of SDR stages 11 to 17.6

Please turn over for important information regarding application of the  
**FRIALEN®-Elbow 90°WFGB/WFGN**



# FRIALEN®-Elbow 90° WFGB/WFGN with base and HDPE/GGG adapter for the connection of spigot hydrant Baio WFGB/NOVOSIT WFGN

**PE 100 SDR 11**

Maximum working pressure 16 bar (water)

## Areas of Application

The FRIALEN®-Elbow WFGB/WFGN with base and adapter HDPE/GGG allow for connection with axial force to hydrant with cast spigot of the Baio (WFGB) system or NOVOSIT (WFGN).

Connecting the hydrant takes place either

- by screwing the spigot hydrant (Baio/ WFGB <sup>©</sup>) in until it locks into position or
- by pushing the spigot hydrant into the locking ring (NOVOSIT/WFGN <sup>©</sup>).

The safety device for protecting the Baio connection from dirt and distortion when activating the hydrant is not included in the delivery schedule.

Sealing ring and locking ring (WFGN) of the cast coupler are included in the delivery schedule.

## Assembly Instructions

Please refer to the FRIALEN®-installation instructions ("Installation Instructions" for FRIALEN®-safety fittings for service and distribution lines up to d 225) for required preparation of the fusion process for the side of the elbow with HD-PE pipe and the main pipeline (mark insertion depth, remove oxidic layer, clean etc.)

<sup>©</sup> Mounting the cast spigot is done according the installation instructions by the manufacturer of the system used.

- We reserve the rights to make technical changes -

**For further information, please call our  
FRIALEN®-customer service staff and specialist advisers.**

Výrobca:

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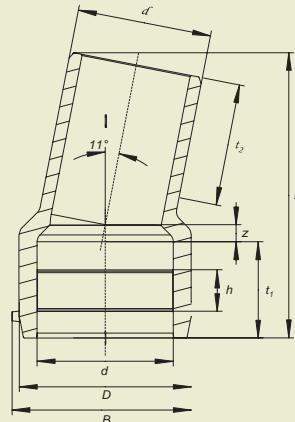
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WS11°

koleno 11° jednostranne elektrotvarovkové

## WS11 I/A ELBOWS 11°



PE 100 SDR 11

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



d	Order Ref.	Stock-status	BX	PU	D	L	t1	t2	z	h	B	Weight kg/each
110	616139	1	8	144	141	235	79	82.00	14	32	151	0.920
125	616140	1	5	90	160	250	84	87.00	15	34	168	1.250
160	616141	1	8	64	200	295	93	98.00	20	50	206	2.260
180	616142	1	4	32	226	310	100	105.00	22	50	230	3.050
225	616143	1	1	18	280	350	114	120.00	24	50	284	5.280

FRIALEN Safety Fittings can be fused to pipes of SDR stages 11 to 17.6. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW Registration No.: DV-8606AU2249.

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## FRIALEN® SAFETY FITTINGS

### WS11 I/A ELBOWS 11°

#### Areas of Application

The FRIALEN Elbow WS 11° is designed for universal direction changes in HD-PE pipes even in restricted spaces. Multiple applications allow 22°, 33° etc ... elbows to be reached.

#### Assembly Instructions

Fusing the pipe ends to the FRIALEN Elbow WS 11° takes place by the FRIALEN fusing – leakproof and longitudinal strong. One of the pipe ends is inserted in the coupler side of the FRIALEN Elbow WS 11° and then fused, the other pipe end is connected and fused to a FRIALEN Coupler. The pipe ends are prepared (remove oxide skin and cleaning) according to the general installation instructions (see also „Assembly Instructions“ for „FRIALEN Safety Fittings for house connections and distribution pipes up to d 225“).

#### Good reasons for using the FRIALEN Elbow WS 11°:

- Universal direction changes due to multiple applications 11°/22°/33° or 45° + 11° ...
- Maximum flexibility in case of obstructions and in restricted spaces due to coupler/spigot design
- Long insertion depth of coupler for optimum pipe guidance (no holding device required)
- Extra wide fusion zone inside coupler
- Maximum stability due to large wall thickness
- Cold zones at the front and in the centre of the coupler
- Exposed heating coil for direct heat transfer to pipe
- Small annular gap resulting in optimum joining pressure in the fusion zone
- Contacts safe to touch
- Fusion indicator for visual fusion control
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

**Výrobca:**

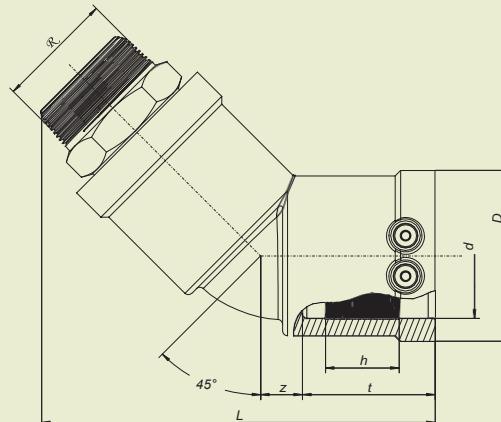
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## WUN 45 prechodové koleno PE mosadz 45°, vonkajší závit

