

Product Catalogue 2025



Infrastructure

Valid from 01.03.2025



SAFETY FITTINGS

In a rapidly changing world, we offer you security and cost-effectiveness for your networks.

Our connection technology for piping systems is the heart of every supply and disposal system – whatever connection you need, we have the right solution for you.

Gas

We are recognised as one of the world's leading providers of highly developed plastic piping systems with approvals around the globe. We provide you with extremely secure components for gas supply networks to operate them particularly economical. You also benefit from extensive customer service and training. Our comprehensive product selection for outstanding results is reliable, robust and safe.

Water

Potable water networks around the globe have to function perfectly. While „perfectly“ means to us: durable, robust and hygienically safe. We ensure that you can operate the safest water supply network and save time and money. Thanks to high-quality materials, our products have excellent corrosion protection. Therefore avoiding any potential hygiene problems. Our product portfolio includes electrofusion joints, mechanical connectors, repair solutions and tools.

Waste Water

Sewage systems around the globe must cope with billions of cubic meters of wastewater from households, industry and commercial businesses every day as well as surface water. Often these sewage systems are not tight and waste water is lost into the ground. As a pioneer in polyethylene sewer systems, we develop and distribute homogeneously fused pipe connections, domestic service connections, and chamber joints, all avoiding leakage loss and groundwater pollution. A sustainable solution through reliable fusion results and long service life.

Tool service by manufacturer

We are offering a comprehensive range of tools, services and digital solutions. Our advanced electrofusion units, mechanical tools and equipment are suited for your construction site requirements.

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Practice oriented and safe training seminars

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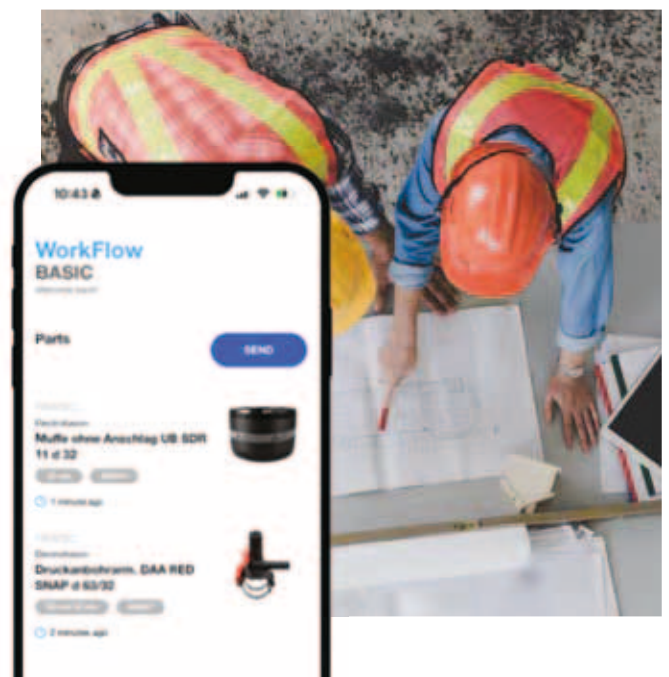
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WorkFlow Basic – Start to digitise your fusion today!

We're delighted to introduce WorkFlow Basic. As we phase out the FRIAMAT app, we recognise change can be tough, but we're committed to a smooth transition. WorkFlow Basic is your single solution for digital document access, replacing the outdated FRIAMAT app with the same functionalities you've come to rely on. WorkFlow is available in a free version, WorkFlow Basic, and a Pro version, subject to your country's availability. If you're still using the FRIAMAT app, switch to WorkFlow, as it won't be updated anymore. Welcome to an exciting new chapter with WorkFlow Basic!

WorkFlow Basic in a nutshell

-  **Easy in-app registration** – name, mail address, country and password
-  **Start immediately** – pair your FRIAMAT and start your fusion process
-  **Send protocols via mail** – protocols as .pdf and .csv
-  **Tracking of all work steps** – step by step and down to the last detail
-  **Secure data transmission** – via encryption using SSL protocol
-  **Advanced fusion documentation** – add pictures and geo localization (to your documentation)



How to register for WorkFlow Basic



Download
the app
now!





WorkFlow Sketch - House Connection Sketch per Click

We are constantly working on the development of our products and services. With the WorkFlow sketch module we have launched the most requested function for WorkFlow Pro: The digital house connection sketch or measurement sketch. So far, all components could be documented, automatic fusion records were created, data could be easily recorded and shared - everything without paperwork. The only thing you still needed a pen and paper for was the house connection sketch. From now on, that's a thing of the past. Discover what makes your work even easier. Discover WorkFlow Pro.

For further information, please visit our
Homepage*:

www.aliaxis.de/en/workflow



Your contact

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* Check out if WorkFlow is available in your country and contact us.

WorkFlow Pro works – and this is how:

Everything in sight. Everything under control.

A separate report for each fusion process in the pipeline network with its own fusion protocol, adding, printing and distributing documents, photos and geodata, information on components and map views individually – and all this on endless sheets of paper. Not anymore! Because the smart digital solution manages it for you.



Fuse

Scrape, clean, install the component, scan the barcode, fuse – so far the same. With WorkFlow Mobile support, important information is added to the fusion protocol during the fusion process, e.g. GPS data to record the component's location, or photos to document its proper installation.



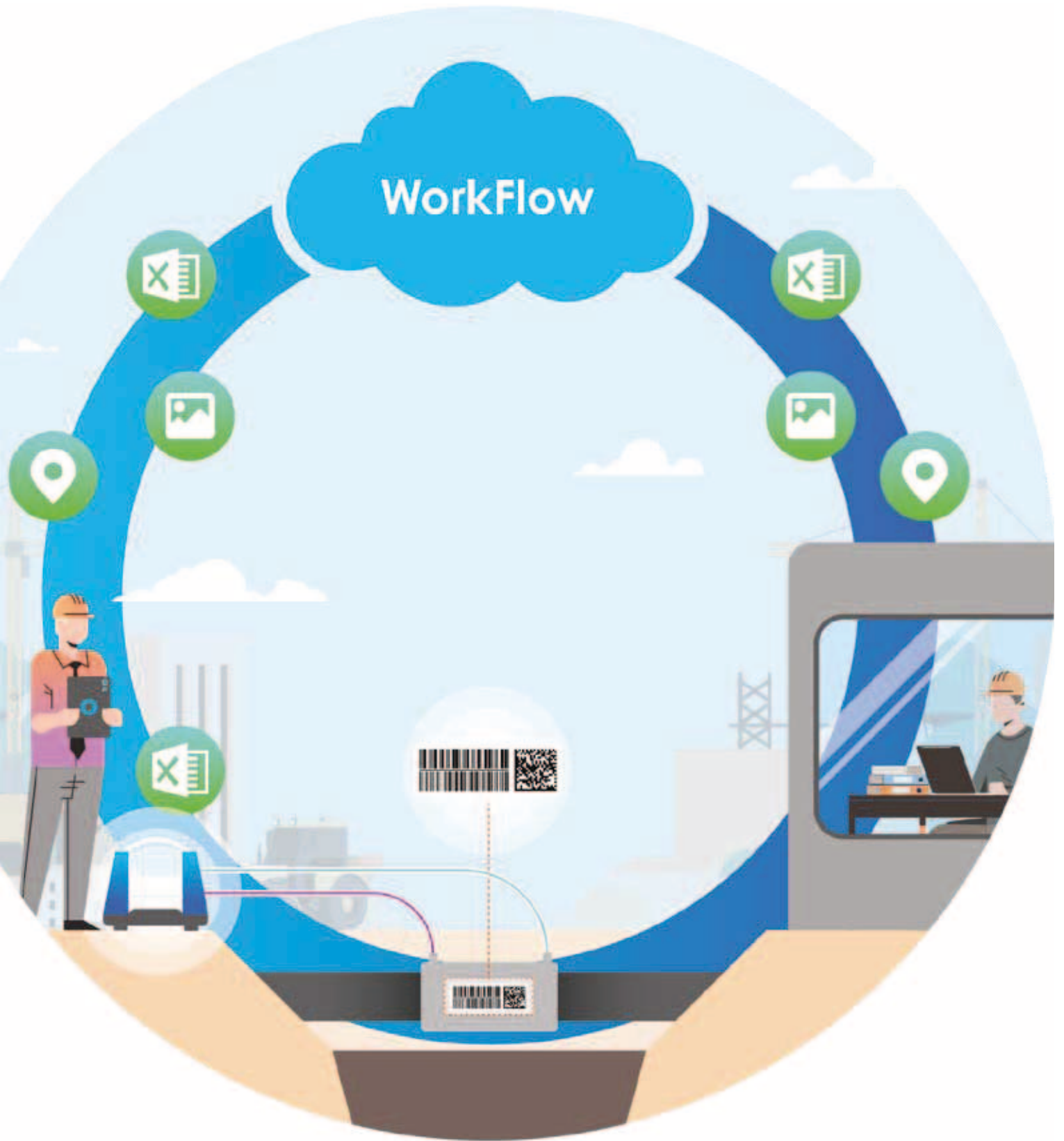
Synchronise

Paperless, in real time, with secure encryption: WorkFlow Mobile transfers all data to the WorkFlow cloud, where the data is immediately sorted, processed and stored. The corresponding protocols can be accessed anytime and anywhere by anyone who is authorised to do so – and by no-one else.



Manage

All protocols, images, components and many other pieces of information such as the construction site where each component was installed, or which fusion unit was used – all of this can also be accessed centrally from a desk on the construction site or in the office, via WorkFlow Web. Complete records for each construction site in a separate project.



For further information, please visit our Homepage*:

www.aliaxis.de/en/workflow



Your contact

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* Check out if WorkFlow is available in your country and contact us.

Product range amendments at a glance

FRIALEN safety fittings

UB SDR 11	Coupler without inner stop, SDR 11			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 315	612670	Q2 / 2025	617280
Omitted	d 355	615074	Q4 / 2025	617281
New	d 315	617280	Q2 / 2025	612670
New	d 355	617281	Q4 / 2025	615074

TA	T-piece with spigot			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 200/200	617179	Q4 / 2025	-

TA RED	T-piece with reduced spigot			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 200/90	617176	Q2 / 2025	-
New	d 200/110	617177	Q2 / 2025	-
New	d 200/160	617178	Q2 / 2025	-
New	d 225/90	617180	Q2 / 2025	-
New	d 225/110	617181	Q2 / 2025	-
New	d 225/160	617182	Q2 / 2025	-

FBS	Actuating linkage for FRIALOC PE shut-off valves			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Discontinued part	RD 0,75 - 1,0 Edelstahl	616315		616308
Discontinued part	RD 0,9 - 1,3 Edelstahl	616316		616309
Discontinued part	RD 1,2 - 1,8 Edelstahl	616317		616310
Discontinued part	RD 1,5 - 2,3 Edelstahl	616319		616318

UAN	Universal adaptor HD-PE/brass with male thread and PE pipe socket			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 40 x R 1	616160	Q3 / 2024	-

SA UNI	Saddle with outlet spigot Universal SDR 11			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 315-355 / 225	617224	Q3 / 2024	-
New	d 315-355 / 250	617225	Q3 / 2024	-
New	d 400-450 / 225	617226	Q4 / 2024	-
New	d 400-450 / 250	617227	Q4 / 2024	-
New	d 500-630 / 225	617228	Q4 / 2024	-
New	d 500-630 / 250	617229	Q4 / 2024	-
New	d 710-900 / 225	617230	Q4 / 2024	-
New	d 710-900 / 250	617231	Q4 / 2024	-
New	d 1000-1200 / 225	617232	Q4 / 2024	-
New	d 1000-1200 / 250	617233	Q4 / 2024	-

FRIALEN safety fittings

SA VL	Vacuum-loading spigot saddle, SDR 11			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 400 / d 225	616469	Q4 / 2024	617226
Omitted	d 400 / d 250	616779	Q4 / 2024	617227
Omitted	d 450 / d 225	616780	Q4 / 2024	617226
Omitted	d 450 / d 250	616781	Q4 / 2024	617227
Omitted	d 500 / d 225	616391	Q4 / 2024	617228
Omitted	d 500 / d 250	616782	Q4 / 2024	617229
Omitted	d 500 / d 280	616783	immediately	-
Omitted	d 500 / d 315	616784	immediately	-
Omitted	d 560 / d 225	616392	Q4 / 2024	617228
Omitted	d 560 / d 250	616785	Q4 / 2024	617229
Omitted	d 560 / d 280	616786	immediately	-
Omitted	d 560 / d 315	616787	immediately	-
Omitted	d 560 / d 355	616788	immediately	-
Omitted	d 560 / d 400	616789	immediately	-
Omitted	d 630 / d 225	616393	Q4 / 2024	617228
Omitted	d 630 / d 250	616790	Q4 / 2024	617229
Omitted	d 630 / d 280	616791	immediately	-
Omitted	d 630 / d 315	616792	immediately	-
Omitted	d 630 / d 355	616793	immediately	-
Omitted	d 630 / d 400	616794	immediately	-
Omitted	d 710 / d 225	616394	Q4 / 2024	617230
Omitted	d 710 / d 250	616795	Q4 / 2024	617231
Omitted	d 710 / d 280	616796	immediately	-
Omitted	d 710 / d 315	616797	immediately	-
Omitted	d 710 / d 355	616798	immediately	-
Omitted	d 710 / d 400	616762	immediately	-
Omitted	d 800 / d 225	616395	Q4 / 2024	617230
Omitted	d 800 / d 250	616799	Q4 / 2024	617231
Omitted	d 800 / d 280	616800	immediately	-
Omitted	d 800 / d 315	616801	immediately	-
Omitted	d 800 / d 355	616802	immediately	-
Omitted	d 800 / d 400	616803	immediately	-
Omitted	d 900 / d 225	616396	Q4 / 2024	617230
Omitted	d 900 / d 250	616804	Q4 / 2024	617231
Omitted	d 900 / d 280	616805	immediately	-
Omitted	d 900 / d 315	616806	immediately	-
Omitted	d 900 / d 355	616807	immediately	-
Omitted	d 900 / d 400	616808	immediately	-
Omitted	d 1000 / d 225	616397	Q4 / 2024	617232
Omitted	d 1000 / d 250	616809	Q4 / 2024	617233
Omitted	d 1000 / d 280	616810	immediately	-
Omitted	d 1000 / d 315	616811	immediately	-
Omitted	d 1000 / d 355	616812	immediately	-
Omitted	d 1000 / d 400	616813	immediately	-
Omitted	d 1200 / d 225	616384	Q4 / 2024	617232
Omitted	d 1200 / d 250	616814	Q4 / 2024	617233
Omitted	d 1200 / d 280	616815	immediately	-
Omitted	d 1200 / d 315	616816	immediately	-
Omitted	d 1200 / d 355	616817	immediately	-
Omitted	d 1200 / d 400	616818	immediately	-
Omitted	d 1000 / d 160 / SDR 17	616378	Q4 / 2024	617232 + 616356
Omitted	d 1200 / d 160 / SDR 17	616383	Q4 / 2024	617232 + 616356



Product range amendments at a glance

FRIALEN safety fittings

KBS	Actuating linkage KBS for ball valves with adapter hexagon socket			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 20-50 RD 0,45-0,7 SW 30	615741		617586
Omitted	d 20-50 RD 0,6-1,0 SW 14	615957		617587
Omitted	d 20-50 RD 0,6-1,0 SW 30	615328		617587
Omitted	d 20-50 RD 1,0-1,5 SW 14	616466		617588
Omitted	d 20-50 RD 1,0-1,5 SW 30	615330		617588
Omitted	d 20-50 RD 1,2-2,0 SW 14	616068		617589
Omitted	d 20-50 RD 1,2-2,0 SW 30	615329		617589
Omitted	d 50-225 RD 0,7-1,0 SW 14	615958		617590
Omitted	d 50-225 RD 0,7-1,0 SW 30	615310		617590
Omitted	d 50-225 RD 1,0-1,5 SW 14	616467		617591
Omitted	d 50-225 RD 1,0-1,5 SW 30	615331		617591
Omitted	d 50-225 RD 1,2-2,0 SW 14	616069		617592
Omitted	d 50-225 RD 1,2-2,0 SW 30	615311		617592
New	d 20-50 / RD 0,62-0,79 / SW 30 + 14	617586		615741
New	d 20-50 / RD 0,77-1,09 / SW 30 + 14	617587		615957 + 615328
New	d 20-50 / RD 1,02-1,59 / SW 30 + 14	617588		616466 + 615330
New	d 20-50 / RD 1,27-2,09 / SW 30 + 14	617589		616068 + 615329
New	d 50-225 / RD 0,75-1,05 / SW 30 + 14	617590		615958 + 615310
New	d 50-225 / RD 1,00-1,56 / SW 30 + 14	617591		616467 + 615331
New	d 50-225 / RD 0,75-1,07 / SW 30 + 14	617592		616069 + 615311

FRIAFIT Sewage System

ASA VL 160	Vacuum-loading sewage saddle			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 315/d 160	682615	immediately	682649
New	d 315/d 160	682649	immediately	682615

ABS 15 - 90	Sewage bend (spigot fitting)			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 110 / 15°	681004	immediately	-
Omitted	d 125 / 15°	681005	immediately	-
Omitted	d 180 / 15°	681007	immediately	-
Omitted	d 110 / 30°	681009	immediately	191233517
Omitted	d 125 / 30°	681010	immediately	191833517
Omitted	d 180 / 30°	681002	immediately	191133517
Omitted	d 110 / 45°	681011	immediately	191148517
Omitted	d 125 / 45°	681012	immediately	191248517
Omitted	d 180 / 45°	681202	immediately	191848517
Omitted	d 180 / 90°	681602	immediately	191893517

FRIAFIT Sewage System

ATS 45	Equal branch 45° (spigot fitting)			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 110	682001	immediately	-
Omitted	d 125	681013	immediately	-
Omitted	d 180	682003	immediately	-

ATSR 45	Unequal branch 45° (spigot fitting)			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 160 / d 110	682201	immediately	-

FRIATOOLS Technical Equipment

	FRIATOOLS Fusion units with reader wand			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	FRIAMAT 7 prime with reader wand	613134	Q4 / 2024	-
Omitted	FRIAMAT prime eco with reader wand	613124	Q4 / 2024	-
Omitted	FRIAMAT 7 basic with reader wand	613130	Q4 / 2024	-
Omitted	FRIAMAT basic eco with reader wand	613120	Q4 / 2024	-

FRIAMAT 8 Mini	Fusion unit with documentation function			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	FRIAMAT 8 Mini	614140	Q2 / 2025	-
New	1D/2D- Bluetooth-Scanner	624007	Q2 / 2025	-
New	Special case	627002	Q2 / 2025	-

FRIATRACE	FRIATRACE database software			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	FRIATRACE database software	613280	immediately	-
Omitted	FRIATRACE combination package	624026	immediately	-

FWSK 1200	Scraper chain for pipe ends and saddle surfaces d 800 - d 1200			
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	FWSK 1200 for d 800 - 1200	613386	immediately	-



Product range amendments at a glance

FRIATOOLS Technical Equipment

UNITOP Clamping unit for spigot saddles SA UNI / ASA UNI				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	UNITOP 250 clamping device from d 315 - d 1200 with outlet d 225/d 250	613387	immediately	-

FWAB Drilling equipment				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	FWAB ASA 160/450 for FRIAFIT ASA VL 160 suitable for pipes up to d 450, SDR 17	613846	immediately	-
Omitted	FWAB 280 for FRIALEN SA VL for d 280	613850	immediately	Rental device
Omitted	FWAB 315 for FRIALEN SA VL for d 315	613851	immediately	Rental device
Omitted	FWAB 355 for FRIALEN SA VL for d 355	613852	immediately	Rental device
Omitted	FWAB 400 for FRIALEN SA VL for d 400	613836	immediately	Rental device
Omitted	FWAB 160 for FRIAFIT ASA UNI for d 160	613838	immediately	Rental device

FRIACORE Connection and repair technology

FSC FRIASAFE Pipe Connector				
Status	Version	Order No.	Available from/up to	
New	d 40-64 / BL 200 / EPDM	772101		
New	d 46-72 / BL 200 / EPDM	772102		
New	d 63-90 / BL 200 / EPDM	772103		
New	d 78-105 / BL 200 / EPDM	772105		
New	d 104-132 / BL 240 / EPDM	772107		
New	d 130-161 / BL 240 / EPDM	772109		
New	d 158-192 / BL 240 / EPDM	772111		
New	d 218-256 / BL 240 / EPDM	772115		

FSC TS FRIASAFE Hook Spanner				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	DN 40 - 80	770810		-
New	DN 100 - 200	770812		-

FSC WK FRIASAFE Tool Kit				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	DN 40-200	770800		-

FRIACORE Connection and repair technology

UGFA UltraGrip Amplified Flange Adaptor				
Status	Version	Order No.	Available from/up to	
New	DN 700 / d 700 - 735 / Flange DN 600 / EPDM / PN 16	VJ35160		
New	DN 700 / d 700 - 735 / Flange DN 700 / EPDM / PN 16	VJ35161		
New	DN 700 / d 727 - 762 / Flange DN 700 / EPDM / PN 16	VJ35162		
New	DN 700 / d 750 - 785 / Flange DN 700 / EPDM / PN 16	VJ35163		
New	DN 800 / d 789 - 824 / Flange DN 700 / EPDM / PN 16	VJ35164		
New	DN 800 / d 789 - 824 / Flange DN 800 / EPDM / PN 16	VJ35166		
New	DN 800 / d 825 - 860 / Flange DN 800 / EPDM / PN 16	VJ35167		
New	DN 800 / d 853 - 888 / Flange DN 800 / EPDM / PN 16	VJ35168		
New	DN 800 / d 892 - 927 / Flange DN 800 / EPDM / PN 16	VJ35170		
New	DN 900 / d 892 - 927 / Flange DN 900 / EPDM / PN 16	VJ35171		
New	DN 700 / d 700 - 735 / Flange DN 600 / EPDM / PN 10	VJ35460		
New	DN 700 / d 700 - 735 / Flange DN 700 / EPDM / PN 10	VJ35461		
New	DN 700 / d 727 - 762 / Flange DN 700 / EPDM / PN 10	VJ35462		
New	DN 700 / d 750 - 785 / Flange DN 700 / EPDM / PN 10	VJ35463		
New	DN 800 / d 789 - 824 / Flange DN 700 / EPDM / PN 10	VJ35464		
New	DN 800 / d 789 - 824 / Flange DN 800 / EPDM / PN 10	VJ35466		
New	DN 800 / d 825 - 860 / Flange DN 800 / EPDM / PN 10	VJ35467		
New	DN 800 / d 853 - 888 / Flange DN 800 / EPDM / PN 10	VJ35468		
New	DN 800 / d 892 - 927 / Flange DN 800 / EPDM / PN 10	VJ35470		
New	DN 900 / d 892 - 927 / Flange DN 900 / EPDM / PN 10	VJ35471		

UGK UltraGrip Amplified Coupling

Status	Version	Order No.	Available from/up to
New	DN 700 / d 700-735 / EPDM	VJ35060	
New	DN 700 / d 727-762 / EPDM	VJ35061	
New	DN 700 / d 750-785 / EPDM	VJ35062	
New	DN 800 / d 789-824 / EPDM	VJ35063	
New	DN 800 / d 825-860 / EPDM	VJ35064	
New	DN 800 / d 853-888 / EPDM	VJ35065	

UGR UltraGrip Amplified Reducer Coupling

Status	Version	Order No.	Available from/up to
New	d1 700-735 / d2 727-762	VJ35260	
New	d1 700-735 / d2 750-785	VJ35261	
New	d1 727-762 / d2 750-785	VJ35262	
New	d1 700-735 / d2 789-824	VJ35264	
New	d1 727-762 / d2 789-824	VJ35265	
New	d1 789-824 / d2 825-860	VJ35267	
New	d1 789-824 / d2 853-888	VJ35267	
New	d1 825-860 / d2 853-888	VJ35268	



Important information regarding safe pipe joints with Aliaxis Deutschland

Stocked status

Please note during your planning and scheduling:

- Items with a stocked status of **MTS** are usually available from stock.
- Items with a stocked status **MTO** are manufactured to order. Delivery time on request. These articles are excluded from return and exchange.

Packaging units and pallet units

The product catalogue show packaging units (BX) and pallet units (PU). Ordering in complete packages/pallets simplifies the process of receiving your goods and your storage. In addition, it promotes fast commissioning and therefore delivery by us. Product range clearly indicates that we have chosen reasonable and fair units for you.

Returns

The total value of the accepted return / item must be at least € 125,00.

Returned goods for credit must be approved by us in advance. Please register your return request with us. After successful verification, we will send you a return receipt with a unique number. Processing is not possible without this number. In the context of our quality management, the goods must also fulfil certain criteria. If necessary, we will be pleased to inform you about this separately. If the goods fulfil the criteria and the return is approved, then a credit note will be issued with a deduction of 30% for testing costs.

Inspection test certificates

For inspection test certificates according to DIN EN 10 204 - 3.1 we charge a fee of € 25.00 per order item. You can order an inspection test certificates when placing an order.

In order to avoid unnecessary handling, we can also provide the certificate for FRIALEN articles. This requires only the specification of the component traceability batch, which you will find on the barcode label or in the delivery documents.

Product range

This product catalogue is available in the download area www.aliaxis.de/en

Data privacy

Responsible handling of your personal data is extremely important to us. We have therefore adapted our privacy policy to the new legal situation. You can find our information on data privacy on our website.

Brand name

For ease of reading, this product range does not include the marking by ® and ™. The following trademarks are registered: FRIALEN®, RED SNAP®, FRIAFIT®, FRIALOC®, FRIAGRIP®, FRIATOOLS®, FRIAMAT®, PHILMAC®, MAGNUM 3G®, Sentry GS®, UltraGrip®, BAIO®, Rilsan® and Gas-Stop™.

Date of printing/technical progress

All details correspond to the current state at the time of printing. We reserve the right to make amendments which are intended for technical progress. We assume no liability for printing errors.

All dimensions and designs stated correspond to the production status of Aliaxis Deutschland valid at the time of printing.

Moulded part illustrations and drawings do not necessarily correspond to the actual moulded part designs in all dimensions. No guaranteed properties can be derived from the data listed. Dimensions and weights are theoretical values and are subject to the usual manufacturing tolerances.

If you have any technical questions, please contact our Technical Sales Department.

Certifications of our management systems

In addition to the certification of the quality management system according to DIN EN ISO 9001:2015, Aliaxis Deutschland GmbH has also received the certifications for the energy management system according to DIN EN ISO 50001:2011 and the environmental management system according to DIN EN ISO 14001:2015. In this way, we underline our aspirations for sustainable development, production and use of our products.

You can find valid certificates in the download area on our homepage.

Quality

FRIALEN safety fittings, FRIALEN large pipe technology, the FRIAFIT sewage system and our FRIATOOLS Technical Equipment are subjected to ongoing quality controls with strict testing regulations, which are part of our comprehensive, certified quality management system according to DIN EN ISO 9001: 2015.

FRIALEN safety fittings, FRIALEN large pipe technology, the FRIAFIT sewage system and our FRIATOOLS technical equipment are fully coordinated. All amendments, alterations and extensions which occur in the course of technical development are taken into account accordingly. Our ongoing quality controls cover the FRIALEN safety fittings, the FRIALEN large pipe technology, the FRIAFIT sewage system, our FRIATOOLS technical equipment and the quality of the fused joints as a result of the interaction of these components. The operation and functional safety of devices from other manufacturers (external devices) are not subjected to our specifications and controls. Please follow our assembly instructions and the respective device operating instructions when laying the system.

Technical details

The technical details in this product range are not complete. Detailed information can be found in our data sheets, which are available in the download area of the product ranges.

Processing instructions and additional information

The processing takes place according to our assembly instructions, which are available for download on the Internet at www.aliaxis.de. Technical information regarding processing or use can be enclosed with the product and must be observed.

You can also find further information about the products and their processing, approvals, publications as well as seminar dates and contact persons via the site navigation.



List of abbreviations

Abbreviation	Explanation
ABS	Acrylonitrile-Butadiene-Styrene
Art. No.	Article Number
BX	Sales Unit
CR	Chlorobutadiene rubber
CT	Cooling time
de	Pipe outside diameter
DIN	German Institute for Standardisation
DN	Nominal outside diameter
DN/OD	Nominal diameter relative to outside diameter
DVGW	Deutscher Verein des Gas- und Wasserfaches e. V.
DVS	Deutscher Verband für Schweißen und verwandte Verfahren (German Welding Society)
e	Wall thickness
EN	European standard
EPDM	Ethylene-propylene rubber
FKM	Fluororubber
GFK	Glass fibre reinforced plastic
HM	Electrofusion control units
HS	Butt-fusion
LS	Stock status
ME	Unit of measure
MOP	Maximum Operating Pressure (Gas)
MOQ	Minimum order quantity
MTO	make to order
MTS	make to stock
NBR	Nitrile butadiene rubber
OP	Operating Pressure
Order No.	Order Number
PA	Polyamide
PE	Polyethylene
PFA	Permissible component working pressure (water)
PU	Pallet unit
POM	Polyoxymethylene
PP-B	Polypropylene block copolymer
PP-H	Polypropylene homopolymer
PP-R	Polypropylene random copolymer
PTFE	Polytetrafluorethylene
PVC-C	Polyvinyl chloride, post-chlorinated
PVC-U	Polyvinyl chloride, unplasticized
PVDF	Polyvinylidene fluoride
RD	Pipe cover
RG	Discount group
RQ	On request
SBR	Styrene-butadiene rubber
SDR	Standard Dimension Ratio (diameter-wall thickness ratio)
SF	Safety factor

Abbreviation	Explanation
STZ	Clay
WS / SW	Wrench size
Z99, ZZ	Price on request



1. Scope

- 1.1 All deliveries and services are subject to our delivery and payment terms as follows. Other conditions do not form part of the contract, even when we do not object to them explicitly.
- 1.2 Our delivery terms apply to those persons only who act in their commercial or independent professional capacity on conclusion of the contract (contractors as defined under § 310, Para. 1 of the German civil code BGB), to public law entities, and to separate public estates.
- 1.3 All services are subject to our separate terms and conditions for customer, maintenance, and repair services.
- 1.4 All hiring services are subject to our separate general terms and conditions for the hire of fusion, scraper, and accessory equipment.

2. Conclusion of contract

- 2.1 Our offers are nonbinding and subject to change provided that they have not been marked explicitly as binding or contain a specific acceptance period.
- 2.2 Verification of the contents and scope of a contract requires our order confirmation issued in writing.
- 2.3 Custom makes and prefabricated piping elements are designed and manufactured according to the technical documentation, drawings, and other details submitted by the ordering party. If, at the ordering party's request, design and manufacturing documents of this kind are drawn up by us or our technical personnel, these are submitted for approval to the ordering party before start of production. Acceptance is deemed as having been made when the ordering party fails to accept the contracted work within a period set by us of seven days following receipt of the design and manufacturing documents and when we have referred the ordering party at the commencement of this period to the foreseeable consequences of this failure. We accept changes to the completed custom makes and prefabricated piping elements only when the ordering party has declared explicitly and in writing its willingness to assume the additional costs involved. This does not affect the rights of the ordering party on the grounds of services not provided in accordance with the contract.
- 2.4 The design and manufacturing documents, the images, the cost estimates, the drawings, the calculations, the files, and all other material, details, and information we provide must be treated confidentially. Their ownership and copyrights remain our property. Without our prior consent, they may not be used for any purpose other than those agreed. Their communication or access to third parties requires our explicit consent.
- 2.5 The technical content of the ordered goods may be changed provided that this does not induce a fundamental change in their functionality, or unless the ordering party verifies unacceptability.
- 2.6 We accept warranties for the durability and/or consistency of the ordered goods and/or the goods we manufacture at the ordering party's request only when these warranties have been confirmed explicitly in our order confirmation or our advertisements.

3. Delivery

- 3.1 Delivery dates and periods can be observed only when we ourselves are supplied in due order and when the ordering party fulfils duly its obligations. If these obligations are not fulfilled duly or the ordering party wishes subsequent changes, the delivery periods are extended appropriately.
- 3.2 The delivery period commences on the date of our order confirmation issued in writing. It is deemed fulfilled when on its expiry the goods have left the works or their readiness for shipping has been declared.
- 3.3 The delivery period is also extended appropriately when their nonobservance can be put down to force majeure or to any other events unforeseeable at the conclusion of contract and outside of our responsibility, including disruption to production of any nature; difficulties in material and energy acquisition; transport delays; industrial action; legitimate lockouts; shortage of labour, power, or raw materials; difficulties in the acquisition of requisite licences; deliveries not duly provided by suppliers, etc.
- 3.4 If the ordering party defaults on acceptance and violates culpably other obligations to cooperate, we are entitled to demand recompense for any damage incurred, including any additional expenditure. We also have the right to exact claims beyond this.

4. Prices, payment terms, and shipping

- 4.1 Our prices are for shipping ex works or ex stores, not including the statutory value added tax. The costs for insurance, packaging, shipping, and custom duties are invoiced separately to the ordering party, provided that we have not agreed explicitly otherwise in our price list valid at the time.
- 4.2 If not agreed otherwise in writing, our invoices are payable immediately on receipt without deductions. The statutory rules apply in the event of default.
- 4.3 We reserve the right to change our prices accordingly when, following conclusion of contract, costs rise or fall, specifically as a result of collective bargaining agreements or changes in the prices of materials. Verification

of such we submit to the ordering party on demand. If a new price list comes into force during contracts with an agreed life exceeding four months between conclusion and delivery, we are entitled to invoice the prices valid on the day of delivery.

- 4.4 If partial deliveries have been agreed or are acceptable to the ordering party, we are entitled to issue a separate invoice for each and every partial delivery, which must be paid in accordance with the above conditions.
- 4.5 On the ordering party's failure to fulfil the payment terms or under circumstances casting doubt on the ordering party's creditworthiness, we are entitled to demand immediate payment for all services. In this event, all discount agreements, discounts, price reductions, etc., are deemed void. In addition, we are entitled to retain all pending deliveries, to ship them only against advance payment or security, to withdraw from the contract, and to demand compensation. We are further entitled to prohibit the further sale of goods delivered under our rights of ownership and to retrieve immediately the goods at the ordering party's expense once we have withdrawn from the contract.
- 4.6 Containers, wire mesh pallets, EUR-pallets, support rings, and similar remain our property if not agreed otherwise. The named objects must be returned carriage free and in faultfree condition to the place of performance within one month of receipt. Otherwise we are entitled to invoice the ordering party for the replacement.

5. Transfer of risk, final acceptance

- 5.1 The risk is transferred to the ordering party when the delivery is ready to ship and this has been declared, or on final acceptance. This applies also when shipping or acceptance is delayed under circumstances outside of our responsibility. If readiness for shipping is not declared, the risk is transferred to the ordering party when the goods are passed to the carrier, but no later than the date the goods leave the works or stores. This also applies when our own means of transport are used and for carriage paid deliveries.
- 5.2 If final acceptance has been agreed, this must be performed immediately by its set end date, preferably after the readiness for final inspection has been declared. The ordering party may not refuse final acceptance in the event of a nonessential deficiency.

6. Notice of defects, warranty claims, limitations

- 6.1 On receiving the delivered goods, the ordering party must inspect them immediately and carefully for deficiencies. The ordering party must submit notices of defects immediately, but no later than fourteen days, after receipt of the goods. The same period applies to concealed deficiencies, commencing on the date of their discovery. Deficiencies not reported in the due time are not approved.
- 6.2 Justified complaints are remedied with subsequent services or replacements, as we see fit. If we fail to remedy the deficiency within an appropriate period or after two attempts at the most, or if we deliver a replacement, the ordering party has the right to withdraw from the contract or to demand a reduction in the purchase price. Withdrawal is excluded when our violation of an obligation is minor only.
- 6.3 The limitation for warranty claims is:
 - a) five years on delivered construction materials that have been installed and have caused the defectiveness of a structure;
 - b) one year on other, new goods delivered to contractors;
 - c) two years in all other cases.
 - d) Liability for defects is excluded for used goods delivered to contractors.
 - e) The periods under b) and d) do not apply to the ordering party's damage compensation claims on the grounds of risks to life, body, or health or of wilful or grossly negligent violations to obligations by us, our legal representatives, or our vicarious agents. These claims expire by limitation under the law. If we are not charged with wilful violation of the contract, our liability for damage compensation is limited to the foreseeable, typical extent.
 - f) This does not affect any further special laws on limitations (specifically § 438 Para. 1 No. 1, Para. 3, §§ 444, 445 b BGB).
- 6.4 The limitation for warranty claims commences on the day the object is shipped or, if this is necessary, subjected to the final acceptance.
- 6.5 In the case of delivered replacements and remedies, the limitation does not commence afresh for the replaced or remedied goods, including goodwill cases. If, in exceptional cases, there is acknowledgement, this applies to those deficiencies only that formed part of the wish for repeat performance.
- 6.6 Warranty claims are ruled out in particular for deficiencies that are incurred after the transfer of risk as a result of unsuitable or improper use, incorrect installation, or incorrect maintenance by the ordering or third parties, improper operation, natural wear and tear, improper care, unsuitable resources, defective construction work, unsuitable building ground, or particular external effects that are unforeseen after conclusion of contract.



7. Reservation of ownership

- 7.1 All of our deliveries are effected under ownership rights. The goods remain our property until payment has been defrayed in full of all accounts receivable from the business relationship with the ordering party. In the case of a current account, the reserved ownership is deemed security for our outstanding receivables.
- 7.2 The ordering party is entitled to resell the delivered goods as part of its ordinary course of business. It may not, however, either pledge or assign as security the reserved goods.
- 7.3 When reselling, the ordering party cedes immediately to us all accounts receivable and all subsidiary rights engendered to it by the resale. This applies irrespectively of whether the ordering party sells the reserved goods unprocessed, worked, processed, or together with other objects. If the resale includes goods not belonging to us, the assignment is deemed the value of the reserved goods only. The value measured is based on our sales prices.
- 7.4 Reserved goods are always worked and processed for our benefit as the manufacturer as defined under § 950 BGB, but without obliging us. The processed goods are deemed reserved goods as defined under these terms. If reserved goods are processed or mixed inseparably with other objects not belonging to us, we acquire coownership of the new object in the ratio of the reserved goods' invoiced value to the invoiced value of the other used goods at the time of processing or mixing. The arising coownership rights are deemed reserved goods as defined under these terms. The ordering party is obliged on demand to refer the purchaser of the reserved goods to our ownership rights.
- 7.5 The ordering party is authorised to collect the account receivable from the resale, without detriment to our own collection authority. As long as the ordering party fulfils duly its payment obligations, we do not claim the account receivable. On demand the ordering party must inform us of the debtors for the assigned accounts receivable and to report the assignment to them. This does not affect our right to inform ourselves third party debtors of the assignment. The ordering party is not permitted to assign third party accounts receivable to third parties or to agree on nonassignability with the third party debtor.
- 7.6 The ordering party is obliged to inform us immediately and by the fastest means of a pledge or any other detriment to our security right by third parties. The ordering party is obliged to hand over to us all of the documentation needed to protect our rights and to reimburse to us the costs incurred by a requisite intervention.
- 7.7 We are obliged, as we see fit, to release securities to 10% in excess of the accounts payable in need of security.
- 7.8 In the event of the ordering party's violation of contract, in particular default of payment, we are entitled to withdraw from the contract and to retrieve the objects delivered under reserved ownership. Also, the ordering party is obliged to return them.
- 7.9 The ordering party is obliged to insure the goods to an adequate extent for the duration of our reserved ownership.

8. Force majeure – right to withdraw

When force majeure or other circumstances we cannot influence hinder us in the fulfilment of our delivery obligations, or when such reasons render this fulfilment unacceptable, we are entitled to withdraw from the contract. The ordering party is not entitled to compensation claims in this event. The right to withdraw may also be observed when the ordering party is first informed of an extension to the delivery period.

9. Liability for compensation of culpable damage

- 9.1 Our liability for damage compensation, irrespectively of the legal grounds, in particular from impossibility, delay, defective or incorrect delivery, violation of contract, breach of obligations during contract negotiations, and unpermitted activities, if caused by culpability in each and every case, is limited to the extent under 9.
- 9.2 We are liable to compensate for damages, irrespectively of the legal grounds, in the event of wilful culpability and gross negligence.
- 9.3 On condition of a smaller scope of liability, we are liable for slight negligence under the law (e.g. for due care in our own matters) only
- for damages as a result of harm to life, the body, or health and
 - for damages resulting from the not inconsiderable violation of an essential contractual obligation (an obligation whose fulfilment first makes at all possible the ordinary performance of the contract and on whose fulfilment the contracting partner relies or may rely regularly). In this case, however, our liability is restricted to the compensation for the predictable, typical damage.
- 9.4 The liability limitations under 9.3 also apply in the event of violations of obligations by or for the benefit of persons whose culpability lies within our responsibility under the law.
- 9.5 The limitations of and exemptions from liability under 9.3 do not apply when we fail deliberately to communicate a deficiency, when we have granted a warranty on the consistency of the object, or there are claims under the product liability laws.

- 9.6 The ordering party may only withdraw or terminate when we are responsible for violating an obligation not consisting in a deficiency. The ordering party has no free right to terminate (in particular as set down under §§ 651, 649 BGB). In all other cases, the legal prerequisites and consequences apply.

10. Data protection

We store the ordering party's data that may contain personal details for handling the contractual relationship – Art 6, Para. 1(1b) GDPR. When required for the fulfilment of the contract, we communicate these data to third parties (e.g. insurance houses). Further details on how we handle personal data can be viewed on our website.

11. Non assignability

If this is not agreed specifically otherwise with the ordering party, the ordering party is not entitled without our prior consent to transfer contractual rights to third parties.

12. Applicable laws, venue, place of performance

- 12.1 Exclusively German law applies, excluding the United Nations Convention on Contracts for the International Sale of Goods.
- 12.2 The sole venue for disputes between the contracted parties is Mannheim, when the ordering party is a merchant, a public law entity, or a separate public estate or does not have general jurisdiction in Germany. Notwithstanding, we reserve the right to take legal action against an ordering party that has no general jurisdiction in Germany also before other competent law courts, as we see fit.
- 12.3 The place of performance is our head office when this is not specified otherwise in the order confirmation.

Mannheim, December 2019

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FRIALEN Safety fittings

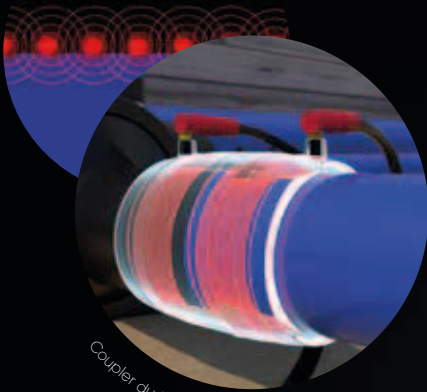
For sustainable pipes for gas, water networks and industrial systems made of PE.

FRIALEN

Safety Technology

Open wire design

Open wires during fusion process



Coupler during fusion process

Delivering the energy to where it is needed - for a **SUPERIOR FUSION RESULT.**

Optimum heat transfer



Immediate heat transfer within the contact area between the surfaces.



Energy-saving through effective energy utilisation.



Corrosion-resistant open wires.



FRIALEN DAV RED SNAP – for maximum efficiency and safety for your house connections

*Delivering the energy
where it is needed
- for a **SUPERIOR
FUSION RESULT.***



Nature inspired
design to minimise
cooling times

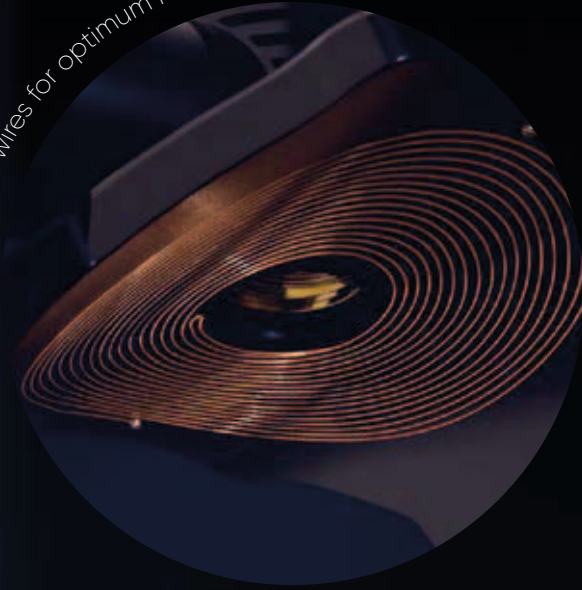


Fast clamping
lever RED SNAP
for easy and fast
installations

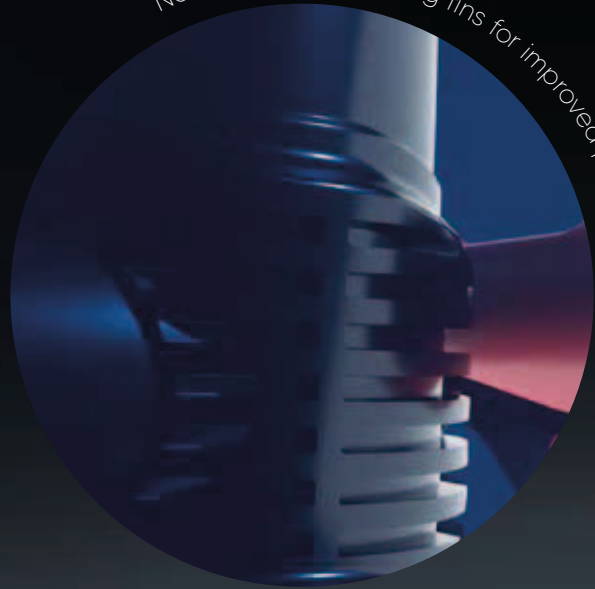


Open wire design
of corrosion
resistant heating
coils

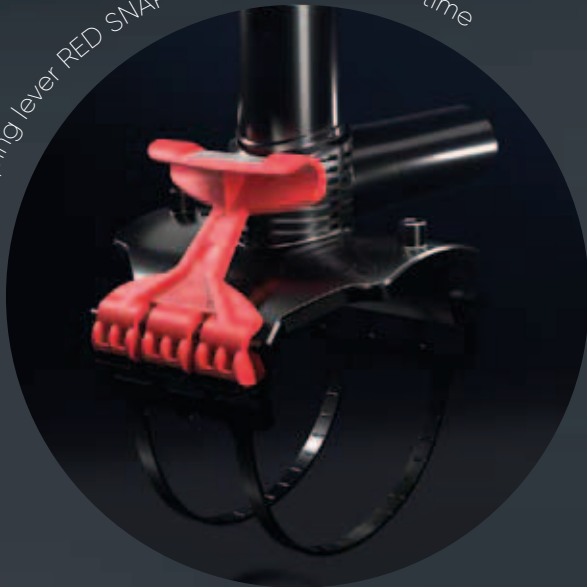
Open wires for optimum heat transfer



Nature inspired cooling fins for improved performance



Fast clamping lever RED SNAP reduces installation time



Find out more information at:



www.alias.de/en/products/frielen/tapping-valves

Evolution to the max

FRIALEN NXT – New quality in safety fittings

Optimised tolerances
for "perfect fit"

FRIALEN safety technology –
where open wires and a
maximised fusion zone form
a core combination for an
excellent joint

Approx. 25 % lower CO2
emissions when compared to
the industry average thanks
to compact design that
sustainably reduces energy
consumption

Angle and insertion
depth markings for
simplified alignment



Find out more
information at:



[www.aliaxis.de/en/
products/frialen-nxt](http://www.aliaxis.de/en/products/frialen-nxt)



With the lowest energy consumption and variable fusion voltage, FRIALEN NXT achieves unrivalled fusion quality within the shortest possible time

FRIALEN NXT UB
Electrofusion coupler



FRIALEN NXT MR
Electrofusion reducing coupler



FRIALEN NXT W45
Electrofusion 45° elbow



FRIALEN NXT T/TA
Electrofusion tee



FRIALEN NXT W90
Electrofusion 90° elbow



FRIALEN NXT MV
Electrofusion end cap

Things worth knowing about FRIALEN safety fittings

Processing instructions and additional information

The processing takes place according to our assembly instructions, which are also available for download on the Internet at www.aliaxis.de.

You can also find further information about the products and their processing, approvals, publications as well as seminar dates and contact persons via the navigation.

Product traceability

Each product is equipped with an additional barcode for traceability. The newly implemented 2D code offers you both, the fusion barcode plus extended traceability data in only one code.

Product Certifications

FRIALEN safety fittings comply with the relevant standard requirements, e.g. for gas EN1555-3, -4, ISO 4437-3, -4 for drinking water and pressure drainage EN12201-3, -4 and ISO 4427-3. Specific fields of application are mentioned in the product description. Worldwide certifications underline the highest quality level of FRIALEN and FRIAFIT safety fittings, including shut-off valves, which are marked with the following quality brands:

You can find a range of valid product certificates in the download area on our homepage.

The scope of the respective certifications of individual products is based on applicability and market requirements. Please inspect for individual cases whether the required certification is available for the intended application.



H2 Test certificate

Our products are H2-ready-100! The scope of application of our FRIALEN shapes and fittings has been extended to include hydrogen [H₂]. This means that our products can be used with the application of 100% hydrogen to MOP 10 bar. This is confirmed by test certificates of the DBI - Gastechnisches Institut GmbH and by Kiwa Gastec according to AR 214.

Suitable products are marked with an H₂ icon in the product range. Please contact our sales representatives for a planned assignment.



Fusibility

FRIALEN safety fittings can be welded to pipes with different SDR levels. Deviations from these areas are mentioned in the product description. Other levels of SDR can be processed on request.

FRIALEN saddle components / fittings ≤ d 63 are only to be processed with pipes ≤ SDR11. From d 50, pressure tapping tees DAA RED SNAP can also be processed with pipes SDR 17.6 - SDR 11.

Please note the binding information on the component or on the barcode regarding drillable SDR levels and weldability. Please contact our application technology if you want to process thin-walled pipes > SDR17.6.

FRIALEN safety fittings and FRIAFIT couplers AM can be processed with pipes made of PE 80, PE 100, PE 100-RC according to DIN 8074/75, EN 1555, EN 12201-2, ISO 4437-2 and ISO 4427-2.

For PE pipes, a melt flow rate MFR 190/5 in the range from 0.2 to 1.7 g/10 min. applies.

For other PE material types, for pipes made of PE-Xa according to DIN 16892/93 and PE-LD according to DIN 8072/73, suitability must be requested.

For components with MFR < 0.20, a confirmation of suitability is required.

The processing of the FRIALEN safety fittings is possible with FRIAMAT fusion units at ambient temperatures between - 10 °C and + 45 °C.

In addition to our assembly instructions, the material- or system-specific standards and assembly guidelines apply to material-transition fittings, e.g. flanges, metal threaded joints or steel pipe ends for welding, particularly with regard to sealing, heat penetration during welding and corrosion protection.

For case-by-case restrictions regarding laying and processing FRIALEN and FRIAFIT safety fittings in general, please read our assembly instructions, which you will find in the respective product range in the download area. Our in-house customer service representatives will also be pleased to answer any questions.

Pressure resistance

The pressure resistance of FRIALEN safety fittings and FRIAFIT couplers AM made of PE 100 is determined by the SDR (standard dimension ratio) designation.

$SDR = \text{pipe outside } \varnothing d / \text{pipe wall thickness } s$

The current standards, as listed under chapter „fusibility“, are decisive for this. Taking into account the design factor C (calculation coefficient for components made of PE and the reference temperature of 20 °C), the following pressure levels result:

Fitting material: PE 100 (FRIALEN standard)	Water	Gas
SDR	Maximum operating (PN or PFA) in bar at C = 1.25	Maximum working pressure in bar at C = 2
26	6	(4)
17	10	5
11	16	10
9	20	-
7,4	25	-



Fusion process

FRIALEN and FRIAFIT safety fittings can be processed with universal electrofusion control units, e.g. the FRIAMAT series. The fusion parameters are automatically transmitted by the fitting barcode or 2D code.

FRIALEN safety fittings can also be processed by fusion units with a fixed output voltage of 39.5 V when the fusion time is entered manually. If applicable, for manual input of fusion parameters the specific fusion time in seconds is printed on the bar code label attached to the product.

ATTENTION! When utilising fixed voltage fusion units, the permissible processing range is at ambient temperatures from -5 °C to +35 °C. The fusion time specified on the fitting bar code applies to the entire temperature range.

ATTENTION! The 39.5 V fusion time and the bar coded fusion time can be different!

Cooling time

FRIALEN safety fittings and FRIAFIT couplers as socket fittings:
The cooling time CT110 stated on the barcode label refers to the time until 110 °C is reached during cooling. CT and CT70 represent the cooling time up to 70 °C. For information: In older products, CT was equivalent to CT110.

Longer cooling times must be maintained until pressure is applied. Please read our installation manuals.

FRIALEN and FRIAFIT tapping tees, tapping valves, saddles and repair clamps:
The cooling times (CT110 or CT70) indicated on the bar code labels are understood to be the times up to the tapping / drilling.

A pressure test of the saddle fusion joint onto the pipe can be executed earlier. Please read our assembly instructions.