### WUN 45 TRANSITION ELBOWS 45° HD-PE/BRASS WITH MALE THREAD



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z	h	Weight kg/each
32	1"	612145	1	20	1000	47	126	42	10	24	0.340
40	1 1/4"	612149	1	15	750	58	140	46	17	30	0.490
40	1 1/2"	612139	1	15	750	58	142	46	17	30	0.540
50	1 1/2"	612144	1	10	500	70	163	53	18	30	0.660
63	1 1/2"	612147	1	10	320	84	176	53	22	35	0.950
63	2"	612146	1	10	320	84	178	53	22	35	0.980

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

Standard: Brass. Gunmetal and V2A on request

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## FRIALEN® SAFETY FITTINGS

### WUN 45 TRANSITION ELBOWS 45° HD-PE/BRASS WITH MALE THREAD

#### Areas of Application

FRIALEN-Transition Elbows WUN 45° are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the brass and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Elbows WUN 45°:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Brass end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

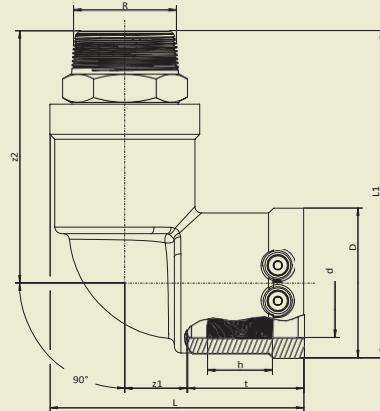
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## WUN 90 prechodové koleno PE mosadz 90°, vonkajší závit

### WUN 90 TRANSITION ELBOWS 90° HD-PE/BRASS WITH MALE THREAD



PE 100 SDR 11

Maximum working pressure 16 bar (water)



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z <sub>1</sub>	z <sub>2</sub>	h	Weight kg/each
32	1"	612120	1	20	1000	47	85	42	21	89	24	0.340
32	1 1/2"	612140	1	20	800	47	94	42	21	93	24	0.470
40	1"	612127	1	15	750	58	102	46	27	101	30	0.500
40	1 1/4"	612122	1	15	750	58	102	46	27	103	30	0.520
40	1 1/2"	612121	1	15	750	58	102	46	27	104	30	0.560
50	1"	612119	1	10	500	70	118	53	30	110	30	0.680
50	1 1/4"	612123	1	10	500	70	118	53	30	112	30	0.670
50	1 1/2"	612124	1	10	500	70	118	53	30	113	30	0.680
63	1 1/2"	612125	1	10	320	84	128	53	33	116	35	0.980
63	2"	612126	1	10	320	84	128	53	33	121	35	1.000

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

Standard: Brass. Gunmetal and V2A on request

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## FRIALEN® SAFETY FITTINGS

### WUN 90° TRANSITION ELBOWS 90° HD-PE/BRASS WITH MALE THREAD

#### Areas of Application

FRIALEN-Transition Elbows WUN 90° are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the brass and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Elbows WUN 90°:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Brass end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the underground fitting (Traceability-Coding)

**Výrobca:**

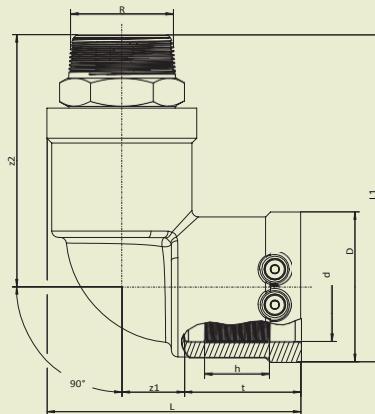
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## WUN-V2A 90° prechodové koleno PE nerez 90°, vonkajší závit

### WUN-V2A 90° TRANSITION ELBOWS 90° HD-PE/STAINLESS STEEL WITH MALE THREAD



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



d	R	Order Ref.	Stock-status	BX	PU	D	L	t	z <sub>1</sub>	z <sub>2</sub>	h	Weight kg/each
40	1"	616514	1	15	750	58	102	45,5	27	101	30	0,540
40	1 1/2"	612148	1	15	750	58	102	45,5	27	104	30	0,535
50	1 1/2"	612118	1	10	500	70	118	53	30	113	29,8	0,650
63	1 1/2"	612186	1	10	320	84	128	53	33	116	35	0,980
63	2"	616515	1	10	320	84	128	53	33	121	35	0,950

#### Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6, minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory.

DVGW-Registration Nos. DV-7501AU2256 and DV-7501AU2257

Výrobca:

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**WUN-V2A 90°****TRANSITION ELBOWS 90° HD-PE/STAINLESS STEEL WITH  
MALE THREAD****Areas of Application**

FRIALEN-Transition Elbows WUN-V2A 90° are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler. The threaded joint is made of stainless steel (Material St. 1.4305 / X8CrNiS18-9).