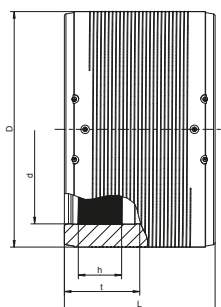
FRIALEN saddle fittings top-loading

The dimension specification, including the values in brackets, indicates the permissible range for assembly and fusion for the saddle fitting. Where applicable, the standard scope of application is restricted due to technical restrictions (e.g. drill length/pipe wall thickness or bore diameter/diameter of the blocking bladder). The suitability must always be inspected with deviating application purposes.

FRIALEN couplers

UB SDR 11

Coupler without inner stop, SDR 11



Coupler UB SDR 11 without inner stop

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200
- FM Approvals Class: 1613 (d 63 - d 500)

Note:

From dimension d 400 with separate fusion zone and preheating technology.

PE 100 SDR 11

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



	d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
	16	616577	7,4 - 11	29	60	30	0.030	135	4320
	32	612662	7,4 - 11	45	77	39	0.070	60	1920
	40	612663	7,4 - 11	54	86	43	0.090	40	1280
	50	612664	11 - 17,6	68	98	49	0.150	25	800
	63	612665	11 - 17,6	82	112	56	0.230	15	480
	75	612666	11 - 17,6	98	122	61	0.330	50	400
	90	612667	11 - 17,6	114	157	78	0.440	30	240
	110	612668	11 - 17,6	137	159	79	0.710	24	192
	125	612669	11 - 17,6	156	172	86	0.940	16	128
	140	615001	11 - 17,6	174	184	92	1.270	12	96
	160	612671	11 - 17,6	199	190	95	1.770	8	64
	180	612672	11 - 17,6	220	210	105	2.090	6	48
	200	612673	11 - 17,6	247	220	110	2.800	1	56
	225	612674	11 - 17	277	236	118	3.890	1	36
	250	617278	11 - 17,6	309	247	123,5	5.800	1	24
	280	617279	11 - 17,6	344	269	134,5	7.400	1	18
1)	315	612670	11 - 17,6	390	300	150	10.050	1	18
2)	355	615074	11 - 17,6	445	300	150	14.600	1	9
	400	615075	9 - 17,6	500	320	160	20.800	1	4
	450	615076	9 - 17,6	560	340	170	30.000	1	4
	500	615124	9 - 17,6	630	360	180	39.800	1	2
	560	616312	9 - 17,6	715	380	190	55.000	1	2
	630	616269	9 - 17,6	810	420	210	79.600	1	2
	710	616313	11 - 17,6	900	442	210	118.800	1	1
	800	616314	11 - 17,6	1000	500	250	138.800	1	1
	900	616440	11 - 17,6	1130	600	300	210.300	1	1
	1000	616989	11	1200	680	340	121.000	1	1

1) new design up to Q2/2025

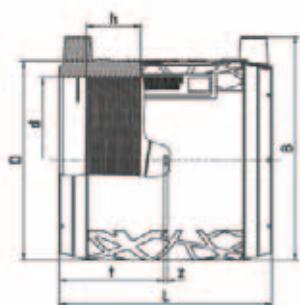
2) new design up to Q4/2025



FRIALEN couplers

UB NXT SDR 11 Coupler with removable inner stop, SDR 11

NEW



Coupler UB NXT SDR 11 with inner stop

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 RC
- Easily removable inner stop
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200

Note:

The availability of the articles must be requested individually for specific markets or countries, as these countries will be switched one by one in 2025/2026.

PE 100 SDR 11

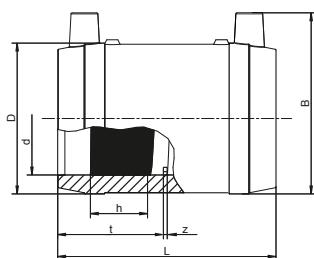
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	t	Weight [kg]	BX
20	617235	11	28	76	37	0.030	
25	617236	11	33	81	39,5	0.037	
32	617237	11 - 17	40	82	40	0.044	
40	617238	11 - 17	49,5	83	40,5	0.060	
50	617239	11 - 17	61,5	88	43	0.088	
63	617240	11 - 17	77	95	46,5	0.137	
75	617241	11 - 17	91	105	51,5	0.203	
90	617242	11 - 17	109	115,5	56,8	0.327	
110	617243	11 - 17	132,5	120	59	0.480	
125	617244	11 - 17	150	145	71,5	0.724	
140	617245	11 - 17	168	160	79	0.993	
160	617246	11 - 17	192	176	87	1.416	

MB SDR 11

Coupler with removable inner stop, SDR 11



Coupler MB SDR 11 with inner stop

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Easily removable inner stop
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249

PE 100 SDR 11

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

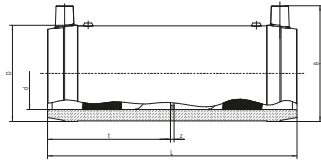


d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
20	612680	7,4 - 11	33	60	29	0.040	110	3520
25	612681	7,4 - 11	38	66	32	0.060	90	2880
32	612682	7,4 - 11	45	78	38	0.070	60	1920
40	612683	7,4 - 11	54	86	42	0.090	40	1280
50	612684	11 - 17,6	68	98	48	0.150	25	800
63	612685	11 - 17,6	82	110	55	0.230	15	480
75	612686	11 - 17,6	98	122	60	0.330	50	400
90	612687	11 - 17,6	114	157	77	0.440	30	240
110	612688	11 - 17,6	137	159	78	0.710	24	192
125	612689	11 - 17,6	156	172	85	0.940	16	128
140	612690	11 - 17,6	174	184	91	1.270	12	96
160	612691	11 - 17,6	199	190	94	1.780	8	64



FRIALEN couplers

FRIALONG SDR 11 Long coupler with removable inner stop, SDR 11



Long coupler FRIALONG SDR 11 with inner stop

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Easily removable inner stop
- Optimum pipe routing
- Tension-free fusing
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248

PE 100 SDR 11

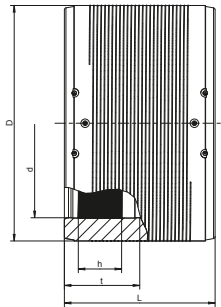
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	t	Z	Weight [kg]	BX	PU
32	615736	11	45	136	67	2	0.110	40	1280
40	615737	11	54	146	72	2	0.150	30	960
50	615608	11 - 17,6	68	175	86	2	0.250	16	512
63	615738	11 - 17,6	82	197	97	2	0.370	10	320

UB SDR 17

Coupler without inner stop, SDR 17



Coupler UB SDR 17 without inner stop

- Gas and water
- Working pressure: MOP (gas) 5 bar, PFA (water) 10 bar
- Material: PE 100
- Safety technology
- Separate fusion zone from d 400
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8611AU2250 and DW-8610CN0420

Note

From dimension d 560 with preheating technology and from dimension d 1000, only one FRIAMAT XL is to be utilised, which is available as a loan device with Order No. 613091.

PE 100 SDR 17

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



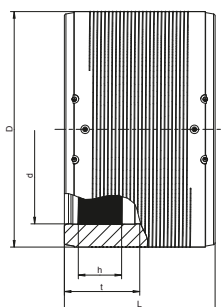
d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
315	616529	17 - 26	356	280	140	5.880	1	18
355	616530	17 - 26	400	290	145	7.600	1	18
400	616531	17 - 26	450	300	150	10.100	1	9
450	616532	17 - 26	506	320	160	13.650	1	4
500	616533	17 - 26	562	350	175	18.250	1	4
560	615706	17 - 33	630	380	190	24.800	1	2
630	615726	17 - 33	710	420	210	34.870	1	2
710	615994	17 - 33	800	442	221	47.500	1	2
800	616290	17 - 33	900	500	250	65.900	1	1
900	616345	17 - 33	1024	500	250	91.500	1	1
1000	616403	17 - 33	1130	610	305	121.000	1	1
1200	616416	17 - 33	1356	670	335	205.000	1	1



FRIALEN couplers

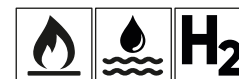
UB SDR 9

Coupler without inner stop, SDR 9



Coupler UB SDR 9 without inner stop

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 20 bar
- Material: PE 100
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- Separate fusion zone and preheating technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200
- FM Approvals Class: 1613 (d 400 - d 630)



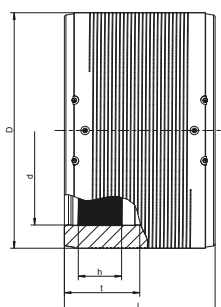
PE 100 SDR 9

Maximum permissible working pressure 20 bar (water) / 10 bar (gas)

d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
400	615075	9 - 17,6	500	320	160	20.800	1	4
450	615076	9 - 17,6	560	340	170	30.000	1	4
500	615124	9 - 17,6	630	360	180	39.800	1	2
560	616312	9 - 17,6	715	380	190	55.000	1	2
630	616269	9 - 17,6	810	420	210	79.600	1	2

UB SDR 7,4

Coupler without inner stop, SDR 7.4



Coupler UB SDR 7.4 without inner stop

- Water
- Working pressure: PFA (water) 25 bar
- Material: PE 100
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- Separate fusion zone from d 280
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 90 - d 355)

Note:

From dimension d 280 with preheating technology and separate fusion zone.

PE 100 SDR 7.4

Maximum permissible working pressure 25 bar (water)

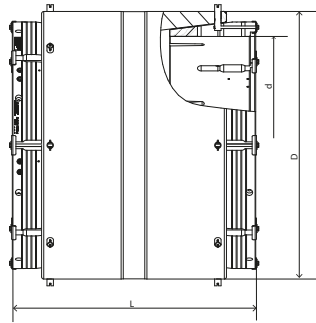


d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
90	616270	7,4 - 11	117	138	69	0.540	30	240
110	616271	7,4 - 11	142	159	79	0.870	24	192
125	616272	7,4 - 11	160	172	86	1.240	16	128
140	616273	7,4 - 11	181	184	92	1.640	12	96
160	616274	7,4 - 11	206	203	101	2.340	8	64
180	616282	7,4 - 11	225	210	105	2.700	6	48
200	616283	7,4 - 11	250	224	112	3.610	2	36
225	616284	7,4 - 11	280	240	120	4.900	1	33
250	616285	7,4 - 11	315	246	123	6.700	1	24
280	616286	7,4 - 11	355	268	134	9.300	1	18
315	616287	7,4 - 11	400	285	142	14.400	1	18
355	616288	7,4 - 11	450	300	150	16.700	1	9



KM SDR 17

Conical ring coupler, SDR 17



Conical ring coupler KM SDR 17

- Gas and water
- Working pressure: MOP (gas) 5 bar, PFA (water) 10 bar
- Material: PE 100
- Combination of coupler and clamping coupler
- Problem solver (pipe ovality and different diameters)
- Safety technology
- Separate fusion zone

Note:

Only one FRIAMAT XL is to be utilised, which is available as a loan device under the Order No. 613091.

PE 100 SDR 17

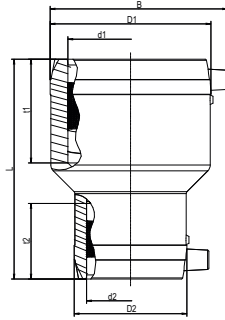
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)



d	Order No.	SDR range	D	L	Weight [kg]	BX	PU
355	616535	17 - 26	497	705	36.500	1	1
400	616536	17 - 26	550	730	46.000	1	1
450	616537	17 - 26	602	750	135.000	1	1
560	616539	17 - 26	730	850	88.100	1	1
630	616523	17 - 26	805	940	135.000	1	1
800	616541	17 - 26	1005	1065	207.000	1	1
1000	616434	17 - 26	1245	1145	435.000	1	1
1200	616435	17 - 26	1450	1290	435.000	1	1



MR SDR 11 Reducer, SDR 11



Reducer MR, SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249
- FM Approvals Class: 1613 (d 90/63 - d 110/63 + d 110/90 - d 125/90 + d 160/110 - d 225/160)

PE 100 SDR 11

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



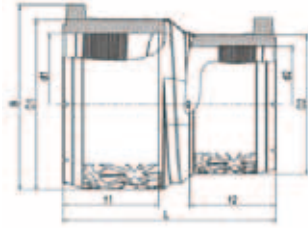
d ₁	d ₂	Order No.	SDR range	D1	D2	L	Weight [kg]	BX	PU
20	16	616824	11 - 17,6	32	28	75	0.040	1	2240
32	16	616452	11 - 17,6	45	28	91	0.080	80	2560
32	20	615386	11 - 17,6	45	32	88	0.070	80	2560
32	25	615502	11 - 17,6	45	38	88	0.080	70	2240
40	20	615387	11 - 17,6	54	32	98	0.090	60	1920
40	25	616751	11 - 17,6	54	38	101	0.090	1	1280
40	32	615388	11 - 17,6	54	45	98	0.100	50	1600
50	25	616752	11 - 17,6	66	38	107	0.120	1	960
50	32	612070	11 - 17,6	68	45	110	0.150	32	1024
50	40	612071	11 - 17,6	68	54	110	0.150	25	800
63	32	615389	11 - 17,6	82	45	125	0.210	18	576
63	40	615390	11 - 17,6	82	54	125	0.230	16	512
63	50	612072	11 - 17,6	82	68	125	0.230	16	512
75	63	616583	11 - 17,6	94	79	143	0.300	15	270
90	50	615391	11 - 17,6	117	68	160	0.480	15	270
90	63	615392	11 - 17,6	117	82	160	0.510	15	270
90	75	616582	11 - 17,6	113	94	159	0.510	15	270
110	63	615393	11 - 17,6	142	82	160	0.730	10	180
110	90	615693	11 - 17,6	140	115	180	0.880	8	144
125	90	615694	11 - 17,6	155	115	200	0.990	8	144
125	110	616510	11 - 17,6	157	137	202	1.160	16	128
160	110	615695	11 - 17,6	201	140	230	2.000	8	64
180	125	616511	11 - 17,6	214	155	275	2.300	1	60
225	160	616356	11 - 17,6	282	203	270	4.860	1	36



FRIALEN couplers

MR NXT SDR 11 Reducer, SDR 11

NEW



Reducer MR NXT SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 RC
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200

Note:

The availability of the articles must be requested individually for specific markets or countries, as these countries will be switched one by one in 2025/2026.

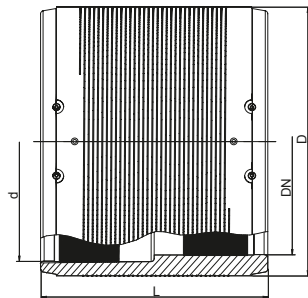
PE 100 SDR 11

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



d ₁	d ₂	Order No.	SDR range	D1	D2	L	Weight [kg]	BX
32	20	617247	11 - 17	40.5	29	124	0.056	
32	25	617248	11 - 17	40.5	33	129	0.061	
40	32	617249	11 - 17	49.5	40.5	128	0.079	
50	32	617250	11 - 17	61.5	40.5	129	0.102	
50	40	617251	11 - 17	61.5	49.5	127	0.110	
63	32	617252	11 - 17	77	40.5	134,5	0.144	
63	40	617253	11 - 17	77	49.5	135,5	0.152	
63	50	617254	11 - 17	77	61.5	135,5	0.165	
90	63	617255	11 - 17	109.5	77	153,5	0.369	
90	75	617256	11 - 17	109.5	91	159	0.404	
110	63	617257	11 - 17	132.5	77	161,5	0.525	
110	90	617258	11 - 17	132.5	109	165	0.582	
125	90	617259	11 - 17	150.5	132.5	175	0.743	
125	110	617260	11 - 17	150.5	109	171	0.810	
160	110	617261	11 - 17	192	132.5	194	1.360	

REM SDR 17 Reducer, SDR 17 for Relining



Reducer REM, SDR 17 for Relining

- Gas and water
- Working pressure: MOP (gas) 5 bar, PFA (water) 10 bar
- Material: PE 100
- Problem solver for pipe refurbishment work (relining)
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- Separate fusion zone
- Preheating technology

PE 100 SDR 17

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

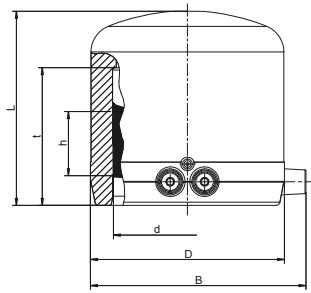


d	DN	Order No.	SDR range	D	h1	L	t	Weight [kg]	BX	PU
160	150	615571	17 - 26	190	38	180	90	1.550	12	96
315	300	615576	17 - 26	355	78	300	150	7.950	1	18



MV SDR 11

Cap, SDR 11



Cap MV SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249
- FM Approvals Class: 1613 (d 63 - d 225)

PE 100 SDR 11

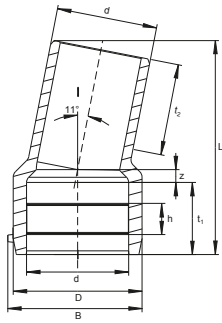
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
20	612025	11 - 17,6	31	62	41	0.040	50	2500
25	612026	11 - 17,6	35	65	41	0.040	50	2500
32	612027	11 - 17,6	44	70	44	0.060	60	1920
40	612028	11 - 17,6	55	75	49	0.090	50	1600
50	612029	11 - 17,6	67	80	55	0.120	30	960
63	612030	11 - 17,6	84	88	63	0.210	20	640
75	612031	11 - 17,6	99	99	70	0.320	20	640
90	612032	11 - 17,6	118	114	79	0.530	16	288
110	612033	11 - 17,6	143	125	82	0.850	12	216
125	612034	11 - 17,6	163	135	87	1.180	8	144
160	612035	11 - 17,6	208	160	98	2.370	10	60
180	616183	11 - 17,6	224	157	100	2.800	6	48
200	616184	11 - 17,6	250,6	167	103	3.700	4	32
225	616185	11 - 17,6	279	184	114	3.950	4	32

FRIALEN shapes

WS11 SDR 11 Elbow 11° with spigot, SDR 11



Elbow WS11 SDR 11 with spigot

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Angle 11 degrees
- Universal direction alteration
- Multiple combination = elbow 22 degrees and 33 degrees can be implemented
- Safety technology
- DVGW test mark: DV-8606AU2249

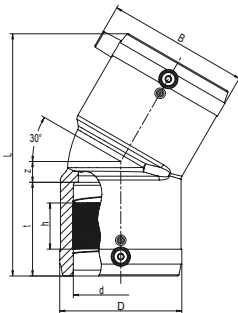


PE 100 SDR 11

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

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU
110	616139	11 - 17,6	141	235	0.920	8	144
125	616140	11 - 17,6	160	250	1.260	5	90
160	616141	11 - 17,6	200	295	2.270	8	64
180	616142	11 - 17,6	226	310	3.070	4	32
225	616143	11 - 17,6	280	350	5.290	1	18

W30 SDR 11 Elbow 30°, SDR 11



Elbow W30 SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Angle 30 degrees
- Safety technology
- DVGW test mark: DV-8606AU2249
- FM Approvals Class: 1613 (d 90 - d 225)



PE 100 SDR 11

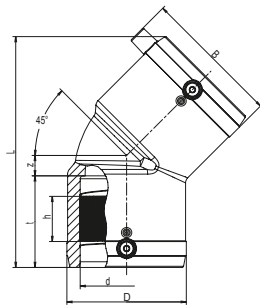
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
90	615272	11 - 17,6	115	224	72	0.780	8	144
110	615273	11 - 17,6	142	252	83	1.260	6	108
125	615274	11 - 17,6	158	270	85	1.650	4	72
160	615340	11 - 17,6	199	350	96	3.890	5	40
180	616261	11 - 17,6	229	390	101	5.000	3	24
200	616262	11 - 17,6	254	412	106	6.310	1	18
225	616263	11 - 17,6	281	456	123	8.220	1	18



W45 SDR 11

Elbow 45°, SDR 11



Elbow W45 SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Angle 45 degrees
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 63 - d 225)

PE 100 SDR 11

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

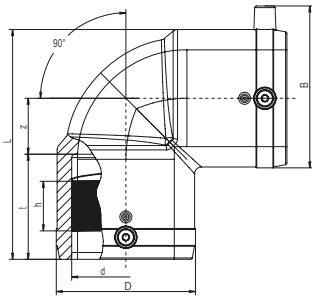


d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
25	616687	11	35	89	38	0.050	150	2400
32	612092	11	43	102	44	0.070	50	1600
40	612094	11	54	120	49	0.120	30	960
50	612096	11 - 17,6	66	136	54	0.180	20	640
63	612098	11 - 17,6	82	158	62	0.290	10	320
75	612100	11 - 17,6	96	198	70	0.520	14	252
90	612102	11 - 17,6	115	232	79	0.810	8	144
110	612104	11 - 17,6	138	265	85	1.320	10	80
125	612106	11 - 17,6	157	279	87	1.800	10	80
160	615275	11 - 17,6	207	377	92	4.280	4	32
180	615687	11 - 17,6	228	382	97	4.600	3	24
200	616264	11 - 17,6	254	415	106	6.590	1	18
225	615688	11 - 17,6	280	450	112	8.300	1	8
250	616404	11 - 17,6	310	621	128	17.300	1	6
280	616405	11 - 17,6	350	702	139	25.600	1	4
315	616406	11 - 17,6	396	755	150	35.270	1	2

FRIALEN shapes

W90 SDR 11

Elbow 90°, SDR 11



Elbow W90 SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Angle 90 degrees
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 63 - d 315)

PE 100 SDR 11

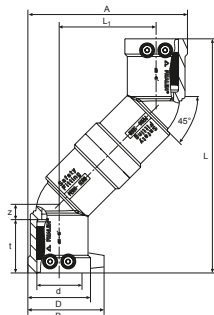
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
20	616686	11	28,5	71	30	0.040	200	3200
25	612091	11	37	73	40	0.060	60	1920
32	612093	11	43	82	44	0.080	50	1600
40	612095	11	53	96	49	0.120	30	960
50	612097	11 - 17,6	66	113	55	0.190	20	640
63	612099	11 - 17,6	83	136	62	0.340	10	320
75	612101	11 - 17,6	96	170	70	0.600	12	216
90	612103	11 - 17,6	115	202	75	0.960	6	108
110	612105	11 - 17,6	138	234	81	1.520	10	80
125	612107	11 - 17,6	157	254	87	2.030	8	64
160	615276	11 - 17,6	207	329	92	4.970	3	24
180	615689	11 - 17,6	228	354	94	5.690	3	24
200	616265	11 - 17,6	254	392	106	8.160	2	16
225	615690	11 - 17,6	280	430	113	10.110	1	8
250	616408	11 - 17,6	310	534	128	19.100	1	6
280	616409	11 - 17,6	350	621	139	27.500	1	2
315	616410	11 - 17,6	396	677	150	41.850	1	2

WET SDR 11

Misalignment bridge, SDR 11



Misalignment bridge WET, SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Bridging when the pipe alignment is offset
- Safety technology
- DVGW test mark: DV-8601AU2248

Note:

At the dimension d 63, 90 degree elbows are utilised.
Ideal for the parallel laying of two main pipes or for the house connection pipe to the tapping valve DAV or the tapping tees DAA.

PE 100 SDR 11

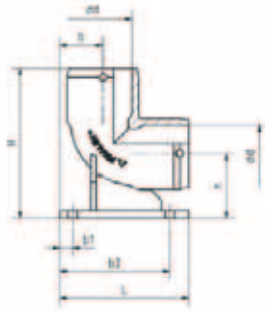
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
32	616051	11	49	177	74	42	0.230	15	750
40	616052	11	58	215	89	49	0.330	15	480
50	616053	11 - 17,6	70	242	101	53	0.510	15	270
63	616699	11 - 17,6	84	172	172	55	0.760	10	180



WF SDR 11 Elbow with duck foot, SDR 11



Elbow with duck foot WF SDR 11

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100
- Angle 90 degrees
- Assembly on the foundation possible
- Safety technology
- DVGW Registration No.: DV-8606AU2249

Note:

Ideal for the hydrant connection adjacent to main pipe. Extra spigot for connection to the house for continuous flow.

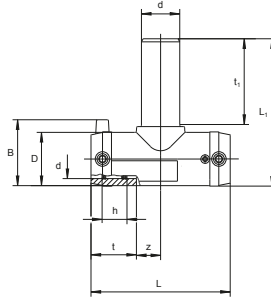


PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)

d	Order No.	SDR range	b1	H	L	Weight [kg]	BX	PU
90	617485	11 - 17,6	25	265	248	2.260	3	54
110	617486	11 - 17,6	25	290	248	2.940	1	32

TA SDR 11 T-piece with spigot, SDR 11



T-piece TA SDR 11 with spigot

- Gas, water and H2
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Spigot
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249



PE 100 SDR 11

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

With extra long outlet spigot

d	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
20/20	616685	11	29	77	95	31	0.040	200	3200
25/25	616338	11	36	108	110	41	0.080	50	900
32/32	615719	11	44	116	131	39	0.120	35	630
40/40	615720	11	53	146	151	43	0.210	20	360
50/50	615721	11 - 17,6	67	175	186	49	0.360	10	180
63/63	615722	11 - 17,6	81	197	203	56	0.530	10	180

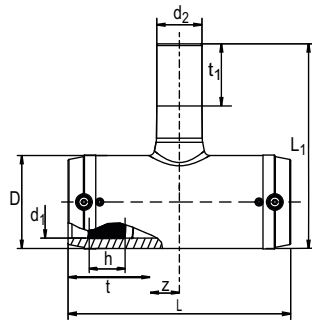
With standard outlet spigots

d	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
90/90	616677	11 - 17,6	116	280	219	79	1.250	12	96
110/110	616680	11 - 17,6	141	310	247	82	1.950	6	48
160/160	616684	11 - 17,6	203	390	326	98	4.950	3	24
180/180	617175	11 - 17,6	223	495	389	105	8.120	2	16
1) 200/200	617179	11 - 17,6	247	540	425	112	10.720	1	8
225/225	617183	11 - 17,6	278	590	469	120	15.050	1	6

1) Available from Q4 / 2025

FRIALEN shapes

TA RED SDR 11 T-piece with reduced spigot, SDR 11



T-piece TA RED SDR 11 with reduced spigot

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Reduced spigots
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250

PE 100 SDR 11

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



With long outlet spigot

d ₁	d ₂	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
32	20	616417	11	46	116	117	44	0.110	30	540
40	32	616418	11	55	146	148	46	0.170	20	360
50	32	616419	11 - 17,6	69	175	158	55	0.300	15	270
50	40	616420	11 - 17,6	69	175	167	55	0.320	15	270
63	32	616421	11 - 17,6	84	197	173	63	0.440	10	180
63	40	616422	11 - 17,6	84	197	182	63	0.450	10	180
63	50	616423	11 - 17,6	84	197	197	63	0.500	10	180

With standard outlet spigots

d ₁	d ₂	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
90	32	616675	11 - 17,6	116	280	172	79	1.050	10	80
90	63	616676	11 - 17,6	116	280	191	79	1.100	10	80
110	63	616678	11 - 17,6	141	310	216	82	1.700	8	64
110	90	616679	11 - 17,6	141	310	244	82	1.850	8	64
160	90	616681	11 - 17,6	203	390	305	98	4.400	3	24
160	110	616682	11 - 17,6	203	390	308	98	4.500	3	24
160	125	616683	11 - 17,6	203	390	313	98	4.600	3	24
180	125	617174	11 - 17,6	223	495	357	105	7.160	2	16
1) 200	90	617176	11 - 17,6	247	540	360	112	8.410	1	8
1) 200	110	617177	11 - 17,6	247	540	370	112	8.890	1	8
1) 200	160	617178	11 - 17,6	247	540	401	112	9.900	1	8
1) 225	90	617180	11 - 17,6	278	590	389	120	11.550	1	8
1) 225	110	617181	11 - 17,6	278	590	399	120	12.200	1	8
1) 225	160	617182	11 - 17,6	278	590	430	120	13.370	1	8
250	225	616427	11 - 17,6	310	770	440	128	21.800	1	2
280	225	616429	11 - 17,6	350	905	475	139	30.800	1	2
315	225	616431	11 - 17,6	396	940	525	150	43.500	1	2

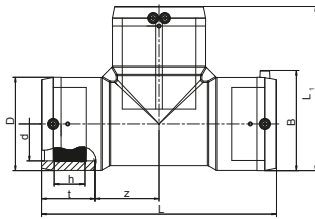
1) Available from Q2 / 2025



FRIALEN shapes

T SDR 11

T-piece, SDR 11



T-piece T SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 75 - d 315)

PE 100 SDR 11

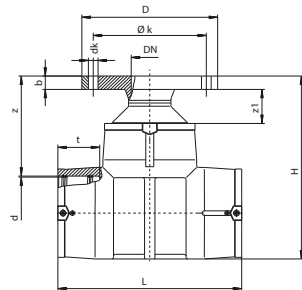
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	D	L	L1	t	Weight [kg]	BX	PU
75	612165	11 - 17,6	96	278	187	62	0.980	8	144
90	612166	11 - 17,6	117	305	211	71	1.660	10	80
110	612167	11 - 17,6	142	355	248	79	2.590	6	48
125	612168	11 - 17,6	160	384	272	79	3.500	5	40
160	615277	11 - 17,6	200	430	315	88	5.820	3	24
180	615691	11 - 17,6	228	480	354	95	7.840	2	16
200	616266	11 - 17,6	251	550	400	109	11.130	1	8
225	615692	11 - 17,6	284	580	432	111	13.910	1	8
250	616412	11 - 17,6	310	770	540	128	28.200	1	4
280	616413	11 - 17,6	350	905	630	139	42.200	1	2
315	616414	11 - 17,6	396	940	670	150	58.100	1	1

TFL

Flange T-piece, SDR 11 / SDR 17



Flange T-piece TFL

- Water
- Working pressure: PFA (water) 16 bar (SDR 11), 10 bar (SDR 17)
- Material: PE 100 and metal insert
- Safety technology

Note:

Reduction and fusion flange. Metal insert in flange in order to prevent cold flow.

We recommend GST seals.

Note the screw tightening torques after specifying the seal manufacturer or DVS.

Additional washers are required.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)



d	DN	Order No.	SDR range	D	d _k	H	L	t	Weight [kg]	BX	PU
110	80	615590	11 - 17,6	204	17	316	355	87	5.170	4	32
125	80	615591	11 - 17,6	204	17	343	384	87	5.490	3	24
160	80	615592	11 - 17,6	204	17	390	430	96	8.050	2	16
180	80	615910	11 - 17,6	204	17	416	480	103	10.000	1	8

PE 100 SDR 17

Maximum permissible working pressure 10 bar (water)



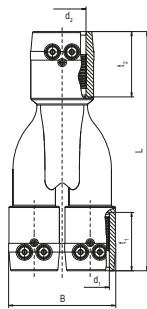
d	DN	Order No.	SDR range	D	d _k	H	L	t	Weight [kg]	BX	PU
225	80	616031	11 - 17,6	204	17	465	580	118	15.420	2	4



FRIALEN shapes

Y SDR 11

Y-piece, SDR 11



Y-piece Y SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

PE 100 SDR 11

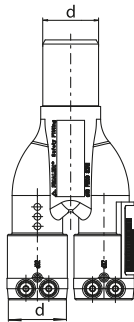
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	L	Weight [kg]	BX	PU
32-32-40	640034	11	205	0.230	28	504
40-40-50	640036	11	219	0.360	18	324

YS SDR 11

Y-piece with spigot, SDR 11



Y-piece YS SDR 11 with spigot

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

PE 100 SDR 11

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

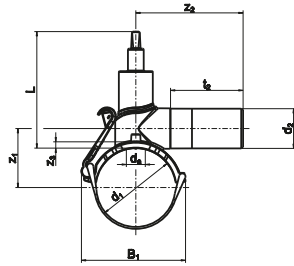


d	Order No.	SDR range	Weight [kg]	BX	PU
32-32-40	640035	11	0.200	28	504
40-40-50	640037	11	0.320	18	324



DAV

Tapping valve DAV RED SNAP, SDR 11 (closing in a clockwise direction)



Tapping valve RED SNAP CW, SDR 11

- Gas, water and H2
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Quick release mechanism (RED SNAP):
 - Simple and error-free assembly
 - More quality and high security
 - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

Note:

For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14.

The output dimension d 63 / 40 is a solution with reducing socket MR.

PE 100 SDR 11

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

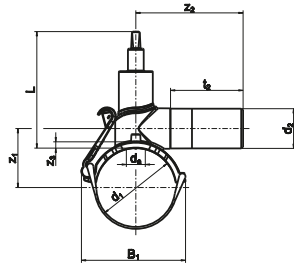


d ₁	d ₂	Order No.	Drilling Ø d _a	L	WS [mm]	Weight [kg]	BX	PU
50	32	617024	30	177	14	1.220	24	192
63	32	617025	30	177	14	1.220	24	192
63	40	617026	30	177	14	1.220	20	160
63	63	616952	30	177	14	1.210	20	160
75	32	617027	30	177	14	1.040	20	160
90	32	616960	30	183	14	1.220	12	96
90	40	616961	30	183	14	1.230	12	96
90	50	616962	30	183	14	1.260	12	96
90	63	616963	30	183	14	1.340	12	96
110	32	616964	30	183	14	1.230	12	96
110	40	616965	30	183	14	1.240	12	96
110	50	616966	30	183	14	1.290	12	96
110	63	616967	30	183	14	1.360	12	96
125	32	616968	30	183	14	1.260	12	96
125	40	616969	30	183	14	1.240	12	96
125	50	616970	30	183	14	1.280	12	96
125	63	616971	30	183	14	1.380	12	96
140	32	616972	30	183	14	1.230	12	96
140	63	616973	30	183	14	1.360	12	96
160	32	616974	30	208	14	1.420	10	80
160	40	616975	30	208	14	1.430	10	80
160	50	616976	30	208	14	1.490	10	80
160	63	616977	30	208	14	1.560	10	80
180	32	616978	30	208	14	1.440	10	80
180	40	616979	30	208	14	1.460	10	80
180	50	616980	30	208	14	1.510	10	80
180	63	616981	30	208	14	1.580	10	80
200	32	616982	30	208	14	1.450	8	64
200	63	616984	30	208	14	1.590	8	64
225	32	616985	30	208	14	1.480	8	64
225	40	616986	30	208	14	1.490	8	64
225	50	616987	30	208	14	1.540	8	64
225	63	616988	30	208	14	1.620	8	64

FRIALEN tapping tees

DAV ACW

Tapping valve DAV RED SNAP, SDR 11 (closing in an anti-clockwise direction)



Tapping valve DAV RED SNAP ACW, SDR 11

- Gas, water and H2
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Quick release mechanism (RED SNAP):
 - Simple and error-free assembly
 - More quality and high security
 - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

Note:

For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14.

The output dimension d 63 / 40 is a solution with reducing socket MR.

PE 100 SDR 11

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



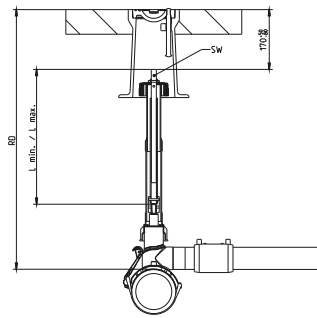
d ₁	d ₂	Order No.	Drilling Ø d _a	L	WS [mm]	Weight [kg]	BX	PU
50	32	617127	30	177	14	1.210	24	192
63	32	617128	30	177	14	1.210	24	192
63	63	617129	30	177	14	1.330	20	160
75	32	617130	30	177	14	1.040	20	160
90	32	617131	30	183	14	1.210	12	96
90	63	617132	30	183	14	1.330	12	96
110	32	617133	30	183	14	1.230	12	96
110	63	617134	30	183	14	1.360	12	96
125	32	617135	30	183	14	1.260	12	96
125	63	617136	30	183	14	1.380	12	96
140	32	617137	30	183	14	1.230	12	96
140	63	617138	30	183	14	1.360	12	96
160	32	617139	30	208	14	1.410	10	80
160	63	617140	30	208	14	1.550	10	80
180	32	617141	30	208	14	1.440	10	80
180	63	617142	30	208	14	1.570	10	80
200	32	617143	30	208	14	1.440	8	64
200	63	617144	30	208	14	1.590	8	64
225	32	617145	30	208	14	1.470	8	64
225	63	617146	30	208	14	1.620	8	64



FRIALEN tapping tees

DBS

Installation kit for tapping valves



Installation kit DBS

- To operate the DAV RED SNAP from the road cap downwards
- KlickFix (tool-free) with foam rubber
- Wrench size SW14 (14 mm)
- Telescopic bar:
 - Length fitting
 - Continuously adjustable (without tools)
- Self-supporting
- Corrosion protected (actuating element and coupling sleeve made of hot-dip galvanised cast steel, linkage made of hot-dip galvanised steel)

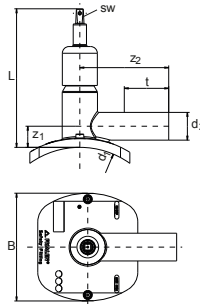
Note:

The installation kit DBS is suitable for use with FRIALEN tapping valves DAV RED SNAP.

RD [m]	Order No.	L	WS [mm]	Weight [kg]	BX	PU
0,45 - 0,7	616998	0,26 - 0,37 m	14	1.740	1	42
0,7 - 1,0	616999	0,41 - 0,67 m	14	2.150	1	42
0,9 - 1,3	617000	0,525 - 0,98 m	14	1.810	1	42
1,2 - 1,8	617001	0,86 - 1,57 m	14	3.600	1	42
1,8 - 2,7	617002	1,56 - 2,87 m	14	3.600	1	42
2,6 - 3,5	617003	1,67 - 3,91 m	14	4.500	1	42

DAV TL

Top-loading tapping valve, SDR 11



Top-loading tapping valve DAV TL SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Universal clamping option (top loading):
 - Safe clamping with FRIATOP
 - Universal adaptation to pipe diameter
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Maximum 10 turns for opening and closing
- Safety technology
- ÖVGW test mark: G2.318, GRISW1.256

Note:

Can only be fused with the clamping device FRIATOP (Order No. 613350). For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14 (14 mm).

PE 100 SDR 11

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

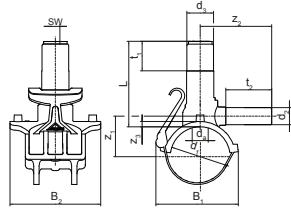


d ₁	d ₂	Order No.	Drilling Ø d _a	L	t	Weight [kg]	BX	PU
250-315	63	616464	30	251	117	2.970	7	56
355-400	63	616465	30	251	117	2.470	7	56



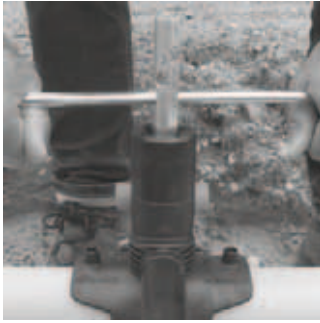
DAA

Tapping tee RED SNAP, SDR 11



Tapping tee DAA SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Quick release mechanism (RED SNAP):
 - Simple and error-free assembly
 - Increased quality and safety
 - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-6611CS007



Note:

As a precautionary measure, we recommend additionally using a DK cap for all new DAA installations.

The actuating key FWSS SW 17 (Order no. 613246) must be used for all dimensions.

All outlets (d₂) with nominal widths 40 and 50 are always solutions with a reducing sleeve MR.

Special application pressure test:

A pressure test adapter (order no. 613597) is available for the pressure tapping tee.

PE 100 SDR 11

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



d ₁	d ₂	Order No.	d ₃	Drilling Ø d _a	L	WS [mm]	Weight [kg]	BX	PU
40	20	612630	50	25	120	17	0.380	30	240
40	25	616473	50	25	120	17	0.380	30	240
40	32	616474	50	25	120	17	0.390	30	240
50	20	616475	50	25	120	17	0.380	28	224
50	25	612702	50	25	120	17	0.390	28	224
50	32	615080	50	25	120	17	0.400	28	224
63	20	612631	50	25	130	17	0.440	20	160
63	25	612633	50	25	130	17	0.450	20	160
63	32	612632	50	25	130	17	0.460	20	160
63	40	616472	50	30	160	17	0.860	16	128
63	63	616334	50	30	160	17	0.640	16	128
75	32	616482	50	25	130	17	0.480	24	192
90	20	616483	50	30	160	17	0.610	14	112
90	25	616484	50	30	160	17	0.620	14	112
90	32	612634	50	30	160	17	0.630	14	112
90	40	615656	50	30	160	17	0.970	14	112
90	50	616476	50	30	160	17	0.990	14	112
90	63	612701	50	30	160	17	0.750	14	112
110	20	616487	50	30	160	17	0.620	14	112
110	25	616488	50	30	160	17	0.630	14	112
110	32	612637	50	30	160	17	0.650	14	112
110	40	615662	50	30	160	17	0.980	14	112
110	50	616477	50	30	160	17	0.990	14	112
110	63	612624	50	30	160	17	0.770	14	112
125	20	616491	50	30	160	17	0.650	12	96
125	25	616492	50	30	160	17	0.670	12	96
125	32	612649	50	30	160	17	0.670	12	96
125	40	615668	50	30	160	17	1.030	12	96
125	50	616478	50	30	160	17	1.120	12	96
125	63	612309	50	30	160	17	0.820	12	96
140	32	616495	50	30	160	17	0.710	12	96
140	63	616496	50	30	160	17	0.830	12	96



FRIALEN tapping tees

DAA Tapping tee RED SNAP, SDR 11

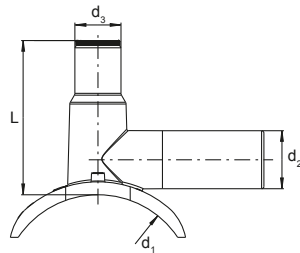
PE 100 SDR 11

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



d ₁	d ₂	Order No.	d ₃	Drilling Ø d _a	L	WS [mm]	Weight [kg]	BX	PU
160	20	616497	50	30	160	17	0.750	10	80
160	25	616498	50	30	160	17	0.750	10	80
160	32	612641	50	30	160	17	0.760	10	80
160	40	615675	50	30	160	17	1.130	10	80
160	50	616480	50	30	160	17	1.130	10	80
160	63	612650	50	30	160	17	0.910	10	80
180	20	616501	50	30	190	17	0.790	10	80
180	25	616502	50	30	190	17	0.800	10	80
180	32	612651	50	30	190	17	0.820	10	80
180	50	616481	50	30	190	17	1.180	10	80
180	63	612652	50	30	190	17	0.950	10	80
200	32	612654	50	30	190	17	0.820	8	64
200	63	612659	50	30	190	17	0.950	8	64
225	32	612657	50	30	190	17	0.830	8	64
225	50	616486	50	30	190	17	1.210	8	64
225	63	612655	50	30	190	17	0.990	8	64

DAA TL Top-loading tapping tee, SDR 11



Top-loading tapping tee DAA TL SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Universal clamping option (top loading):
 - Safe clamping with FRIATOP
 - Universal adaptation to pipe diameter
- Leak test possible before drilling
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250

Note:

Can only be fused with the clamping device FRIATOP (Order No. 613350). Only one actuating key FWSS SW 19 (Order No. 613250) for all dimensions.

There is a suitable pressure test adapter FWDPA for DAA TL (Order No. 613595).

From dimension d 355 to d 400, the DAA TL is only suitable for SDR 17 pipes.



PE 100 SDR 11

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

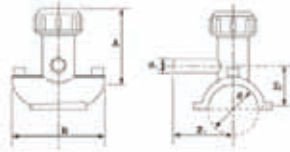


d ₁	d ₂	Order No.	d ₃	Drilling Ø d _a	L	Weight [kg]	BX	PU
250-315 (- 400)	63	615339	50	30	167	1.450	4	72



LVTT

Tapping tee, SDR 11



Tapping tee LVTT SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Quick release mechanism (RED SNAP):
 - Simple and error-free assembly
 - Increased quality and safety
 - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- DVGW test mark: DV-6611CS0007

PE 100 SDR 11

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



	d	d ₁	Order No.	MOP gas	PFA/PN water	Drilling Ø d _a	WS [mm]	Weight [kg]	BX
1)	32	20	2071412	10 bar	16 bar	14	10	0.220	50
1)	40	20	2071415	10 bar	16 bar	18,5	10	0.360	50
1)	40	32	2071417	10 bar	16 bar	18,5	10		30
1)	63	20	2071424	10 bar	16 bar	20	10	0.400	30
1)	63	25	2071425	10 bar	16 bar	20	10	0.410	30
1)	63	32	2071426	10 bar	16 bar	20	10		30
2)	90	20	2071437	10 bar	16 bar	20	10	0.410	30
2)	90	32	2071439	10 bar	16 bar	20	10	0.430	30
2)	110	20	2071445	10 bar	16 bar	20	10	0.430	30
2)	110	25	2071446	10 bar	16 bar	20	10	0.430	30
2)	110	32	2071448	10 bar	16 bar	20	10	0.430	30
2)	125	20	2071454	10 bar	16 bar	20	10	0.430	30
2)	125	25	2071455	10 bar	16 bar	20	10	0.430	30
2)	125	32	2071456	10 bar	16 bar	20	10	0.430	30
2)	160	20	2071475	10 bar	16 bar	20	10	0.430	30
2)	160	32	2071477	10 bar	16 bar	20	10	0.430	30

1) permanent PE Underclamp

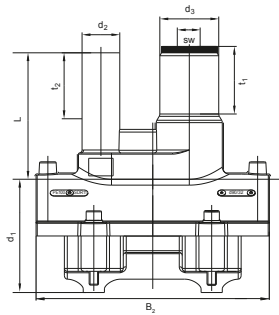
2) permanent Strap Underclamp (4 - 10 times usable Strap Underclamp)



FRIALEN tapping tees

DAP

Horizontal tapping tee, SDR 11



Horizontal tapping tee DAP SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Conventional clamping technology (brackets and screws)
- Vertical outlet for special solutions:
 - Space-saving installation
 - With 90 degree elbow and ball valve = Rotatable dome 360 degrees
- Leak test possible before drilling.
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249

Note:

Utilise the operating key FWSS SW 17 for d 63 (Order No. 613246) or FWSS SW 19 from d 90 (Order No. 613250).
There is a suitable pressure test adapter FWDPA for DAP (Order No. 613595).



PE 100 SDR 11

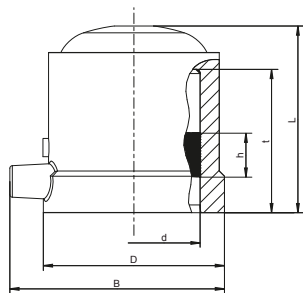
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d ₁	d ₂	Order No.	d ₃	Drilling Ø d _a	L	Weight [kg]	BX	PU
63	32	616042	40	21	125	0.630	16	288
110	32	615581	50	30	158	1.280	12	96
110	50	615606	50	30	158	1.340	12	96
125	32	615711	50	30	158	1.340	12	96
125	50	615712	50	30	158	1.330	12	96
160	32	615713	50	30	170	1.540	8	64
160	50	615714	50	30	170	1.560	8	64
180	32	615715	50	30	170	1.550	6	48
180	50	615716	50	30	170	1.570	6	48
225	32	615717	50	30	170	1.570	6	48
225	50	615718	50	30	170	1.590	6	48

DK

Cap for tapping tees, SDR 11



Cap for tapping tees DK SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

PE 100 SDR 11

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



d	Order No.	D	L	t	Weight [kg]	BX	PU
50	612310	69	72	55	0.120	30	960



FRIALEN tapping tees

GAB

Purge stack for venting gas pipes



Purge stack GAB for venting PE gas pipes

- Gas and H2
- Working pressure: MOP (gas) 10 bar
- Material: PE 100
- Blow-out aperture: 1" and 2"
- With DAV RED SNAP
- Telescopic bar:
 - Length adjustment
 - Continuously adjustable (without tools)
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

Note:

The GAB is delivered without additional tools.

PE 100 SDR 11

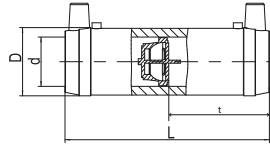
Maximum permissible working pressure 10 bar (gas)



d ₁	R	RD [m]	Order No.	Weight [kg]	BX
63	1"	0,7 - 1,0	2006380	4.440	1
63	2"	0,7 - 1,0	2006383	6.710	1
90	1"	0,7 - 1,0	2009080	5.240	1
90	2"	0,7 - 1,0	2009083	7.400	1
110	1"	0,7 - 1,0	2011080	5.500	1
110	2"	0,7 - 1,0	2011083	7.650	1
125	1"	0,7 - 1,0	2012580	5.700	1
125	2"	0,7 - 1,0	2012583	7.850	1
160	1"	0,7 - 1,0	2016080	6.200	1
160	2"	0,7 - 1,0	2016083	8.330	1
180	1"	0,7 - 1,0	2018080	6.200	1
180	2"	0,7 - 1,0	2018083	8.340	1
225	1"	0,7 - 1,0	2022580	6.300	1
225	2"	0,7 - 1,0	2022583	8.440	1



FRIASTOP M Gas-Stop Sentry GS by Maxitrol



Gas-Stop FRIASTOP with Sentry GS System by Maxitrol

- Gas and H₂ (100 %)
- Working pressure:
 - Type Z and B MOP (Gas) 5 bar
 - Type D MOP (Gas) 1 bar
- Material: PE 100
- Overflow device for Type D and Z
- Function with admixture of 100 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BO0438

Note:
Application 100% hydrogen according to current regulations.

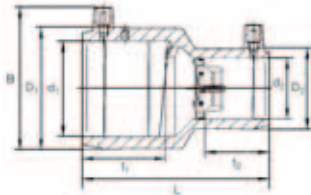
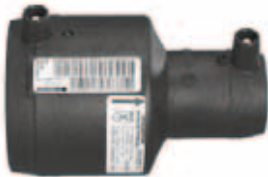
PE 100 SDR 11

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



d	Operating pressure range p _{min} - p _{max}	Order No.	Type	D	L	t	VN	Weight [kg]	BX	PU
32	35 mbar - 5 bar	616187	Z	45	136	65	17 - 40	0.140	40	1280
40	35 mbar - 5 bar	616188	Z	54	146	71	26 - 62	0.220	30	960
50	35 mbar - 5 bar	616189	Z	68	175	85	41 - 99	0.380	16	512
63	35 mbar - 5 bar	616190	Z	82	197	96	66 - 158	0.530	10	320
32	25 mbar - 1 bar	616191	D	45	136	65	11 - 16	0.140	40	1280
40	25 mbar - 1 bar	616193	D	54	146	71	19 - 27	0.220	30	960
50	25 mbar - 1 bar	616195	D	68	175	85	28 - 40	0.380	16	512
63	25 mbar - 1 bar	616197	D	82	197	96	51 - 72	0.530	10	320
32	100 mbar - 5 bar	616192	B	45	136	65	26 - 60	0.140	40	1280

MR STOP Gas-Stop Sentry GS by Maxitrol in Reducer



Gas-Stop MR STOP with Sentry GS System by Maxitrol in Reducer

- Gas and H₂ (100 %)
- Working pressure:
 - Type Z MOP (Gas) 5 bar
 - Type D MOP (Gas) 1 bar
- Material: PE 100
- Overflow device for Type Z and D
- Function with admixture of 100 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BO0438

Note:
Application 100% hydrogen according to current regulations.

PE 100 SDR 11

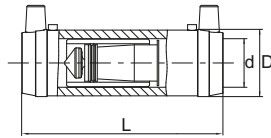
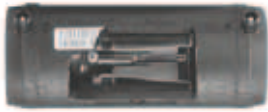
Maximum permissible working pressure Type Z: 5 bar (gas), Type D: 1 bar (gas)



d ₁	d ₂	Operating pressure range p _{min} - p _{max}	Order No.	Type	D1	D2	L	VN	Weight [kg]	BX	PU
50	40	35 mbar - 5 bar	616218	Z	68	54	110	26 - 62	0.150	12	600
63	32	35 mbar - 5 bar	616219	Z	82	45	125	17 - 40	0.210	18	576
63	40	35 mbar - 5 bar	616220	Z	82	54	125	26 - 62	0.230	8	400
63	50	35 mbar - 5 bar	616221	Z	82	68	125	41 - 99	0.230	8	400
63	32	25 mbar - 1 bar	616238	D	82	45	125	11 - 16	0.210	10	500
63	50	25 mbar - 1 bar	616240	D	82	68	125	28 - 40	0.360	16	512

FRIALEN valves

FRIASTOP P Gas-Stop by Pipelife



Gas-Stop FRIASTOP with integrated Gas-Stop System by Pipelife

- Gas and H₂ (100 %)
- Working pressure:
 - Type U, UUE and S, SOU MOP (Gas) 5 bar
 - Type A/D MOP (Gas) 1 bar
- Material: PE 100
- Overflow device for Type A/D, UUE and S
- Without overflow device for Type U and SOU
- Function to admixture of 100 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BP0060 (DVGW G 5305-2)

PE 100 SDR 11

Maximum permissible working pressure Type U, UUE, S, SOU: 5 bar (gas), Type A/D: 1 bar (gas)



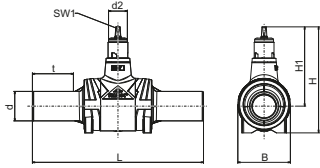
d	Operating pressure range $p_{min} - p_{max}$	Order No.	Type	D	L	t	VN	Weight [kg]	BX	PU
32	35 mbar - 5 bar	616199	U	45	136	38	16 - 38	0.140	40	1280
50	35 mbar - 5 bar	616201	U	68	175	54	38 - 91	0.360	20	640
63	35 mbar - 5 bar	616203	U	82	197	59	58 - 140	0.560	12	384
32	35 mbar - 5 bar	616200	UUE	45	136	38	16 - 38	0.140	40	1280
50	35 mbar - 5 bar	616202	UUE	68	175	54	38 - 91	0.360	20	640
63	35 mbar - 5 bar	616204	UUE	82	197	59	58 - 140	0.560	12	384
32	25 mbar - 1 bar	616205	A/D	45	136	38	10 - 14	0.140	40	1280
50	25 mbar - 1 bar	616207	A/D	68	175	54	25 - 36	0.360	20	640
63	25 mbar - 1 bar	616209	A/D	82	197	59	40 - 55	0.560	12	384
32	200 mbar - 5 bar	616339	S	45	136	38	36 - 80	0.140	40	1280
50	200 mbar - 5 bar	616340	S	68	175	54	110 - 240	0.360	20	640
63	200 mbar - 5 bar	616341	S	82	197	59	180 - 400	0.560	12	384
32	200 mbar - 5 bar	617353	SOU	45	136	38	36 - 80	0.140	40	1280
63	200 mbar - 5 bar	617354	SOU	82	197	59	180 - 400	0.560	12	384



FRIALEN valves

FRIALOC

PE shut-off valve without flow losses



Shut-off valve FRIALOC CW

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100
- Wrench size SW19 (19 mm)
- Double shut-off function
- No cavities and stagnation
- No flow losses
- Maximum 14 turns for opening and closing
- DVGW test mark: DW-6210BT0171

Note:

The dimension d 200 to d250 have a restricted passage of d 180.