**Assembly Instructions**

During assembly, only a spanner applied to the provided metal hexagon must be used to screw the component into its metal counterpart. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the stainless steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

**Good reasons for using the FRIALEN-Transition Elbows WUN-V2A 90°:**

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Stainless steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the underground fitting (Traceability-Coding)
- Threaded joint made of stainless steel (St. 1.4305) = resistant to corrosion
- Suitable for usage in high humidity environment or in industrial area

**Výrobca:**

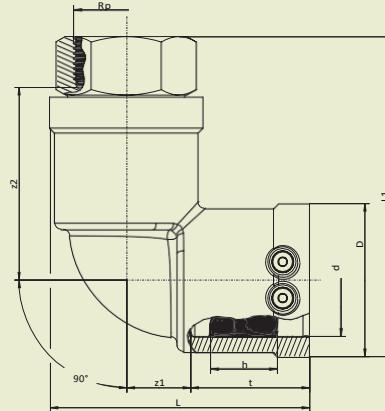
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## WUSTM 90° prechodové koleno PE ocel 90°, vnútorný závit

### WUSTM 90 TRANSITION ELBOWS 90° HD-PE/STEEL WITH FEMALE THREAD



PE 100 SDR 11

Maximum working pressure 5 bar (gas)



d	Rp	Order Ref.	Stock-status	BX	PU	D	L	L <sub>t</sub>	t	z <sub>1</sub>	z <sub>2</sub>	h	B	Weight kg/each
32	1"	612610	1	20	1000	47	85	111	42	21	49	24	61	0.368
40	1"	612611	2	15	600	58	102	130	46	27	55	30	70	0.650
40	1 1/4"	612612	1	15	750	58	102	130	46	27	53	30	70	0.540
50	1 1/2"	612614	1	10	500	70	118	146	53	30	60	30	80	0.710
63	2"	612616	1	10	320	84	128	161	53	33	61	35	94	1.115

Other thread sizes on request

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

#### Výrobca:

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## FRIALEN® SAFETY FITTINGS

### WUSTM 90 ° TRANSITION ELBOWS 90° HD-PE/STEEL WITH FEMALE THREAD

#### Areas of Application

FRIALEN-Transition Elbows WUSTM 90° are threaded joints as an adaptor from a metal pipe with external thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HD-PE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Elbows WUSTM 90°:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

**Výrobca:**

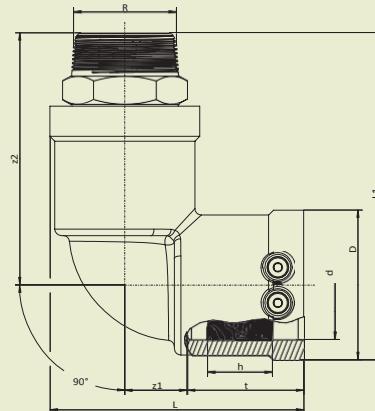
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**WUSTN 90° prechodové koleno PE ocel' 90°, vonkajší závit**

**WUSTN 90° TRANSITION ELBOWS 90° HD-PE/STEEL WITH MALE THREAD**



**PE 100 SDR 11**

**Maximum working pressure 5 bar (gas)**



d	R	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	t	z <sub>1</sub>	z <sub>2</sub>	h	Weight kg/each
40	1 1/4"	612602	1	15	750	58	102	144	46	27	111	30	0.560
50	1 1/2"	612604	1	10	500	70	118	160	53	30	121	30	0.770
63	2"	612606	1	10	320	84	128	176	53	33	130	35	1.130

**Other thread sizes on request**

FRIALEN safety fittings can be fused to pipes SDR11 - SDR 17.6. Minimum wall thickness s min ≥ 3 mm. Other SDR-stages on request. Please observe the marking directly at the product, which is mandatory. DVGW-Registration No. DV-7501AU2256

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## FRIALEN® SAFETY FITTINGS

### WUSTN 90° TRANSITION ELBOWS 90° HD-PE/STEEL WITH MALE THREAD

#### Areas of Application

FRIALEN-Transition Elbows WUSTN 90° are threaded joints as an adaptor from a metal pipe with internal thread to a HD-PE pipe. Joint on the part of HD-PE by FRIALEN-Coupler.

#### Assembly Instructions

The threaded component must be held with a spanner to prevent it twisting in the HDPE component. The fusion of the HD-PE side takes place by FRIALEN-fusing – leakproof and longitudinally strong.

The installation of the steel and the HD-PE side has to be prepared according to the general installation instructions (see "Transition Fittings with threaded connection" in "Assembly Instructions" for "FRIALEN-Safety Fittings for house connections and distribution pipes up to d 225"). This involves removing the oxide skin and cleaning the pipe ends.

#### Good reasons for using the FRIALEN-Transition Elbows WUSTN 90°:

- Compact construction
- HD-PE side with exposed heating element for optimal heat transfer
- Cold zones at the end to prevent the flow of molten material
- No holding clamps required
- Large insertion depth, extra wide fusion zones
- Steel end permanently anchored in the HD-PE and will not distort
- Self sealing patented sealing geometry without elastomer seal
- Additional barcode for tracing back the fitting (Traceability-Coding)

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