There is a suitable installation kit FBS with KlickFix for wrench size SW19 (19 mm).

Value da is the maximum tapping diameter of the external tapping device.

PE 100 SDR 11

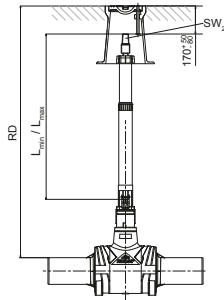
Maximum permissible working pressure 16 bar (water)



d	d ₂	Order No.	da	H	L	WS1 [mm]	t	Weight [kg]	BX	PU
90	80	616293	65	450	720	19	158	13.900	1	10
110	80	616294	84	450	720	19	164	14.200	1	10
125	80	616295	84	450	720	19	174	14.500	1	10
160	80	616296	123	608	1010	19	196	37.900	1	2
180	80	616297	123	608	1030	19	210	39.000	1	2
200	80	616453	123	608	1030	19	120	40.500	1	2
225	80	616298	123	608	1030	19	124	40.500	1	2
250	80	616438	123	608	1030	19	132	41.940	1	2

FBS

Installation kit for FRIALOC PE shut-off valves



Installation kit FBS for FRIALOC

- To operate the FRIALOC from the road cap downwards
- KlickFix (tool-free)
- Wrench size SW 30 (30 mm)
- Telescopic bar:
 - Length fitting
 - Continuously adjustable (without tools)
- Self-supporting
- Corrosion protected (actuating element and coupling sleeve made of hot-dip galvanised cast steel, linkage made of hot-dip galvanised steel)

Steel linkage, hot-dipped galvanised

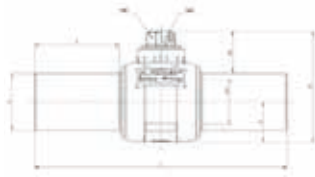
RD [m]	Order No.	L	WS2 [mm]	Weight [kg]	BX	PU
0,75 - 1,0	616308	0,397 - 0,571 m	30	2.400	1	42
0,9 - 1,3	616309	0,552 - 0,881 m	30	4.200	1	42
1,2 - 1,8	616310	0,817 - 1,441 m	30	5.400	1	42
1,5 - 2,3	616318	1,035 - 1,847 m	30	6.650	1	42



FRIALEN valves

KHP

Ball valve with reduced bore



Ball valve for gas KHP

- Gas and H₂
- Working pressure: MOP (gas) 10 bar
- Material: PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- DVGW test mark: DG-8631AU2251, DG-8631AU2252 and DG-8631AU2253

Note:

For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).

PE 100 SDR 11

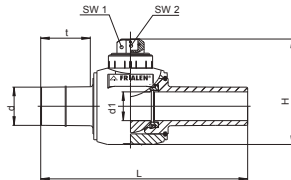
Maximum permissible working pressure 10 bar (gas)



d	d ₁	Order No.	H	h1	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
32	24	612490	138	82	310	50 x 50	20	96	0.650	1	170
40	24	612497	138	78	310	50 x 50	20	96	0.700	1	170
50	24	612492	138	73	310	50 x 50	20	96	0.750	1	170
63	43	612494	195	96.5	410	50 x 50	25	128	2.380	1	50
90	67	612495	241	109	553	50 x 50	25	154	4.700	1	24
110	67	612493	241	99	553	50 x 50	25	154	5.100	1	24
125	67	612496	241	91.5	553	50 x 50	25	154	5.400	1	24
160	98	612483	332	122	539	50 x 50	25	202	12.000	1	8
180	98	615309	332	112	539	50 x 50	25	202	13.100	1	8
200	98	612480	332	102	539	50 x 50	25	202	14.120	1	8
225	98	616186	332	89.5	539	50 x 50	25	202	15.000	1	8

KH

Ball valve with full bore



Ball valve for gas KH

- Gas and H₂
- Working pressure: MOP (gas) 10 bar
- Material: PE 100
- Gasket: NBR
- No flow losses
- 1/4 turns for opening and closing
- DVGW test mark: DG-8631AU2251 and DG-8631AU2252

Note:

For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).
From dimension d 50, utilise a KBS d 63 - d 225.

PE 100 SDR 11

Maximum permissible working pressure 10 bar (gas)

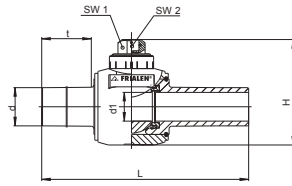
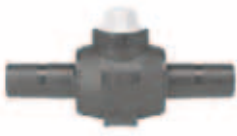


d	d ₁	Order No.	H	h1	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
20	24	616470	138	88	310	50 x 50	20	98	0.650	1	100
25	24	616471	138	85.5	310	50 x 50	20	98	0.650	1	170
32	34	616176	156	92	324	50 x 50	20	108	0.650	1	100
40	34	616177	156	88	324	50 x 50	20	108	0.700	1	100
50	51	616178	204	109	405	50 x 50	25	129	2.220	1	50
63	51	616179	206	104.5	410	50 x 50	25	134	2.380	1	50
90	98	616180	293	130	577	50 x 50	25	173	7.100	1	18
110	98	616181	293	120	577	50 x 50	25	173	7.000	1	18
125	98	616182	293	112.5	577	50 x 50	25	173	5.400	1	18



KHW

Ball valve for water with full bore



Ball valve KHW for water

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100
- Gasket: EPDM
- 1/4 turns for opening and closing
- DVGW test mark: DW-6210CQ0059

Note:

For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).

From dimension d 50, utilise a KBS d 63 - d 225.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)



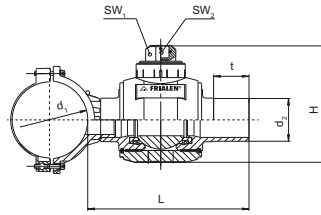
d	d ₁	Order No.	H	h1	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
32	34	616656	156	92	324	50 x 50	20	108	0.650	1	100
40	34	616657	156	88	324	50 x 50	20	108	0.700	1	100
50	43	616658	204	109	405	50 x 50	25	129	2.220	1	50
63	51	616659	206	104.5	410	50 x 50	25	134	2.380	1	48



FRIALEN valves

AKHP

Tapping ball valve for side tapping gas under pressure



Tapping ball valve AKHP for gas

- Gas and H2
- Working pressure: MOP (gas) 10 bar
- Material: PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- Saddle component with clamp
- Safety technology
- DVGW test mark: DG-8631AU2252 and DG-8631AU2253

Note:

For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).

For tapping under pressure, we recommend the tapping tool from Hütz & Baumgarten (www.huetz-baumgarten.de).

PE 100 SDR 11

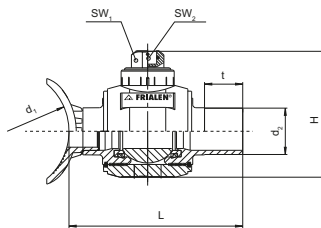
Maximum permissible working pressure 10 bar (gas)



d ₁	d ₂	Order No.	Drilling Ø d _a	H	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
110	63	615427	42	180	330	50 x 50	25	110	3.080	6	48
110	90	615428	60	240	335	50 x 50	25	90	4.670	4	32
125	90	615431	60	240	335	50 x 50	25	90	4.790	4	32
160	63	615433	42	180	330	50 x 50	25	110	3.300	4	32
160	90	615434	60	240	335	50 x 50	25	90	4.970	4	32
180	90	615437	60	240	335	50 x 50	25	90	4.990	4	32
225	90	615440	60	240	335	50 x 50	25	90	5.000	4	32

AKHP TL

Tapping ball valve Top loading for side tapping under pressure



Tapping ball valve AKHP TL

- Gas and H2
- Working pressure: MOP (gas) 10 bar
- Material: PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- Top load saddle
- Safety technology
- DVGW test mark: DG-8631AU2252 and DG-8631AU2253

Note:

Can only be used with the clamping device FRIATOP (Order No. 613350).

For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).

For tapping under pressure, we recommend the drilling tool from Hütz & Baumgarten (www.huetz-baumgarten.de).

From dimension d 450 to d 560 only suitable for SDR17.



PE 100 SDR 11

Maximum permissible working pressure 10 bar (gas)



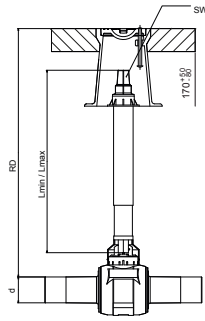
d ₁	d ₂	Order No.	Drilling Ø d _a	H	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
250-450 (- 560)	90	615526	60	240	335	50 x 50	25	90	4.470	4	32



FRIALEN valves

KBS

Installation kit for ball valves



Installation kit KBS for ball valves

- To operate the ball valves from the road cap downwards
- Wrench size SW14 (14 mm) and SW30 (30 mm)
- Telescopic bar:
 - Length fitting
 - Continuously adjustable (without tools)
- Self-supporting
- Corrosion protected (actuating element and coupling sleeve made of hot-dip galvanised cast steel, linkage made of hot-dip galvanised steel)

Note:

Stable seating for the sleeve pipe bell at the dimension d 20-50, by means of a design comprising a housing.

d	RD [m]	Order No.	L	WS [mm]	Weight [kg]	BX	PU
20-50	0,62 - 0,79	617586	0,35 - 0,52 m	30 + 14	2.000	1	42
20-50	0,77 - 1,09	617587	0,50 - 0,82 m	30 + 14	2.000	1	42
20-50	1,02 - 1,59	617588	0,75 - 1,32 m	30 + 14	3.600	1	42
20-50	1,27 - 2,09	617589	1,00 - 1,82 m	30 + 14	4.450	1	42
63-225	0,75 - 1,05	617590	0,48 - 0,78 m	30 + 14	2.780	1	42
63-225	1,00 - 1,56	617591	0,73 - 1,29 m	30 + 14	4.200	1	42
63-225	0,98 - 1,79	617592	1,25 - 2,06 m	30 + 14	4.950	1	42

KBS AS

KBS Adapter Kit for Hexagonal Head

Adapter kit to convert the standard KBS installation kit.

- Contents of the kit: sleeve tube with long bottom bell and metal adapter for hexagonal head

d	Order No.	L	Weight [kg]	BX	PU
20 - 50	615868	900	1.490	1	42
63 - 225	615869	900	1.600	1	42

KBS H

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



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

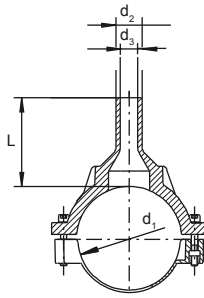
d	RD [m]	Order No.	WS1 [mm]	Weight [kg]	BX	PU
32-50	0,7 - 1,0	616842	30	3.350	1	63
32-50	1,0 - 1,6	616847	30	4.800	1	42
63-225	0,7 - 1,0	616843	30	3.350	1	63
63-225	1,0 - 1,6	616848	30	4.800	1	42
32-50	1,0 - 1,6	616845	14	3.200	1	42
63-225	1,0 - 1,6	616846	14	3.200	1	42



FRIALEN saddles

SA

Saddle with spigot, SDR 11



Saddle with spigot SA SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Saddle component with clamp
- Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249.

Note:

For the pressure-free tapping, there is our drilling device FWAB.

For tapping under pressure, we recommend the drilling tool from Hütz & Baumgarten (www.huetz-baumgarten.de).

If required, please contact our hotline: +49 621 486-2325.

PE 100 SDR 11

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



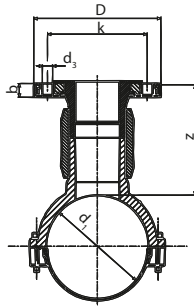
d ₁	d ₂	Order No.	d ₃	Drilling Ø d ₄	L	t	Weight [kg]	BX	PU
63	32	612757	22	20	100	44	0.340	20	360
63	50	612759	37	36	113	55	0.370	20	360
75	50	615020	38	36	82	55	0.430	15	270
90	32	615285	21	20	103	44	0.710	20	160
90	63	612819	50	46	103	63	0.740	20	160
110	32	615334	24	20	125	51	0.820	12	96
110	50	615031	39	36	132	60	0.810	12	96
110	63	612760	49	46	150	81	0.860	12	96
110	90	615411	70	65	115	79	0.970	12	96
125	32	615087	21	20	109	44	0.950	12	96
125	63	612761	47	46	109	63	0.990	12	96
125	90	615412	70	65	116	79	1.080	12	96
125	110	615584	86	84	116	82	1.150	10	80
160	32	612886	21	20	126	44	1.440	8	64
160	63	612762	47	46	140	63	1.520	6	48
160	90	615413	70	65	140	79	1.640	2	36
160	110	615739	86	84	140	82	1.770	2	36
160	125	615585	98	95	140	87	1.890	2	36
180	63	612763	47	46	109	63	1.190	6	48
180	90	615414	70	65	116	79	1.820	2	36
180	110	615948	86	84	136	82	1.960	2	36
180	125	615740	98	95	141	87	2.110	2	36
200	63	612764	47	46	109	63	1.180	5	40
225	63	612765	47	46	109	63	1.210	5	40
225	90	615415	70	65	130	79	1.960	5	40
225	110	616044	86	84	140	82	2.080	5	40
225	125	616045	97	95	146	87	2.240	4	32
225	160	616046	125	123	157	98	2.580	4	32



FRIALEN saddles

SAFL

Spigot saddle with flange outlet, SDR 11



Spigot saddle with flange outlet SAFL SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Saddle component with clamp and flange
- Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8606AU2249

Note:

For pressure-free tapping, we recommend our FWAB drilling device.
 For tapping under pressure, we recommend the drilling tool from Hütz & Baumgarten (www.huetz-baumgarten.de).
 Note the screw tightening torques after specifying the seal manufacturer and/or DVS and the utilisation of a GST seal.
 If required, please contact our hotline: +49 621 486-2325.



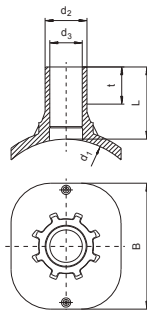
PE 100 SDR 11

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

d ₁	DN	Order No.	D	d _k	Drilling Ø d _a	H	L	Z	Weight [kg]	BX	PU
110	80	616016	204	16.5	65	296	190	180	3.710	3	54
125	80	616017	204	16.5	65	311	205	180	3.940	2	36
160	80	616018	204	16.5	65	346	245	180	4.320	2	36
180	80	616019	204	16.5	65	366	285	180	4.610	2	36
225	80	616020	204	16.5	65	411	284	180	4.720	2	16
160	100	616022	224	16.5	84	346	245	180	5.270	2	36
225	100	616024	224	16.5	84	411	284	180	5.640	2	16

SA TL

Top-loading spigot saddle, SDR 11



Top-loading spigot saddle SA TL SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Universal clamping option (top loading):
 - Safe clamping with FRIATOP
 - Universal adaptation to pipe diameter
 - Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250

Note:

Can only be used with the clamping device FRIATOP (Order No. 613350).
 For pressure-free tapping, we recommend the drilling device from Hütz & Baumgarten (www.huetz-baumgarten.de).
 For tapping under pressure, please contact our hotline: +49 621 486-2325.



PE 100 SDR 11

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

d ₁	d ₂	Order No.	d ₃	Drilling Ø d _a	L	t	Weight [kg]	BX	PU
250-560	32	615465	21	20	109	42	0.600	5	90
250-560	63	615466	47	46	109	56	0.690	5	90

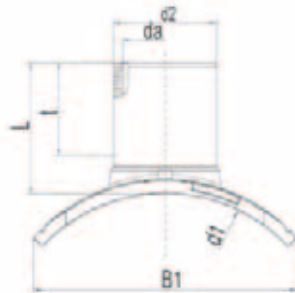


FRIALEN saddles

SA UNI

Saddle with outlet spigot Universal SDR 11

NEW



Saddle with outlet spigot Universal SA UNI SDR 11
Gas, water and H₂

- Maximum pressure: Gas 10 bar, Water 16 bar
- Material: PE 100
- Universal clamping technique (balanced loading):
 - Safe clamping with UNITOP
 - Ideal distribution of force application
 - Perfect adaptation to pipe diameter
- Pressure test of the fusing before tapping possible
- Tapping under pressure possible
- Safety technology

Note:

When processing SA UNI with outlet spigot 90 - 160, the clamping device UNITOP (Order No. 613385) is required.

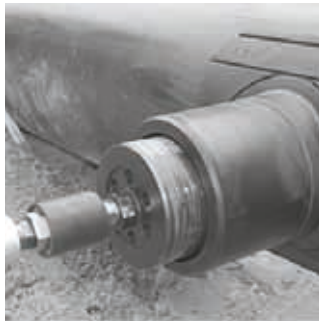
For the outlet spigots 225 / 250, UNITOP 250 (Order No. 613387) is required.

For pressure-free tapping, we recommend our FWAB drilling device.

Pressure test of the fusing before tapping with pressure test adapter FWDPA SA (Order No. 613596).

Also suitable for special dimensions for Close-Fit-Liners.

If you have any questions about this or about tapping under pressure, please contact our Hotline: Tel. +49 621 486-2325.



PE 100 SDR 11

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



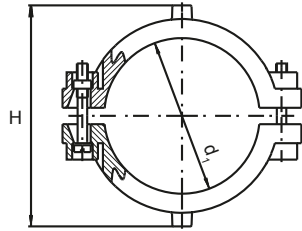
	d ₁	d ₂	Order No.	Drilling Ø d _a	L	t	Weight [kg]	BX	PU
	250-280	90	616553	65	130	79	1.420	5	40
	250-280	110	616554	84	140	82	1.590	5	40
	250-280	125	616555	95	146	87	1.760	5	40
	250-280	160	616556	123	158	98	2.210	5	40
	315-400	90	616557	65	130	79	1.430	5	40
	315-400	110	616558	84	140	82	1.600	5	40
	315-400	125	616559	95	146	87	1.750	5	40
	315-400	160	616560	123	158	98	2.220	5	40
	450-900	90	616561	65	130	79	1.390	5	40
	450-900	110	616562	84	140	82	1.550	5	40
	450-900	125	616563	95	146	87	1.710	5	40
	450-900	160	616564	123	158	98	2.160	5	40
1)	315-355	225	617224	172	226	164	2.210	5	40
1)	315-355	250	617225	187	226	164	2.210	5	40
1)	400-450	225	617226	172	226	164	2.210	5	40
1)	400-450	250	617227	187	226	164	2.210	5	40
1)	500-560	225	617228	172	226	164	2.210	5	40
1)	500-560	250	617229	187	226	164	2.210	5	40
1)	710-900	225	617230	172	226	164	2.210	5	40
1)	710-900	250	617231	187	226	164	2.210	5	40
1)	1000-1200	225	617232	172	226	164	2.210	5	40
1)	1000-1200	250	617233	187	226	164	2.210	5	40

1) NEW



FRIALEN saddles

RS Repair Saddle, SDR 11



Repair saddle RS SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Saddle component with clamp
- Safety technology

Note:

Only apply to minor pipe damage.
The damage must be located within the repair area and not in the fusion zone.

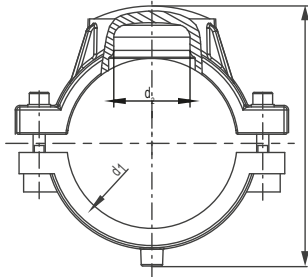
PE 100 SDR 11

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



d ₁	Order No.	H	Weight [kg]	BX	PU
63	612519	106	0.270	20	360

RSV Repair and reinforcement saddle, SDR11



Repair and reinforcement saddle RSV SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- 2 combined saddle components
- Safety technology

Note:

Only apply to minor pipe damage.
The damage must be located within the repair area and not in the fusion zone.

PE 100 SDR 11

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



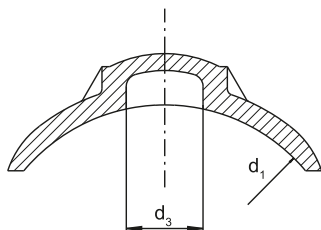
d ₁	d ₂	Order No.	H	t	Weight [kg]	BX	PU
90	50	615164	148	21	0.930	24	192
110	50	615165	170	21	1.160	16	128
125	50	615166	183	21	1.370	15	120
160	50	615168	218	21	1.680	10	80
180	50	615169	238	21	1.810	6	48
200	50	615170	258	21	1.860	5	40
225	50	615171	283	21	1.910	5	40



FRIALEN saddles

RS TL

Repair saddle for top loading, SDR11



Repair saddle Top-Loading RS TL SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Universal clamping option (top loading):
 - Safe clamping with FRIATOP
 - Universal adaptation to pipe diameter
- Safety technology
- DVGW test mark: DV-8611AU2250

Note:

Can only be used with the clamping device FRIATOP (Order No. 613350).
Only apply to minor pipe damage.
The damage must be located within the repair area and not in the fusion zone.



PE 100 SDR 11

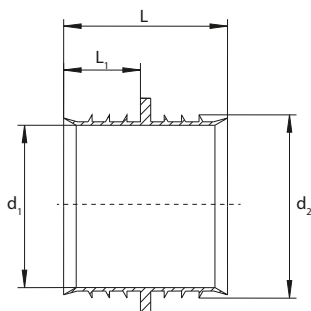
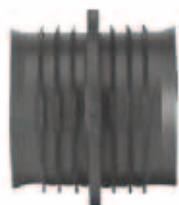
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d ₁	Order No.	d ₃	t	Weight [kg]	BX	PU
250-560	615397	50	20	0.580	10	180

RW

Repair sleeve



Repair sleeve RW

- For the repair of water-house connection pipes in a pressure-free condition.
- Prevents water from entering the fusion zone of the FRIALEN couplers MB or UB.

Note:

Dimension d means: Repair sleeve for pipe d xy.

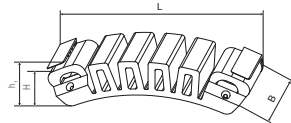
Only suitable for pipe SDR 11

d	d ₁	d ₂	Order No.	L	L ₁	Weight [kg]	BX	PU
32	21	27	615127	35	16	0.010	50	4500
40	28	34	615128	35	16	0.010	50	2500
50	36	42	615129	35	16	0.010	50	2500
63	46	53	615130	47	22	0.020	40	2000



FIXBLOC

Fixation for absorbing axial thrust and tensile forces



Fixation for absorbing axial thrust and tensile forces FIXBLOC

- For the production of a fixed point on a PE pipeline, as a pull-out fuse, installation aid or fixing to pipe supports
- Strength per fixed point up to 40 kN
- Multiple applications possible around the pipe circumference
- Processing is carried out with commercially available tensioning straps with a belt width of 50 mm, which are securely guided by two straps (easily removable)
- Minimum length approx. 3.5 x d pipe (longer for multiple applications)
- If the belt around the pipe circumference is not accessible, the clamping device FIXBLOC FWFB (Order No. 613380), e.g. in the case of a PE liner, which must be anchored relative to a shaft wall.



PE 100

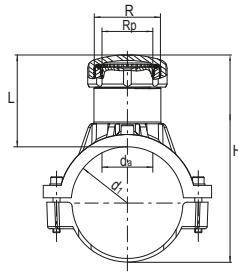
Maximum shear load per FIXBLOC: 40 kN

d_1	Order No.	H	h1	L	Weight [kg]	BX	PU
160 - 1600	680600	40	45	220	0.320	15	750

FRIALEN saddles

SPA

Balloon shut off saddle



Balloon shut off saddle SPA

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 and brass
- Saddle component with clamp
- Safety technology

Note:

Brass female and male threads are anchored in the HD-PE in a non-detachable and non-rotatable manner.

Including brass plug with recessed square. For the accommodation of commercially available balloon setting devices.

Access protection for the dome by means of the supplied screw cap or by fusion on a FRIALEN SPAK (for d 63 by cap DK, Order No. 612310).

When using hydrogen, the SPA Balloon shut off saddle is only in conjunction with the cap SPAK (Order No. 612311).



PE 100 SDR 11

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



	d ₁	R	R _p	Order No.	Drilling Ø d _a	H	L	t	Weight [kg]	BX	PU
1)	63	1 1/2"	1 1/8"	612753	31	151	80	19	0.610	20	360
	90	2 1/2"	2"	612677	56,5	197	104	24	1.390	16	128
	110	2 1/2"	2"	612750	56,5	217	104	24	1.480	12	96
	125	2 1/2"	2"	612751	56,5	232	104	24	1.690	12	96
	160	2 1/2"	2"	612752	56,5	267	104	24	1.830	8	64
	180	2 1/2"	2"	612754	56,5	287	104	24	1.830	7	56
	200	2 1/2"	2"	612755	56,5	307	104	24	1.910	6	48
	225	2 1/2"	2"	612756	56,5	332	104	24	1.920	5	40

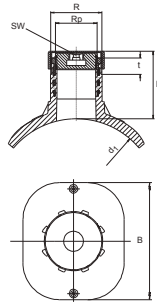
1) SPA d 63 can only be fused with pipes of the SDR level 11.



FRIALEN saddles

SPA TL

Balloon shut off saddle top-loading



Balloon shut off saddle top-loading SPA TL

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 and brass
 - Universal clamping option (top loading):
 - Safe clamping with FRIATOP
- Safety technology

Note:

Can only be used with the clamping device FRIATOP (Order No. 613350). Brass female and male threads are anchored in the HD-PE in a non-detachable and non-rotatable manner.

Including brass plug with recessed square. For the accommodation of commercially available bubble setting devices.

Access protection for the dome by means of the supplied screw cap or by fusion on a FRIALEN SPAK.

When using hydrogen, the SPA balloon shut off saddle is only available in conjunction with the closure cap SPAK (Order No. 612311).

PE 100 SDR 11

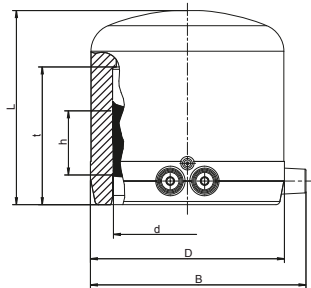
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d ₁	R	Rp	Order No.	Drilling Ø d _a	L	WS [mm]	t	Weight [kg]	BX	PU
250-355 (560)	2 1/2"	2"	615395	56,5	115	19	24	1.360	18	144

SPAK

Cap for balloon shut off saddles



Cap for balloon shut off saddles SPAK

With open-wire technology for optimal heat transfer, large insertion depths, wide fusion zone and cold zone preventing the flow of melt.

When using hydrogen, the cap SPAK with the balloon shut off saddle SPA must be used.

PE 100 SDR 11

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



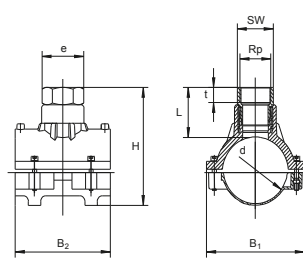
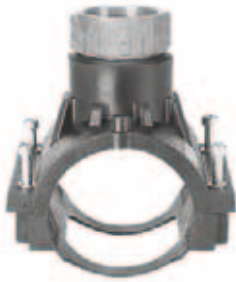
d	Order No.	D	L	t	Weight [kg]	BX	PU
75	612311	99	99	70	0.320	20	640



FRIALEN transition fittings

VAM RG

Valve tapping saddle with transition HD-PE/gunmetal



Valve tapping saddle with transition HD-PE/gunmetal VAM RG

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 and gunmetal (female thread)
- Saddle component with clamp
- Safety technology
- Metals in contact with water according to UBA recommendation

Note:

For accommodating commercially available brass valves.
As a complete solution, we recommend our DAV tapping valve.

PE 100 SDR 11

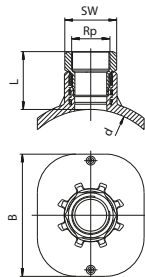
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Rp	Order No.	H	L	t	Weight [kg]	BX	PU
63	1 1/4"	612794	146	75	23	0.730	20	360
63	1 1/2"	612743	149	78	23	0.780	20	360
75	1 1/4"	615213	161	76	23	0.850	15	270
90	1 1/2"	612798	172	68	27	1.380	16	128
90	2"	612778	199	95	27	1.570	16	128
110	1 1/2"	612732	182	70	27	1.520	12	96
110	2"	612733	205	92	27	1.730	12	96
125	1 1/2"	612734	207	68	27	1.610	12	96
125	2"	612735	234	95	27	1.820	12	96
160	1 1/2"	612728	242	68	27	1.810	8	64
160	2"	612729	269	95	27	2.040	8	64
225	2"	612827	322	95	27	2.000	5	40

VAM RG TL

Valve tapping saddle top-loading with HD-PE/gunmetal adapter



Valve tapping saddle with HD-PE/gunmetal adapter VAM RG TL

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100 and gunmetal (female thread)
 - Universal clamping option (top loading):
 - Safe clamping with FRIATOP
- Safety technology
- Metals in contact with water according to UBA (Federal Environment Agency, Germany) recommendation

Note:

Can only be used with the clamping device FRIATOP (Order No. 613350).
For accommodating commercially available brass valves.
Dimension range d 250 - d 560 can be fused as standard in the top loading process.
As a complete solution, we recommend our DAV tapping valve.



PE 100 SDR 11

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



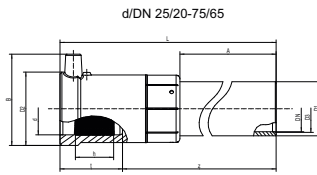
d	Rp	Order No.	L	t	Weight [kg]	BX	PU
250 - 560	2"	615470	90	27	1.510	8	144



FRIALEN transition fittings

USTR

Transition fitting HD-PE coupler / steel pipe



Transition fitting HD-PE coupler/steel pipe USTR

- Gas and H₂
- Working pressure: MOP (gas) 10 bar
- Material: PE 100 and steel (EN 10220 / EN 10216-1 - P235TR2)
- Safety technology

Note:

Anchored the steel side non-detachable and non-rotatable in the PE.
Self-sealing, patented sealing geometry without elastomeric gasket for use in gas applications.

Steel pipe batch characterised by re-stamping of the pipe connection.



PE 100 SDR 11

Maximum permissible working pressure 10 bar (gas)

	d	DN	Order No.	D1	D2	L	t	Weight [kg]	BX	PU
1)	32	25	612780	34	49	387	44	0.810	15	360
1)	40	32	612781	42	58	393	49	1.610	10	240
1)	50	40	612782	48	70	409	54	2.100	8	192
1)	63	50	612783	60	83	410	55	2.020	6	144
1)	90	80	612784	89	130	405	79	5.320	1	77
1)	110	100	612785	114	153	420	82	8.390	1	54
1)	125	100	612786	114	168	425	87	8.710	1	45
	160	150	612787	168	199	484	98	16.830	1	24
	180	150	615030	171	227	500	105	21.250	1	18
	200	200	612795	219	264	480	112	27.020	1	12
	225	200	612370	219	285	505	120	27.350	1	11

1) Pipe seamless, welded ends according to standard: DIN EN 10220/EN 10216-1, ASTM A106/A106M-14



FRIALEN transition fittings

USTRS

Transition fitting HD-PE spigot / steel pipe

Transition fitting HD-PE spigot/steel pipe USTRS

- Gas
- Working pressure: MOP (gas) 10 bar
- Material: PE 100 and steel [ISO 3183 / API5L]



Note:

To be utilised with the fusion couplers UB.
Anchored the steel side non-detachable and non-rotatable in the PE.
Steel pipe batch characterised by re-stamping of the pipe connection.

PE 100 SDR 11

Maximum permissible working pressure 10 bar (gas)



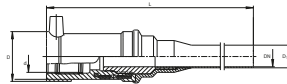
d	DN	Order No.	D	L	L1	w	Z	Weight [kg]	BX	PU
20	15	616632	45	425	80	2,60	15	0.450	21	630
25	20	616633	45	460	90	2,60	35	0.650	21	630
32	25	616634	51	460	95	3,20	35	0.950	18	540
40	32	616635	63	470	100	3,20	35	1.250	12	360
50	40	616636	70	480	110	3,20	35	1.450	8	240
63	50	616637	89	480	110	3,60	35	2.150	6	216
75	65	616638	95	540	130	3,60	35	2.950	2	98
90	80	616639	117	580	140	4,00	45	3.950	2	98
110	100	616640	150	585	145	5,40	45	6.380	2	50
125	100	616641	150	585	150	5,40	45	7.300	2	50
140	125	616642	163	580	155	5,00	45	8.000	1	25
160	150	616643	210	610	160	5,00	45	10.500	1	25
180	150	616644	210	610	170	5,00	45	11.000	1	25
200	200	616645	259	630	155	6,30	45	17.500	1	16
225	200	616646	259	610	145	6,30	45	18.000	1	16
250	250	616647	324	640	140	6,30	45	30.500	1	8
280	250	616648	324	640	160	6,30	45	31.000	1	8
315	300	616649	368	725	220	8,80	45	46.500	1	6
355	300	616650	368	735	260	8,80	45	48.000	1	6
400	400	616651	475	770	190	8,80	45	83.200	1	3
500	500	616652	590	1050	365	10,00	50	127.500	1	2
630	600	616653	735	1100	430	12,70	50	242.000	1	2

UFLG

Transition fitting HD-PE coupler / copper pipe

Transition fitting HD-PE coupler/copper pipe UFLG

- Gas
- Working pressure: MOP (gas) 5 bar
- Material: PE 100 and copper [SF Cu-F25, DIN EN 1057-R250]
- Safety technology



Note:

Secure the copper side in the PE.
Self-sealing, patented sealing geometry without elastomeric gasket for use in gas applications.

PE 100 SDR 11

Maximum permissible working pressure 5 bar (gas)



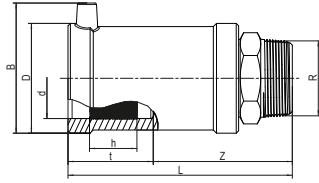
d	DN	Order No.	D	D1	L	t	Z	Weight [kg]	BX	PU
32	20	615733	49	22	340	44	296	0.510	25	750



FRIALEN transition fittings

USTN

Transition fitting HD-PE/steel with male thread



Transition fitting, steel pipe USTN

- Gas and H₂
- Working pressure: MOP (gas) 5 bar
- Material: PE 100 and steel [EN 10278; EN 10277-3 - 11SMn30+C -, thread to EN 10226-1]
- Safety technology

Note:

Anchored the steel side non-detachable and non-rotatable in the PE.
Self-sealing, patented sealing geometry without elastomeric gasket for use in gas applications.
Other thread dimensions available on request.

PE 100 SDR 11

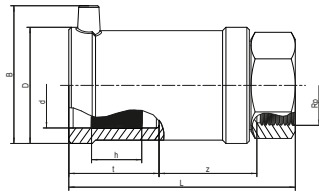
Maximum permissible working pressure 5 bar (gas)



d	R	Order No.	D	L	t	Weight [kg]	BX	PU
32	1"	612580	47	119	42	0.350	20	1080
40	1 1/4"	612582	58	131	46	0.530	20	800
50	1 1/2"	612584	70	146	53	0.700	15	600
63	2"	612586	84	152	53	1.040	10	400

USTM

Transition fitting HD-PE/steel with female thread



Transition fitting steel pipe USTM

- Gas and H₂
- Working pressure: MOP (gas) 5 bar
- Material: PE 100 and steel (EN 10278; EN 10277-3 - 11SMn30+C -, thread to EN 10226-1)
- Safety technology

Note:

Anchored the steel side non-detachable and non-rotatable in the PE.
Self-sealing, patented sealing geometry without elastomeric gasket for use in gas applications.
Other thread dimensions available on request.

PE 100 SDR 11

Maximum permissible working pressure 5 bar (gas)

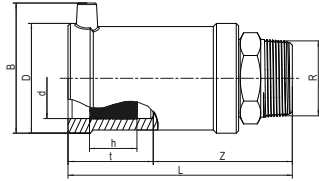


d	Rp	Order No.	D	L	t	Weight [kg]	BX	PU
32	1"	612570	47	112	42	0.350	20	1080
40	1 1/4"	612572	58	121	46	0.510	20	800
50	1 1/2"	612574	70	136	53	0.650	15	600
63	2"	612576	84	141	53	1.020	10	400

FRIALEN transition fittings

MUN

Transition fitting in HD-PE/brass with male thread



Brass pipe transition fitting MUN

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and brass (EN 12168 - CW617N, thread according to EN 10226-1)
- Safety technology

Note:

The brass side is anchored as non-detachable and non-rotatable in PE.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Default: Brass, gunmetal on request.
Other thread dimensions available on request.

PE 100 SDR 11

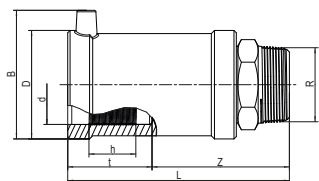
Maximum permissible working pressure 16 bar (water)



d	R	Order No.	D	L	t	Weight [kg]	BX	PU
32	1"	612712	47	112	42	0.320	20	1440
32	1 1/4"	612709	47	120	42	0.400	20	1080
32	1 1/2"	612698	47	121	42	0.450	15	810
40	1"	612721	58	123	46	0.460	20	800
40	1 1/4"	612713	58	126	46	0.490	20	800
40	1 1/2"	612718	58	127	46	0.520	20	800
40	2"	612725	58	132	46	0.680	20	600
50	1"	612719	70	134	53	0.620	15	600
50	1 1/4"	612716	70	136	53	0.620	15	600
50	1 1/2"	612714	70	137	53	0.620	15	600
50	2"	612706	70	147	53	0.760	15	600
63	1 1/4"	612722	84	138	53	0.920	10	400
63	1 1/2"	612717	84	137	53	0.910	10	400
63	2"	612715	84	142	53	0.920	10	400

MUN V2A

Transition fitting HD-PE/V2A with male thread



Transition fitting V2A pipe MUN V2A

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and V2A [EN 10278, EN 10088-3 - 1.4305 -X8CrNiS18-9, thread according to EN 10226-1]
- Safety technology

Note:

V2A side is anchored in the PE so that it cannot be rotated.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Other thread dimensions available on request.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)

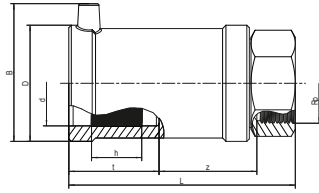


d	R	Order No.	D	L	t	Weight [kg]	BX	PU
40	1"	616516	58	123	46	0.470	20	800
40	1 1/2"	612727	58	127	46	0.500	20	800
50	1 1/2"	612726	70	137	53	0.600	15	600
63	1 1/2"	612705	84	137	53	0.870	10	400
63	2"	612899	84	142	53	0.910	10	400



MUM

Transition fitting HD-PE/gunmetal with female thread



Transition fitting gunmetal pipe MUM

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and gunmetal (EN 1982 - CC499K-GC, thread to EN 10226-1)
- Safety technology

Note:

Gunmetal side is anchored non-detachable and non-rotatable in the PE. Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas. Default: Gunmetal, V2A on request. Other thread dimensions available on request.

PE 100 SDR 11

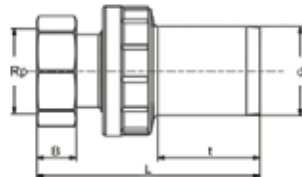
Maximum permissible working pressure 16 bar (water)



d	Rp	Order No.	D	L	t	Weight [kg]	BX	PU
32	1"	612595	47	112	42	0.360	20	1080
40	1 1/4"	612596	58	121	46	0.530	20	800
50	1 1/2"	612692	70	136	53	0.650	15	600
63	1 1/2"	612708	84	141	53	1.100	10	300
63	2"	612693	84	141	53	1.080	10	400

UAM ET

Universal transition adaptor HD-PE/brass with free union nut with female thread



Universal transition adaptor brass pipe UAM ET

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and brass [CW617N or CW612N, ISO 228 thread]

Note:

The brass side is anchored non-detachable and non-rotatable in the PE. With freely rotatable union nut for easy and fast assembly. For use in water areas. Other thread dimensions available on request.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)

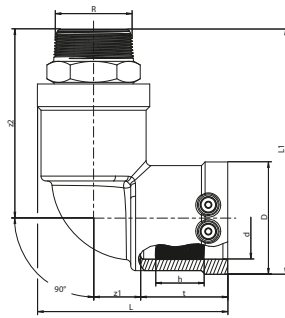


d	Rp	Order No.	L	WS [mm]	t	Weight [kg]	BX	PU
32	1"	616655	120	36	47	0.240	30	1080
50	1 1/2"	616627	150	58	57	0.640	16	576

FRIALEN transition fittings

WUN 90

90° transition elbow HD-PE/brass with external thread



Transition elbow brass pipe WUN 90

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and brass (EN 12168 - CW617N, thread according to EN 10226-1)
- Safety technology

Note:

The brass side is anchored as non-detachable and non-rotatable in PE.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Default: Brass, gunmetal on request.
Other thread dimensions available on request.

PE 100 SDR 11

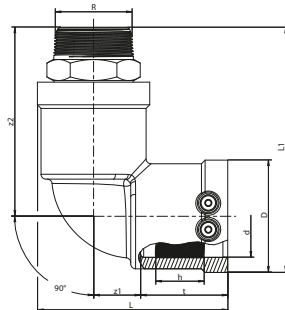
Maximum permissible working pressure 16 bar (water)



d	R	Order No.	D	L	t	Weight [kg]	BX	PU
32	1"	612120	47	85	42	0.350	20	1000
32	1 1/2"	612140	47	94	42	0.480	20	800
40	1"	612127	58	102	46	0.520	15	750
40	1 1/4"	612122	58	102	46	0.530	15	750
40	1 1/2"	612121	58	102	46	0.560	15	750
50	1"	612119	70	118	53	0.680	10	500
50	1 1/4"	612123	70	118	53	0.660	10	500
50	1 1/2"	612124	70	118	53	0.680	10	500
63	1 1/2"	612125	84	128	53	0.990	10	320
63	2"	612126	84	128	53	1.030	10	320

WUN V2A 90

Transition elbow 90° HD-PE/Stainless steel with male thread



Transition elbow V2A pipe WUN V2A 90

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and V2A [EN 10278, EN 10088-3 - 1.4305 -X8CrNiS18-9, thread according to EN 10226-1]
- Safety technology

Note:

V2A side is anchored in the PE so that it cannot be rotated.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Other thread dimensions available on request.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)



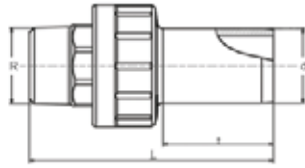
d	R	Order No.	D	L	t	Weight [kg]	BX	PU
40	1"	616514	58	102	45,5	0.540	15	750
40	1 1/2"	612148	58	102	45,5	0.540	15	750
50	1 1/2"	612118	70	118	53	0.650	10	600
63	1 1/2"	612186	84	128	53	0.990	10	320
63	2"	616515	84	128	53	0.950	10	320



FRIALEN transition fittings

UAN

Universal adaptor HD-PE/brass with male thread and PE pipe socket



Universal transition adaptor brass pipe UAN

- Water and gas
- Working pressure: MOP (gas) 5 bar, PFA (water) 16 bar
- Material: PE 100 and brass [CW617N / CW612N, ISO 228 thread]

Note:

The brass side is anchored non-detachable and non-rotatable in the PE.
Installation independent of position possible.
For use in the water and gas sector.
Other thread dimensions and materials on request.

PE 100 SDR 11

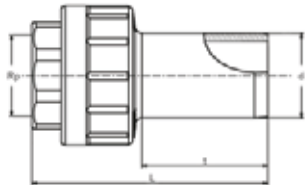
Maximum permissible working pressure 16 bar (water) / 5 bar (gas)



d	R	Order No.	L	WS [mm]	t	Weight [kg]	BX	PU
20	1/2"	616604	95	22	41	0.100	80	4200
25	3/4"	616605	90	28	44	0.150	60	3600
32	1"	616152	105	35	56	0.240	36	1800
40	1"	616160	90	35	56	0.290	20	1200
40	1 1/4"	616153	120	44	56	0.400	20	1200
50	1 1/2"	616154	125	50	57	0.520	16	960
63	1 1/2"	616610	135	50	63	0.620	10	540
63	2"	616155	140	62	63	0.730	10	540
75	2 1/2"	616612	155	77	70	1.200	10	300
90	3"	616613	170	90	78	1.600	6	180
110	4"	616614	200	115	87	2.900	4	120
125	4"	616664	200	115	92	2.950	4	120

UAM

Universal transition adaptor HD-PE/brass with female thread



Universal transition adaptor brass pipe UAM

- Water and gas
- Working pressure: MOP (gas) 5 bar, PFA (water) 16 bar
- Material: PE 100 and brass [CW617N / CW612N, ISO 228 thread]

Note:

The brass side is anchored non-detachable and non-rotatable in the PE.
Installation independent of position possible.
For use in the water and gas sector.
Other thread dimensions and materials on request.

PE 100 SDR 11

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

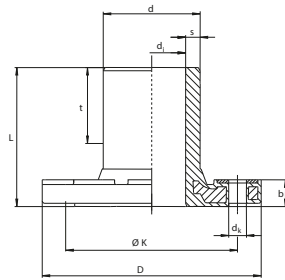


d	Rp	Order No.	L	WS [mm]	t	Weight [kg]	BX	PU
20	1/2"	616615	79	26	41	0.080	80	4800
25	3/4"	616616	77	32	44	0.120	60	3600
32	1"	616156	88	40	47	0.190	36	2160
40	1 1/4"	616157	100	49	56	0.290	20	1200
50	1 1/2"	616158	102	55	57	0.350	16	960
63	1 1/2"	616621	115	55	63	0.450	10	600
63	2"	616159	120	67	63	0.580	10	600
75	2 1/2"	616665	128	82	70	0.760	10	300
90	3"	616623	144	94	78	1.030	10	240
110	4"	616624	161	120	87	1.870	6	180
125	4"	616666	161	120	92	1.990	4	120

FRIALEN transition fittings

EFL

Full faced spigot flange



Flange adapter and flange EFL

- Water and gas
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar (for UK: MOP 7 bar)
- Material: PE 100 and metal insert

Note:

Metal insert in flange in order to prevent cold flow.

Fused side for processing with FRIALEN couplers MB or UB.

When the gasket is selected it shall be suitable for the intended medium and an approval may be required according to national regulations, e.g. for drinking water, gas or H₂. We recommend G-ST seals (Rubber-steel flange gasket).

Note the screw tightening torques after specifying the seal manufacturer or DVS.

Additional washers are required.

PE 100 SDR 11

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

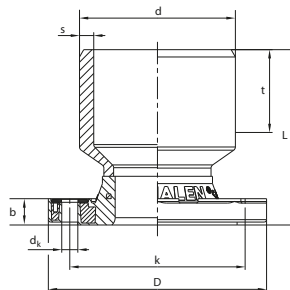


d	DN	Order No.	D	d _i	d _k	L	s	t	Weight [kg]	BX	PU
63	50	615417	169	51	17	105	5,8	53	1.510	5	250
90	80	615418	204	72	17	130	8,2	71	2.550	5	160
110	100	615419	224	87	17	150	10	83	3.310	3	96
125	100	615605	224	101	17	160	11,4	85	3.280	2	64
160	150	615421	288	127	21	190	14,6	120	5.950	2	36
180	150	615927	288	123	21	200	16,4	120	6.660	2	36
1) 225	200	615607	343	180	21	225	20,4	120	9.150	1	27

1) Flange drill hole for PN 10

FLR

Full faced reduced spigot flange



Flange reducer FLR

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100 and metal insert

Note:

Metal insert in flange in order to prevent cold flow.

We recommend GST seals.

Note the screw tightening torques after specifying the seal manufacturer or DVS.

Additional washers are required.

PE 100 SDR 11

Maximum permissible working pressure 16 bar (water)



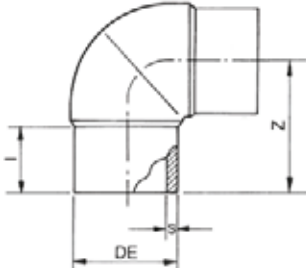
d	DN	Order No.	D	d _k	L	s	t	Weight [kg]	BX	PU
110	80	616065	204	17	161	10	82	3.500	3	96
160	100	616241	224	17	180	14,6	85	4.060	2	64



FRIALEN spigots

PE 34.010.36

PE 100 Elbow 90°, injected, elongated



GDE-SDR17



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

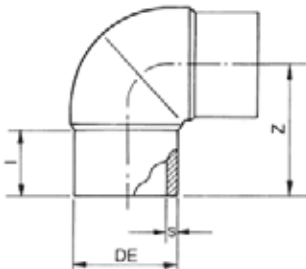
Note:
Suitable for use with FRIALEN coupler.



de	l	Z	Weight [kg]	PU	Commercial Code	Order No.
50	80	108	0.140	40	GDE17050	73401036050
63	67	130	0.190	24	GDE17063	73401036063
75	76	153	0.280	16	GDE17075	73401036075
90	83	173	0.450	12	GDE17090	73401036090
110	84	195	0.770	14	GDE17110	73401036110
125	92	216	1.000	6	GDE17125	73401036125
140	97	237	1.750	5	GDE17140	73401036140
160	103	262	2.300	4	GDE17160	73401036160
180	113	290	3.150	4	GDE17180	73401036180
200	122	317	4.230	5	GDE17200	73401036200
225	130	350	5.000	3	GDE17225	73401036225
250	134	382	7.800	2	GDE17250	73401036250
280	154	430	10.720	2	GDE17280	73401036280
315	153	465	15.810	1	GDE17315	73401036315

PE 34.010.31

PE 100 Elbow 90°, injected, elongated



GDE-SDR11



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.

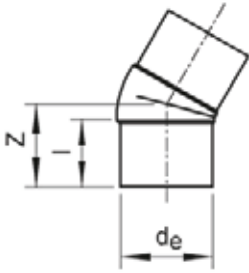


de	l	Z	Weight [kg]	PU	Commercial Code	Order No.
20	52	73	0.030	60	GDE11020	73401031020
25	56	80	0.070	50	GDE11025	73401031025
32	48	79	0.070	20	GDE11032	73401031032
40	52	92	0.060	14	GDE11040	73401031040
50	59	107	0.160	40	GDE11050	73401031050
63	69	131	0.270	24	GDE11063	73401031063
75	76	153	0.420	16	GDE11075	73401031075
90	83	173	0.640	12	GDE11090	73401031090
110	84	195	1.070	14	GDE11110	73401031110
125	92	216	1.450	6	GDE11125	73401031125
140	96	237	2.270	5	GDE11140	73401031140
160	103	262	3.360	4	GDE11160	73401031160
180	115	294	3.600	4	GDE11180	73401031180
200	122	317	5.000	5	GDE11200	73401031200
225	131	351	8.030	3	GDE11225	73401031225
250	133	382	10.140	2	GDE11250	73401031250
280	153	432	16.290	2	GDE11280	73401031280
315	154	471	21.360	1	GDE11315	73401031315

FRIALEN spigots

PE 34.015.36

PE 100 Elbow 45°, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.

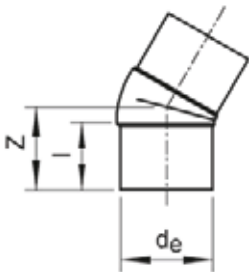
HDE-SDR17



de	l	Z	Weight [kg]	PU	Commercial Code	Order No.
50	61	76	0.090	10	HDE17050	73401536050
63	65	88	0.130	6	HDE17063	73401536063
75	71	90	0.200	24	HDE17075	73401536075
90	83	105	0.340	12	HDE17090	73401536090
110	91	121	0.580	8	HDE17110	73401536110
125	97	137	0.810	6	HDE17125	73401536125
140	120	168	1.280	8	HDE17140	73401536140
160	142	190	1.600	5	HDE17160	73401536160
180	141	196	2.450	4	HDE17180	73401536180
200	152	207	2.340	5	HDE17200	73401536200
225	153	210	4.100	4	HDE17225	73401536225
250	133	220	5.860	3	HDE17250	73401536250
280	142	227	7.650	2	HDE17280	73401536280
315	154	250	10.440	2	HDE17315	73401536315

PE 34.015.31

PE 100 Elbow 45°, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.

HDE-SDR11



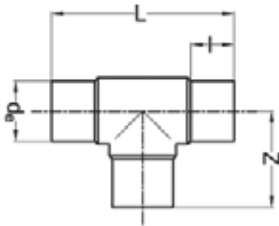
de	l	Z	Weight [kg]	PU	Commercial Code	Order No.
25	57	75	0.030	40	HDE11025	73401531025
32	71	90	0.060	30	HDE11032	73401531032
40	74	95	0.090	16	HDE11040	73401531040
50	62	76	0.110	60	HDE11050	73401531050
63	66	88	0.240	30	HDE11063	73401531063
75	71	90	0.290	25	HDE11075	73401531075
90	83	105	0.480	12	HDE11090	73401531090
110	93	121	0.850	8	HDE11110	73401531110
125	99	137	1.090	6	HDE11125	73401531125
140	121	168	1.760	8	HDE11140	73401531140
160	142	190	2.720	5	HDE11160	73401531160
180	141	196	3.450	4	HDE11180	73401531180
200	153	207	4.750	5	HDE11200	73401531200
225	154	210	6.140	4	HDE11225	73401531225
250	133	220	8.300	3	HDE11250	73401531250
280	144	227	11.040	2	HDE11280	73401531280
315	155	250	14.670	2	HDE11315	73401531315



FRIALEN spigots

PE 34.020.36

PE 100 Tee, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.

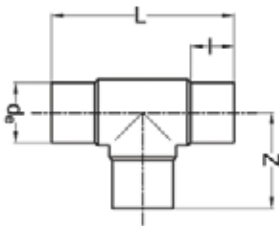
TDE-SDR17



de	L	I	Z	Weight [kg]	PU	Commercial Code	Order No.
50	184	57	90	0.130	6	TDE17050	73402036050
63	214	64	106	0.260	16	TDE17063	73402036063
75	246	72	122	0.400	12	TDE17075	73402036075
90	277	81	137	0.690	12	TDE17090	73402036090
110	321	84	161	1.140	10	TDE17110	73402036110
125	345	100	174	1.980	6	TDE17125	73402036125
140	395	104	197	2.330	4	TDE17140	73402036140
160	410	104	206	3.600	8	TDE17160	73402036160
180	525	141	260	4.880	4	TDE17180	73402036180
200	501	123	250	8.600	3	TDE17200	73402036200
225	555	129	276	8.260	2	TDE17225	73402036225
250	576	132	288	9.380	1	TDE17250	73402036250
280	617	132	309	12.980	1	TDE17280	73402036280
315	695	153	346	17.650	1	TDE17315	73402036315

PE 34.020.31

PE 100 Tee, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.

TDE-SDR11



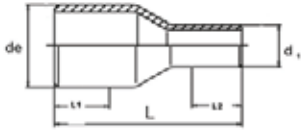
de	L	I	Z	Weight [kg]	PU	Commercial Code	Order No.
20	108	41	54	0.030	10	TDE11020	73402031020
25	120	41	60	0.040	30	TDE11025	73402031025
32	139	46	67	0.060	20	TDE11032	73402031032
40	165	52	82	0.130	10	TDE11040	73402031040
50	184	57	92	0.190	6	TDE11050	73402031050
63	216	65	105	0.040	16	TDE11063	73402031063
75	248	72	122	0.550	12	TDE11075	73402031075
90	277	80	137	0.940	12	TDE11090	73402031090
110	321	88	162	1.580	10	TDE11110	73402031110
125	350	98	176	2.240	6	TDE11125	73402031125
140	399	104	200	2.910	4	TDE11140	73402031140
160	413	104	206	4.290	8	TDE11160	73402031160
180	528	143	260	6.890	12	TDE11180	73402031180
200	505	124	253	8.330	3	TDE11200	73402031200
225	559	129	278	11.700	3	TDE11225	73402031225
250	582	132	291	13.900	1	TDE11250	73402031250
280	622	133	312	18.860	1	TDE11280	73402031280
315	690	153	351	26.150	1	TDE11315	73402031315



FRIALEN spigots

PE 34.091.36

PE 100 Reducer, concentric, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:

Suitable for use with FRIALEN coupler.



RDE-SDR17

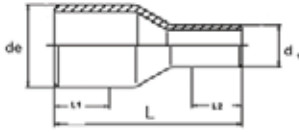
de	d ₁	L	l ₁	l ₂	Weight [kg]	PU	Commercial Code	Order No.
63	50	152	64	58	0.100	10	RDE17063050	73409136063050
75	63	166	70	63	0.160	20	RDE17075063	73409136075063
90	63	182	79	63	0.250	20	RDE17090063	73409136090063
90	75	185	80	63	0.240	20	RDE17090075	73409136090075
110	75	183	83	73	0.320	16	RDE17110075	73409136110075
110	90	185	83	80	0.390	14	RDE17110090	73409136110090
125	63	200	90	68	0.470	1	RDE17125063	73409136125063
125	90	200	90	81	0.460	9	RDE17125090	73409136125090
125	110	200	91	90	0.500	9	RDE17125110	73409136125110
140	90	235	112	86	0.630	12	RDE17140090	73409136140090
140	110	237	114	91	0.690	12	RDE17140110	73409136140110
140	125	235	117	96	0.740	14	RDE17140125	73409136140125
160	90	254	109	84	0.820	10	RDE17160090	73409136160090
160	110	254	110	89	0.890	10	RDE17160110	73409136160110
160	125	254	110	95	0.960	10	RDE17160125	73409136160125
160	140	254	110	106	1.010	10	RDE17160140	73409136160140
180	125	250	105	87	1.210	8	RDE17180125	73409136180125
180	140	277	123	114	1.210	8	RDE17180140	73409136180140
180	160	279	126	125	1.450	8	RDE17180160	73409136180160
200	140	279	123	114	1.590	6	RDE17200140	73409136200140
200	160	278	122	124	1.650	6	RDE17200160	73409136200160
225	160	275	125	118	2.180	4	RDE17225160	73409136225160
225	180	275	125	118	2.140	4	RDE17225180	73409136225180
250	160	308	151	98	2.480	3	RDE17250160	73409136250160
250	180	316	153	105	2.850	6	RDE17250180	73409136250180
250	200	325	154	113	3.970	2	RDE17250200	73409136250200
250	225	330	155	122	4.370	2	RDE17250225	73409136250225
280	200	330	142	116	3.880	2	RDE17280200	73409136280200
280	225	335	140	124	4.100	2	RDE17280225	73409136280225
280	250	340	139	134	4.420	2	RDE17280250	73409136280250
315	225	371	152	125	5.290	2	RDE17315225	73409136315225
315	250	367	151	133	5.640	2	RDE17315250	73409136315250
315	280	369	150	140	5.950	4	RDE17315280	73409136315280



FRIALEN spigots

PE 34.091.31

PE 100 Reducer, concentric, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:

Suitable for use with FRIALEN coupler.

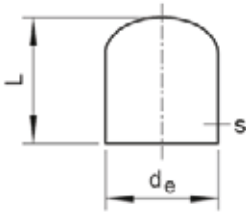


RDE-SDR11

de	d ₁	L	l ₁	l ₂	Weight [kg]	PU	Commercial Code	Order No.
25	20	90	41	41	0.020	90	RDE11025020	73409131025020
32	20	101	44	41	0.030	270	RDE11032020	73409131032020
32	25	100	44	41	0.030	60	RDE11032025	73409131032025
40	25	104	49	41	0.040	40	RDE11040025	73409131040025
40	32	105	49	44	0.040	120	RDE11040032	73409131040032
50	25	118	55	43	0.060	100	RDE11050025	73409131050025
50	32	132	57	47	0.070	20	RDE11050032	73409131050032
50	40	134	55	51	0.080	20	RDE11050040	73409131050040
63	32	144	63	44	0.110	60	RDE11063032	73409131063032
63	40	147	63	49	0.120	10	RDE11063040	73409131063040
63	50	152	64	58	0.140	50	RDE11063050	73409131063050
75	50	148	70	57	0.170	20	RDE11075050	73409131075050
75	63	171	70	65	0.210	30	RDE11075063	73409131075063
90	50	174	79	57	0.280	20	RDE11090050	73409131090050
90	63	182	79	70	0.300	20	RDE11090063	73409131090063
90	75	180	79	70	0.350	20	RDE11090075	73409131090075
110	63	185	84	69	0.450	16	RDE11110063	73409131110063
110	75	185	84	74	0.480	16	RDE11110075	73409131110075
110	90	186	84	81	0.550	16	RDE11110090	73409131110090
125	63	200	91	69	0.640	10	RDE11125063	73409131125063
125	90	200	87	79	0.660	9	RDE11125090	73409131125090
125	110	200	87	82	0.760	9	RDE11125110	73409131125110
140	90	237	112	86	0.900	12	RDE11140090	73409131140090
140	110	230	116	90	1.040	12	RDE11140110	73409131140110
140	125	235	117	96	0.980	12	RDE11140125	73409131140125
160	90	254	109	84	1.100	10	RDE11160090	73409131160090
160	110	254	110	89	1.300	10	RDE11160110	73409131160110
160	125	254	110	95	1.300	10	RDE11160125	73409131160125
160	140	254	110	106	1.580	10	RDE11160140	73409131160140
180	125	245	105	87	1.730	8	RDE11180125	73409131180125
180	160	279	126	125	2.100	8	RDE11180160	73409131180160
200	160	277	122	122	2.200	1	RDE11200160	73409131200160
225	160	295	132	123	3.070	4	RDE11225160	73409131225160
225	180	285	130	118	3.470	4	RDE11225180	73409131225180
250	160	308	149	100	4.070	3	RDE11250160	73409131250160
250	180	316	151	105	4.270	3	RDE11250180	73409131250180
250	200	324	151	116	4.580	2	RDE11250200	73409131250200
250	225	330	155	122	5.280	2	RDE11250225	73409131250225
280	200	345	140	116	6.700	2	RDE11280200	73409131280200
280	225	335	142	122	6.090	2	RDE11280225	73409131280225
280	250	340	139	135	6.700	2	RDE11280250	73409131280250
315	225	365	150	125	7.960	4	RDE11315225	73409131315225
315	250	365	150	134	8.470	4	RDE11315250	73409131315250
315	280	365	150	145	5.160	4	RDE11315280	73409131315280

FRIALEN spigots

PE 34.096.36 PE 100 End cap, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

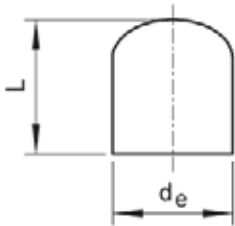
Note:
Suitable for use with FRIALEN coupler.



CDE-SDR17

de	L	I	s	Weight [kg]	PU	Commercial Code	Order No.
50	70	59	3	0.040	40	CDE17050	73409636050
125	127	92	7,4	0.630	18	CDE17125	73409636125
140	136	97	8,3	0.480	12	CDE17140	73409636140
160	155	107	9,5	0.740	6	CDE17160	73409636160
180	166	114	10,7	1.660	12	CDE17180	73409636180
200	179	117	11,9	1.490	10	CDE17200	73409636200
225	203	127	13,4	1.800	6	CDE17225	73409636225
250	216	140	14,8	4.760	4	CDE17250	73409636250
280	238	149	16,6	3.290	6	CDE17280	73409636280
315	258	158	18,7	4.560	2	CDE17315	73409636315

PE 34.096.31 PE 100 End cap, injected, elongated



- for butt fusion and electrofusion welding units
- moulded
- with long spigots

Note:
Suitable for use with FRIALEN coupler.



CDE-SDR11

de	L	I	Weight [kg]	PU	Commercial Code	Order No.
25	52	40	0.010	180	CDE11025	73409631025
32	58	44	0.020	100	CDE11032	73409631032
40	67	50	0.030	50	CDE11040	73409631040
50	75	55	0.050	20	CDE11050	73409631050
63	85	62	0.100	15	CDE11063	73409631063
75	95	63	0.140	10	CDE11075	73409631075
90	110	79	0.230	36	CDE11090	73409631090
110	127	88	0.400	18	CDE11110	73409631110
125	128	93	0.530	18	CDE11125	73409631125
140	136	97	0.790	12	CDE11140	73409631140
160	156	108	2.250	6	CDE11160	73409631160
180	167	113	1.430	12	CDE11180	73409631180
200	180	117	1.930	10	CDE11200	73409631200
225	203	127	2.250	6	CDE11225	73409631225
250	217	138	5.250	4	CDE11250	73409631250
280	239	151	4.820	6	CDE11280	73409631280
315	256	158	6.860	2	CDE11315	73409631315





FRIAFIT Sewage system

The closed PE system for sewage, wastewater, storm and grey water pipe systems.



FRIALOAD – it's so easy

Vacuum clamping is the future.

The optimal clamping technology for all saddles

Thanks to vacuum technology, FRIALOAD makes it easier, faster and safer to clamp saddles of all types than ever before. Cumbersome tensioning of belts? Time-consuming lifting by hand? FRIALOAD saves all this work. Everything is easy – with a solution that is suitable for a wide variety of saddles.

FRIALOAD is so easy

The battery-powered PUMP creates a vacuum and maintains it as

needed. The saddle is sealed with the help of two PLATES, possible for saddle outlets with diameters from d 160 to d 400. The tightness can be tested directly on site.

Compelling advantages for the user

FRIALOAD offers more efficiency and ease at the construction site. It is easy to carry and can be operated independently of other power sources thanks to its rechargeable battery. Installation time is reduced consid-

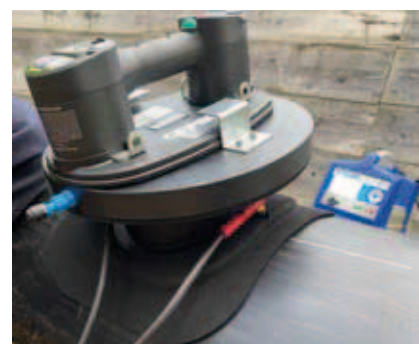
erably because it is not necessary to tighten any belts. In addition, only a small part of the pipeline needs to be accessible, making large-scale excavations unnecessary. Safety and quality also increase. The vacuum ensures a uniform distribution of pressure during fusion and in the cooling phase, and thus a reliable result.



The self-adhesive rubber mat seals the saddle on an ASA VL d160 pipe.



Simple operation of the vacuum PUMP.



The vacuum is maintained while fusing.

How construction companies benefit



Fast processing:

Vacuum technology saves time and money



Easy handling:

Universal clamping technology for all saddles



Safe application:

Leak test is possible directly



Easy use:

Compact equipment, independent of power sources

How engineering offices benefit



Reliable application:

No complaints due to incorrect laying and other errors



Satisfied developers:

Safe construction progress is guaranteed



High-quality work:

Direct quality inspection by vacuum minimises defects



Efficient support:

Less instruction time on the construction site

Find out more on our website:

<https://www.aliaxis.de/en/products/friatools/friaload>



Your contact

Kai Büssecker
kai.buessecker@aliaxis.com



Processing instructions and additional information

The processing takes place according to our assembly instructions, which are also available for download on the Internet at www.aliaxis.de.

You can also find further information about the products and their processing, approvals, publications as well as seminar dates and contact persons via the navigation.

Conformity

The FRIAFIT sewage system made of PE 100 complies with EN 12666 and is therefore regarded as a regulated construction product. Therefore, certification or 3rd party inspection is not required.

Fusibility

FRIAFIT safety fittings can be fused with SDR levels 33 to 17. Other levels of SDR can be processed on request.

Please also note the details of the respective SDR fusibility, which are indicated on the bar code label of the fitting and further binding labels directly on the product.

Please contact our application technology when you want to process thin-walled pipes > SDR33.

FRIAFIT safety fittings can be processed with pipes made of PE 100 and PE 100-RC, PE 80 according to EN 12666, DIN 8074/75, EN 12201-2, ISO 4427-2.

For pipes made of other PE material types, e.g. PE-Xa, PE-RT, PE-EL please request confirmation of processability.

Processing the FRIAFIT safety fittings is possible with FRIAMAT fusion units at ambient temperatures between -10 °C and +45 °C.

In the case of material transition joints, the material- or system-specific standards and assembly guidelines also apply.

Please read our assembly instructions for any restrictions regarding installation, laying as well as processing of FRIAFIT safety fittings in general. Our customer service department and our field application technicians will also be pleased to answer any questions.

Pressure resistance

The FRIAFIT sewage system is designed for non-pressure pipes. According to DIN EN 1610, the test pressure is maximum 0.5 bar.

FRIAFIT sewage bends ABM/ABMS and the sewage saddles ASA VL 160/225 and ASA UNI are designed for pressure pipe systems with a permanent working pressure of maximum 2,5 bar.

The pressure resistance of FRIALEN safety fittings and FRIAFIT couplers AM made of PE 100 is determined by the SDR (standard dimension ratio) designation.

$SDR = \text{pipe outside } \varnothing d / \text{pipe wall thickness } s$

The current standards, as listed under chapter „fusibility“, are decisive for this. Taking into account the design factor C (calculation coefficient for components made of PE and the reference temperature of 20 °C), the following pressure levels result:

Fitting material: PE 100	Water	Gas
SDR	Maximum operating (PN or PFA) in bar at C = 1.25	Maximum working pressure in bar at C = 2
26	6	(4)
17	10	5
11	16	10
9	20	-
7,4	25	-

Fusion process

FRIAFIT safety fittings can be processed with universal electrofusion control units, e.g. the FRIAMAT series. The fusion parameters are automatically transmitted by the fitting barcode.

Cooling times

FRIAFIT socket fitting, e.g. AM couplers, manhole connectors AEM, bends ABS and also FIXBLOC restraint:

The cooling times (CT) indicated on the bar codes are understood as times until the movement of the fused joint.

FRIAFIT sewage saddles ASA VL 160/225, ASA UNI and transition saddle ASA VL KG 160:

The cooling time indicated on the bar code of the saddle is understood as the time until drilling.

For further details, please refer to our assembly instructions.

Statics

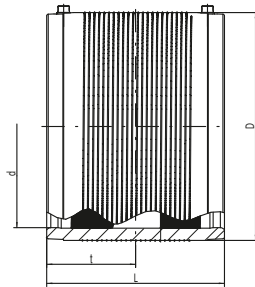
The structural calculations for of the HD-PE channel pipe must be executed in each individual case by the respective pipe manufacturer or engineering office, depending on the ambient conditions.

The annular stiffness of the pipe connection, which is fused with FRIAFIT couplers, is in any case higher than the annular stiffness of the pipe inserted.



AM

Coupler without inner stop, SDR 17



Coupler without inner stop, SDR 17

- For connecting water and sewage pipes made of HD-PE
- Safety technology
- For processing without holding devices
- With pin indicator for visual inspection of the fusion
- DVGW test mark: DV-8606BO6114 (d 110 - d 225)

Note:

For use with close-fit liners, please contact our hotline +49 621 486-2325.

PE 100 SDR 17

Maximum permissible working pressure 10 bar (water / sewage)

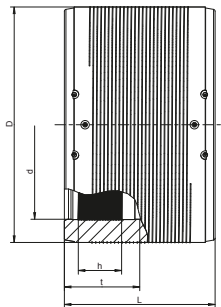


d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
110	680001	17 - 33	130	160	80	0.540	24	192
125	680013	17 - 33	146	160	80	0.630	22	176
160	680002	17 - 33	184	180	90	1.100	12	96
180	680003	17 - 33	207	180	90	1.320	8	64
200	680004	17 - 33	236	180	90	2.070	1	75
225	680005	17 - 33	263	200	100	2.760	1	52
250	680006	17 - 33	282	220	110	2.200	1	44
280	680007	17 - 33	316	220	110	3.700	1	32
315	680008	17 - 33	355	220	110	4.750	1	24
355	680009	17 - 33	400	220	110	5.900	1	24
400	680010	17 - 33	450	220	110	7.400	1	12
450	680011	17 - 33	506	270	135	11.310	1	6
1)	500	680012	17 - 33	562	270	14.750	1	4

1) separate fusion zones

UB SDR 17

Coupler without inner stop, SDR 17



Coupler UB SDR 17 without inner stop

- Gas and water
- Working pressure: MOP (gas) 5 bar, PFA (water) 10 bar
- Material: PE 100
- Safety technology
- Separate fusion zone from d 400
- Large insertion depth for good pipe routing (no holding devices required)
- DVGW test mark: DV-8611AU2250 and DW-8610CN0420

Note

From dimension d 560 with preheating technology and from dimension d 1000, only one FRIAMAT XL is to be utilised, which is available as a loan device with Order No. 613091.

PE 100 SDR 17

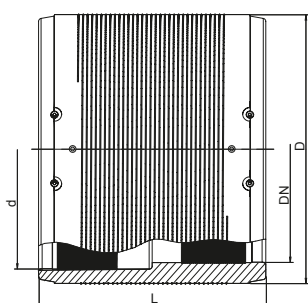
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)



d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
560	615706	17 - 33	632	630	77	380	190	24.800	1	2
630	615726	17 - 33	712	710	101	420	210	34.870	1	2
710	615994	17 - 33	802	800	112	442	221	47.500	1	2
800	616290	17 - 33	902	900	137	500	250	65.900	1	1
900	616345	17 - 33	1026	1024	110	500	250	91.500	1	1
1000	616403	17 - 33	1132	1130	129	610	305	121.000	1	1
1200	616416	17 - 33	1358	1356	155	670	335	205.000	1	1

FRIALEN couplers

REM SDR 17 Reducer, SDR 17 for Relining



Reducer REM, SDR 17 for Relining

- Gas and water
- Working pressure: MOP (gas) 5 bar, PFA (water) 10 bar
- Material: PE 100
- Problem solver for pipe refurbishment work (relining)
- Safety technology
- Large insertion depth for good pipe routing (no holding devices required)
- Separate fusion zone
- Preheating technology

PE 100 SDR 17

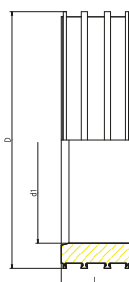
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)



d	DN	Order No.	SDR range	B	D	h1	L	t	Weight [kg]	BX	PU
160	150	615571	17 - 26	199	190	38	180	90	1.550	12	96
315	300	615576	17 - 26	355	355	78	300	150	7.950	1	18

ASF

Shaft lining adapter for prefabricated concrete sewage inspection chambers



Shaft lining adapter for prefabricated concrete sewage inspection chambers ASF

- Connecting element between concrete prefabricated manhole and sewage insert sleeve AEM
- Reversed anchoring webs (T-section) on the entire circumferential width always ensure a firm and tight fit in the concrete
- Defined internal surface and fitting ratio for reliable system seal with AEM
- Stable internal diameter due to large wall thickness
- Flush closure (inside and outside) in the concrete shaft sub-section according to DIN 4034

PE 100

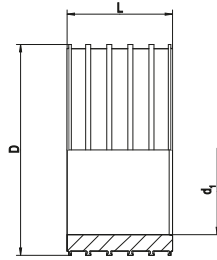
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

Pipe	d ₁	Order No.	D	L	Weight [kg]	BX	PU
110	134	680401	200	135	1.690	12	96
160	190	680402	250	135	1.930	8	64
180	218	680403	280	135	2.250	6	48
200	250	680404	315	135	2.720	4	32
225	280	680405	355	135	3.690	4	32
280	316	680407	400	135	4.810	4	32
315	357	680408	450	135	6.160	1	18
355	402	680409	500	135	7.350	1	18
400	452	680410	560	135	9.280	1	12
450	502	680411	630	135	12.660	3	6
500	562	680414	670	135	11.300	3	6
560	628	680412	710	135	8.760	3	6
630	713	680413	800	135	10.700	3	6



ASFL

Shaft lining adapter for sewage inspection chambers L = 250 mm



Shaft lining adapter for sewage inspection chambers L = 250 mm ASFL

- Connecting element between a brick shaft or concrete shaft and FRIAFIT sewage insert sleeve AEM for installation on the construction site
- Reversed anchoring webs (T-section) on the entire circumferential width ensure a firm and tight fit in the shaft
- Defined internal surface and fitting ratio for reliable system seal with AEM
- Stable internal diameter due to large wall thickness

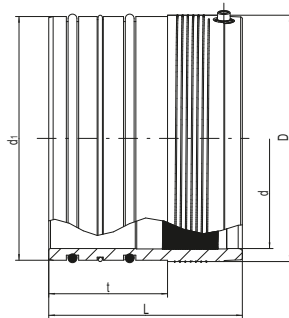
PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

Pipe	d ₁	Order No.	D	L	Weight [kg]	BX	PU
225	280	680505	355	250	4.670	2	16
250	280	680505	355	250	4.670	2	16
280	316	680507	400	250	6.650	2	16
315	357	680508	450	250	8.750	1	9
355	402	680509	500	250	11.050	1	6
450	502	680511	630	250	23.430	1	2
560	628	680512	710	250	16.120	1	2
630	713	680513	800	250	20.340	1	2

AEM

Plug-in coupler for shaft lining adapter



Plug-in coupler for shaft lining adapter AEM

- For the articulated connection of HD-PE pipes into ducts in accordance with DIN 4034 or DWA-A 157 together with the FRIAFIT adapter ASF/ ASFL
- With two elastomeric sealing rings as hinge for optimum compression
- With water-swellaible sealing ring Q for additional safety
- Connection side to HD-PE pipe with open-wire technology for optimal heat transfer for use without holding devices
- Safety technology
- Level transition to chamber sole

Note:

Also available with NBR seals (handling of substances hazardous to water according to AwSV, application WHG e.g. grease and coalescence separators): Stock status 3.

PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

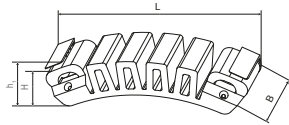
d	d ₁	Order No.	D	L	t	Weight [kg]	BX	PU
110	131	680201	133	165	135	0.740	8	144
160	187	680202	193	225	135	1.950	8	64
180	215	680203	225	220	135	3.100	1	54
200	247	680204	250	220	135	3.500	1	56
225	277	680205	280	220	135	4.600	1	32
250	277	680206	280	220	135	2.500	1	32
280	313	680207	315	220	135	3.600	1	32
315	354	680208	355	220	135	4.350	1	24
355	399	680209	400	220	135	5.800	1	20
400	449	680210	450	220	135	8.300	1	12
450	499	680211	500	220	135	8.900	1	8
500	559	680214	562	220	135	11.050	1	8
1) 560	624	680212	630	220	135	13.400	2	4
1) 630	709	680213	710	270	135	22.400	1	3

1) with pre-heating technology for optimum gap bridging



FIXBLOC

Fixation for absorbing axial thrust and tensile forces



Fixation for absorbing axial thrust and tensile forces FIXBLOC

- For the production of a fixed point on a PE pipeline, as a pull-out fuse, installation aid or fixing to pipe supports
- Strength per fixed point up to 40 kN
- Multiple applications possible around the pipe circumference
- Processing is carried out with commercially available tensioning straps with a belt width of 50 mm, which are securely guided by two straps (easily removable)
- Minimum length approx. 3.5 x d pipe (longer for multiple applications)
- If the belt around the pipe circumference is not accessible, the clamping device FIXBLOC FWFB (Order No. 613380), e.g. in the case of a PE liner, which must be anchored relative to a shaft wall.



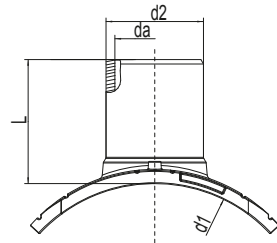
PE 100

Maximum shear load per FIXBLOC: 40 kN

d ₁	Order No.	B	H	h1	L	Weight [kg]	BX	PU
160 - 1600	680600	60	40	45	220	0.320	15	750

ASA UNI

Spigot saddle SDR 17

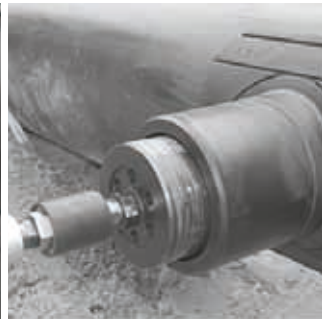


Spigot saddle with outlet spigot ASA UNI, SDR 17

- For the connection of a branch pipe into PE pipes without pressure or under working pressure
- Compact component made of HD-PE saddle with safety technology
- Outlet spigot for processing with FRIAFIT couplers AM
- For variable adaptation to all pipe diameters in the specified range by means of clamping device
- With pin indicator for visual inspection of the fusion

Note:

Can only be used with clamping device UNITOP (Order No. 613385) and clamping adaptor for outlet SDR 17 (Order No. 613839).
For pressure-free tapping, we recommend our drilling equipment FWAB (Order No. 613838).



PE 100

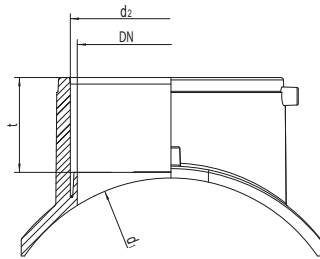
Maximum permissible working pressure 2.5 bar (sewage)

d ₁	d ₂	Order No.	Weight [kg]	BX	PU
630-900	160	682639	1.570	5	40



ASA VL 160

Vacuum-loading sewage saddle



Vacuum-loading sewage saddle ASA VL 160, SDR 17

- Compact component made from HD-PE with integrated fusion coupler in the outlet (d 160)
- For a connection for connecting pipes to existing PE main channel
- Safety technology

Note:

Can only be fused with the clamping system FRIALOAD.

Components: PUMP (Order No. 613810), PLATE (Order No. 617372) and FWAB ASA VL 160/450 (Order No.613846) or FWAB ASA VL 160/710 (Order No. 613816).

For installation on close-fit liners please contact our hotline +49 621 486-2325.



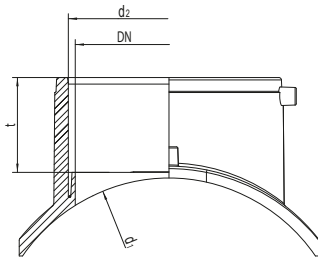
PE 100

Maximum permissible working pressure 2.5 bar

	d ₁	d ₂	DN	Order No.	t	Weight [kg]	BX	PU
	200	160	150	682618	76	0.990	8	64
1)	225	160	150	682613	76	0.950	8	64
	250	160	150	682614	76	0.810	10	80
	280	160	150	682614	76	0.810	10	80
	315	160	150	682649	76	0.990	10	80
	355	160	150	682620	76	0.960	10	80
	400	160	150	682621	76	0.900	10	80
	450	160	150	682616	76	0.890	10	80
	500/560/630	160	150	682622	76	0.900	10	80

1) When using d 250 pipes please contact the hotline +49 621 486-1896.

ASA VL KG 160 Vacuum-loading transition saddle



Transition saddle, Vacuum-Loading ASA VL KG 160, SDR 17

- Compact component made from HD-PE with integral socket in the outlet (d 160)
- For connecting connecting pipes made of PVC/PP DN 150 to existing PE main channel
- Safety technology

Note:

Can only be fused with the clamping system FRIALOAD.

Components: PUMP (Order No. 613810), PLATE (Order No. 617372) and FWAB ASA VL 160/450 (Order No.613846) or FWAB ASA VL 160/710 (Order No. 613816).

For installation on close-fit liners and pipes d 560/d 630, please contact our hotline +49 621 486-2325.



PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

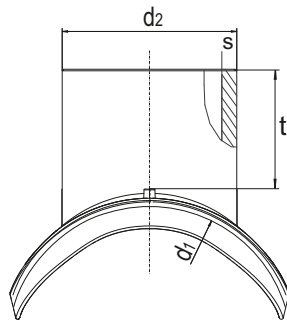
	d ₁	d ₂	DN	Order No.	t	Weight [kg]	BX	PU
1)	225	160	150	682624	76	1.050	8	64
	280	160	150	682625	76	1.040	10	80
	315	160	150	682626	76	1.060	10	80
	355	160	150	682627	76	1.060	10	80
	450	160	150	682628	76	0.990	10	80
	500/560/630	160	150	682629	76	0.940	10	80

1) When using d 250 pipes please contact the hotline +49 621 486-1896.



ASA VL 225

Vacuum-loading sewage saddle



Sewage saddle vacuum loading ASA VL 225, SDR 17

- For the integration of large-volume branch pipes to collectors made of HD-PE with little effort, minimal foundation engineering and without interruption of operation
- HD-PE saddle with safety technology
- When using SDR 17/17,6 pipes, the outlet spigot d 225 provide a passage with an equal base
- Can be fused with FRIAFIT couplers AM or transition socket AMKG d 225 on PVC/PP DN 200
- Innovative vacuum clamping technology for reliable bridging of even large pipe ovality and shape deviations, which additionally provides the possibility of a tightness test before drilling



Note:

Can only be fused with the clamping system FRIALOAD.
 Components: PUMP (Order No. 613810), PLATE (Order No. 617372) and FWAB ASA VL d 225 (Order No 613835).
 The ASA VL assembly aid (Order No. 613371) is also required for cross-dimensional processing.

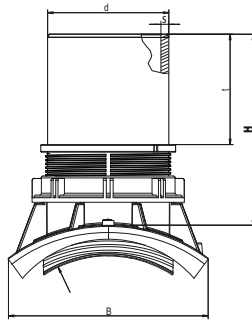
PE 100

Maximum permissible working pressure 2.5 bar (sewage)

d ₁	d ₂	Order No.	t	s	Weight [kg]	BX	PU
355	225	682640	144	13,4	3.090	1	4
450	225	682641	144	13,4	3.090	1	6
560	225	682642	144	13,4	3.090	1	6
630	225	682643	144	13,4	3.090	1	6
Cross-dimension processing							
Ø pipe			d2		Order No.		
315 400			225		682640		
500			225		682641		
710			225		682643		

ASA MULTI

Connecting spigot to clay and concrete pipes



Connecting spigot to clay and concrete pipes ASA MULTI

- For the connection of fused, root-proof HD-PE connection pipes to clay or concrete pipes
- For reinstallation as well as refurbishment without separation or complete opening of the main trench
- When using SDR 17/17,6 pipes, the outlet connection d 160 offers a passage with the same sole
- Bright inner surface of the spigot for optimum visibility when driving through the camera
- Can be fused with FRIAFIT coupler AM or FRIAFIT bends ABM/ABMS

Note:

For installation, the ASA MULTI MS assembly key (Order No. 682660) will be required.

PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

	Short text	d	Order No.	B	H	t	s	Weight [kg]	BX	PU
1)	Clay pipes DN 250	160	682650	265	250	146	9,5	2.700	5	40
2)	Clay pipes DN 300/350	160	682651	265	250	146	9,5	2.800	5	40
3)	Concrete DN 250/300	160	682651	265	250	146	9,5	2.800	5	40

- 1) Suitable for connection to clay pipes DN 250 N/H (standard and high load series EN 295)
- 2) Suitable for connection to clay pipes DN 300 / DN 350 N/H (standard and high load series EN 295)
- 3) Suitable for connection to concrete pipes DN 250 / DN 300 (EN 1916)

ASA MULTI MS

Assembly key

Assembly key ASA MULTI MS

- For secure and fast installation of FRIAFIT connector spigots ASA MULTI

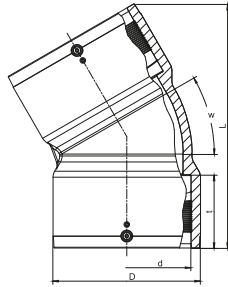


Order No.	Weight [kg]	BX	PU
682660	0.150	20	100



ABM

Sewage bend



Sewage bend (coupler/coupler) ABM

- Low space requirement through compact design
- The elbow gradations 15°, 30°, 45° enable comfortable services routing
- Couplers integrated on both sides to reduce assembly time with safety technology
- The smooth and hydraulically optimised internal contour provides a equal-base passage when utilising SDR 17/17.6 pipes
- Bright surface finish for optimum visibility when driving through with a camera
- With pin indicator for visual inspection of the fusion

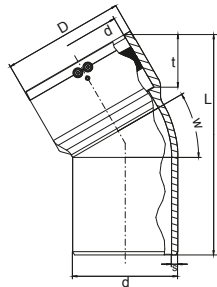
PE 100

Maximum permissible working pressure 2.5 bar

d	w	Order No.	D	L	t	Weight [kg]	BX	PU
160	15°	681100	185	279	92	1.810	6	48
160	30°	681101	185	306	92	2.050	6	48
160	45°	681102	185	320	92	2.060	6	48

ABMS

Sewage bend (one-side spigot end)



Sewage bend (one-side spigot end) ABMS

- Low space requirement through compact design. The gradations 15°, 30°, 45° enable comfortable services routing
- Fem. connection side with safety technology
- Pipe spigot particularly suitable for direct fusion into the FRIAFIT sewage saddle ASA TL
- By multiple application with ABM, for example, elbows of 60°, 90°, etc. can also be achieved
- The smooth and hydraulically optimised internal contour provides a equal-base passage when utilising SDR 17/17.6 pipes
- Bright surface finish for optimum visibility when driving through with a camera
- With pin indicator for visual inspection of the fusion.

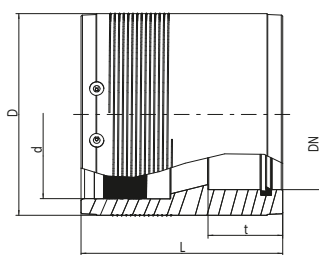
PE 100

Maximum permissible working pressure 2.5 bar

d	w	Order No.	D	L	t	s	Weight [kg]	BX	PU
160	15°	681103	185	286	92	9,5	1.660	6	48
160	30°	681104	185	329	92	9,5	1.630	6	48
160	45°	681105	185	325	92	9,5	1.630	6	48

AMKG

Transition coupler PE-PVC/PP



Transition coupler PE-PVC/PP AMKG

- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side with integrated coupler with safety technology
- PVC/PP side as coupler with SBR lip seal with large insertion depth

PE 100

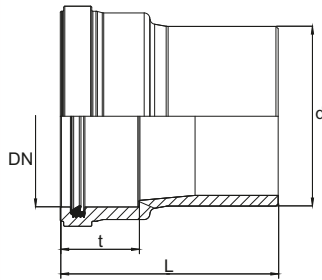
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d	DN	Order No.	D	L	t	Weight [kg]	BX	PU
160	150	682630	193	183,5	80	1.530	1	120
225	200	682631	270	270	100	5.820	1	32



UKG

Transition piece PE-PVC/PP



Transition piece PE-PVC/PP UKG

- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side can be fused with FRIAFIT AM coupler, bend ABM/ABMS or with FRIAFIT ASA VL sewage saddles
- PVC/PP side as coupler with SBR lip seal with large insertion depth

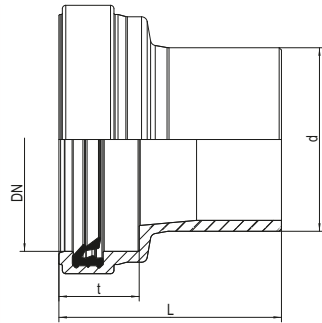
PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d	DN	Order No.	L	t	Weight [kg]	BX	PU
160	150	682617	194	70	1.030	12	96

USTZ

Transition piece PE - clay



Transition fitting PE - clay USTZ

- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to clay pipes (spigot end)
- HD-PE side can be fused with FRIAFIT AM coupler, bend ABM/ABMS or with FRIAFIT ASA VL sewage saddles
- Clay side as coupler with SBR lip seal with large insertion depth.

PE 100

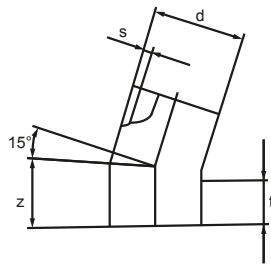
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d	DN	Order No.	L	t	Weight [kg]	BX	PU
160	150	682623	194	70	1.210	2	36



ABS 15

15° sewage bend (spigot fitting)



Sewage bend 15°, SDR 17 (spigot fitting) ABS 15

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

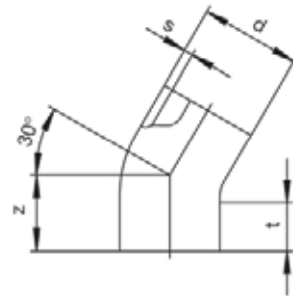
PE 100

Maximum permissible working pressure 10 bar (20 °C, water / sewage)

d	Order No.	Z	t	s	Weight [kg]	BX	PU
160	681006	280	170	9,1	2.280	1	
225	681008	370	250	12,8	4.920	1	15
280	681023	438	300	15,9	12.500	1	
355	681020	528	300	20,1	63.300	1	6

ABS 30

30° sewage bend (spigot fitting)



Sewage bend 30°, SDR 17 (spigot fitting) ABS 30

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

PE 100

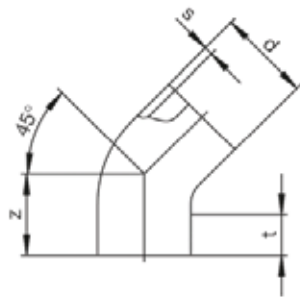
Maximum permissible working pressure 10 bar (20 °C, water / sewage)

d	Order No.	Z	t	s	Weight [kg]	BX	PU
160	681001	280	170	9,1	2.280	1	
225	681003	371	250	12,8	4.920	1	15
280	681022	440	300	15,9	12.500	1	
315	681021	480	300	17,9	17.400	1	10
355	681019	520	300	20,1	63.300	1	

FRIAFIT spigots

ABS 45

45° sewage bend (spigot fitting)



Sewage bend 45°, SDR 17 (spigot fitting) ABS 45

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

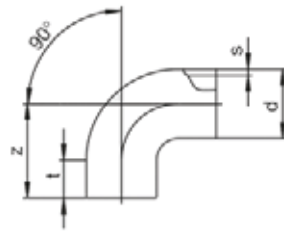
PE 100

Maximum permissible working pressure 10 bar (20 °C, water / sewage)

d	Order No.	Z	t	s	Weight [kg]	BX	PU
160	681201	280	170	9,1	2.280	1	
200	681203	349	250	11,4	5.900	1	
225	681204	380	250	12,8	5.670	1	
250	681205	411	250	14,2	8.430	1	
280	681206	448	300	15,9	15.300	1	4
315	681207	491	300	17,9	22.500	1	
355	681208	541	300	20,1	63.600	1	

ABS 90

90° sewage bend (spigot fitting)



Sewage bend 90°, SDR 17 (spigot fitting) ABS 90

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

PE 100

Maximum permissible working pressure 10 bar (20 °C, water / sewage)

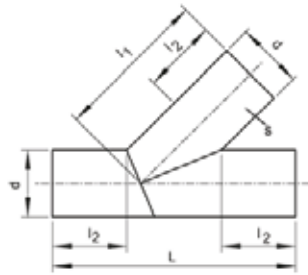
d	Order No.	Z	t	s	Weight [kg]	BX
160	681601	390	100	9,1	3.380	1
225	681603	488	150	12,8	7.100	1



FRIAFIT spigots

ATS 45

Equal branch 45° (spigot fitting)



Equal branch with same outlet 45°, SDR 17 (spigot fitting) ATS 45

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

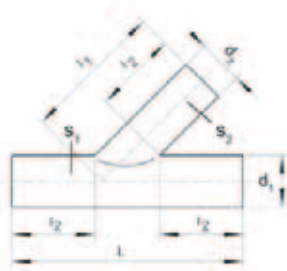
PE 100

Maximum permissible working pressure 4,5 bar (20 °C, water / sewage)

d	Order No.	L	l1	l2	s	Weight [kg]	BX
160	682002	626	393	200	9,5	4.100	1
200	682004	783	491	250	11,9	8.700	1
225	682005	818	522	250	13,4	10.700	1
250	682006	954	602	300	14,8	13.400	1
280	682007	996	638	300	16,6	20.900	1
315	682008	1145	730	350	18,7	36.600	1
355	682009	1202	779	350	21,1	44.800	1

ATSR 45

Unequal branch 45° (spigot fitting)



Unequal branch with reduced outlet 45°, SDR 17 (spigot fitting) ATSR 45

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

PE 100

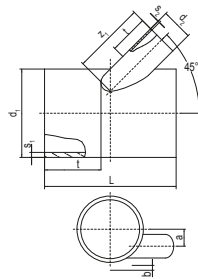
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d ₁	d ₂	Order No.	L	l1	l2	s ₁	s ₂	Weight [kg]	BX
225	160	682203	726	489	250	13,4	9,5	7.500	1
280	160	682204	826	578	300	16,6	9,5	12.000	1
280	225	682205	918	610	300	16,6	13,4	15.600	1
315	160	682206	926	653	350	18,7	9,5	16.600	1
315	225	682207	1018	685	350	18,7	13,4	19.600	1
355	160	682208	926	681	350	21,1	9,5	19.600	1
355	225	682209	1018	714	350	21,1	13,4	28.500	1
450	160	682210	926	748	350	26,7	9,5	29.100	1



ATSRS 45

Unequal branch 45° with off-center outlet (spigot fitting)



Unequal branch 45° with off-center outlet, SDR 17 (spigot fitting) ATSRS 45

- HD-PE fitting with off-center outlet for processing without holding devices with FRIAFIT couplers AM.
- Black pipe colour with bright inner surface
- When ordering, please specify the required outlet side (right/left) in flow direction.

PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610 in flow direction right

d ₁	d ₂	Order No.	a	b	L	t	z ₁	s ₁	s ₂	Weight [kg]	BX
315	160	682301	50	30	630	200	320	17,9	9,1	13.400	1
315	225	682302	20	25	720	200	320	17,9	12,8	17.000	1
355	160	682303	68	30	630	200	335	20,1	9,1	16.600	1
355	225	682304	40	25	720	200	335	20,1	12,8	20.900	1
450	160	682305	115	30	670	200	370	25,5	9,1	26.600	1
450	225	682306	87	25	760	200	370	25,5	12,8	32.300	1
560	160	682307	170	30	670	200	410	31,7	9,1	39.900	1
560	225	682308	142	25	760	200	410	31,7	12,8	47.600	1
630	160	682309	205	30	670	200	440	35,7	9,1	49.900	1
630	225	682310	177	25	760	200	440	35,7	12,8	59.100	1

PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610 in flow direction left

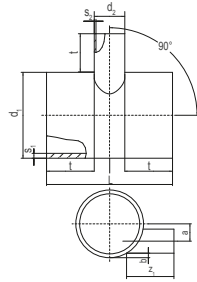
d ₁	d ₂	Order No.	a	b	L	t	z ₁	s ₁	s ₂	Weight [kg]	BX
315	160	682311	50	30	630	200	320	17,9	9,1	13.400	1
315	225	682312	20	25	720	200	320	17,9	12,8	17.400	1
355	160	682313	68	30	630	200	335	20,1	9,1	16.600	1
355	225	682314	40	25	720	200	335	20,1	12,8	20.900	1
450	160	682315	115	30	670	200	370	25,5	9,1	26.600	1
450	225	682316	87	25	760	200	370	25,5	12,8	32.300	1
560	160	682317	170	30	670	200	410	31,7	9,1	39.900	1
560	225	682318	142	25	760	200	410	31,7	12,8	47.600	1
630	160	682319	205	30	670	200	440	35,7	9,1	49.900	1
630	225	682320	177	25	760	200	440	35,7	12,8	59.100	1



FRIAFIT spigots

ATSRS 90

Unequal branch 90° with off-center outlet (spigot fitting)



Unequal branch 90° with off-center outlet, SDR 17 (spigot fitting) ATSRS 90

- HD-PE fitting with off-center outlet for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface

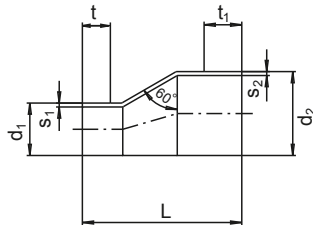
PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d ₁	d ₂	Order No.	a	b	L	t	z ₁	s ₁	s ₂	Weight [kg]	BX
315	160	682401	50	30	565	200	280	17,9	9,1	12.100	1
315	225	682402	20	25	630	200	280	17,9	12,8	15.300	1
355	160	682403	68	30	660	200	290	20,1	9,1	17.000	1
355	225	682404	40	25	730	200	290	20,1	12,8	20.700	1
450	160	682405	115	30	660	200	315	25,5	9,1	25.600	1
450	225	682406	87	25	730	200	315	25,5	12,8	30.700	1
560	160	682407	170	30	660	200	340	31,7	9,1	39.000	1
560	225	682408	142	25	730	200	340	31,7	12,8	45.300	1
630	160	682409	205	30	660	200	360	35,7	9,1	48.800	1
630	225	682410	177	25	730	200	360	35,7	12,8	56.200	1

RES

Reducer off-center (spigot fitting)



Reducer off-center, SDR 17 (spigot fitting) RES

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM

Note:

Other dimensions on request.

PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d ₁	d ₂	Order No.	L	t	t ₁	s ₁	s ₂	Weight [kg]	BX
110	125	681018	264	85	85	6,6	7,4	1.700	1
110	160	681801	310	90	95	6,6	9,5	1.700	1
160	225	681802	404	100	150	9,5	13,4	3.550	1
200	225	681804	440	100	250	11,9	12,8	4.100	1
225	280	681810	540	150	250	13,4	16,6	9.200	1







FRIATOOLS Technical Equipment

Convenient and durable devices and tools for pipe connections.

Our Performers - FRIAMAT 8 Mini and FRIAMAT 7 Prime



Optimised for all house connections

Ideal for house connections and supply lines up to d180 and larger saddles



Easy handling

Weighing just 10 kilograms and with a comfortable shoulder strap for easy, hands-free carrying



LED-Interface

Language-independent, smart and intuitive control panel with status information on fusion progress via multicoloured LEDs



Fully digital

Scanning via smartphone or Bluetooth scanner and the WorkFlow app with extended functions



preCheck function

Automatic pre-calculation of whether a fusion process can be carried out completely and without interruption – saves both material and time



Active cooling

Flow-optimised active cooling for fusion processes without interruption or loss of performance

Find out more
information at:



www.aliaxis.de/en/products/friatools/friamat8



Maximum Power for all dimensions

Suitable for all house connection, supply and transport lines



Easy handling

Only 12.8 kg and comfortable to carry with the optimised handle



Extremely Bright Display

Large 4.3" TFT colour display for best readability and clear user guidance



Fully digital

Bluetooth interface for working with the WorkFlow app



Comprehensive documentation

Full documentation and extended traceability with up to 20,000 read out of fusion protocols and software update via USB

Find out more information at:



www.aliaxis.de/en/products/friatools/friamat7

FRIAMAT area of application

FRIAMAT electrofusion units operate reliably at ambient temperatures from -20 °C to +50 °C (FRIAMAT 8 Mini: -10 °C to +50 °C). The range of application depends on the power requirement of the fitting to be fused and the respective processing temperature.

The FRIAMAT 8 Mini is suitable for house connection installations and processing of fittings up to d 180 as well as larger electrofusion saddle dimensions.

For processing of FRIALEN and FRIAFIT couplers up to and including d 900 and all saddle dimensions the following electrofusion control units are recommended: FRIAMAT 7 prime, FRIAMAT 7 basic, FRIAMAT prime eco, FRIAMAT print eco and FRIAMAT basic eco. For Frialen couplers > d 900, FRIAMAT XL electrofusion control unit is recommended.

FRIAMAT fusion units can be used to process fittings from other manufacturers even up to d 1200 and above. However, we recommend to check and align the specific power demand of the fitting with the manufacturer in advance, also considering temperature during processing.

Availability of the FRIAMAT Bluetooth function and the WorkFlow App

Please check at www.aliaxis.de/en on the related FRIAMAT product page if the Bluetooth connectivity is provided in the intended region of operation, as specific approvals may be required.

FRIAMAT mains plugs for different countries

FRIAMAT fusion units are delivered with EURO mains plugs as standard, but are also available with other types of mains plugs that comply with the respective country-specific standards. These FRIAMAT variants are available on request.



FRIAMAT 7 prime Fusion unit with documentation function



Powerful universal fusion unit FRIAMAT 7 prime

- Bluetooth
- Full documentation
- Full traceability functions
- 20,000 fusion protocols
- Output via USB interface or app (smart phone)
- Supervisor function
- State-of-the-art converter technology with active cooling.
- Bright colour TFT display
- With mini scanner or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 12.8 kg

Note:

Possibility of updating the FRIAMAT software via the USB interface by the user.

Short text	Order No.
With mini scanner	611134
With 1D/2D scanner	614134

FRIAMAT prime eco Fusion unit with documentation function



Powerful universal fusion unit FRIAMAT prime eco

- Bluetooth
- Full documentation
- Full traceability functions
- 20,000 fusion protocols
- Output via USB interface or app (smart phone)
- Supervisor function
- Toroidal core technology with active cooling.
- Bright colour TFT display
- With mini scanner or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 18.0 kg

Note:

Possibility of updating the FRIAMAT software via the USB interface by the user.

Short text	Order No.
With mini scanner	611124
With 1D/2D scanner	614124

FRIAMAT 8 Mini Fusion unit with documentation function

NEW



- Compact FRIAMAT 8 Mini fusion unit for house connection areas up to d 180 and above.
- Bright, multicolored LED display of all function statuses
 - Bluetooth / WiFi
 - Full documentation of fusion data
 - Traceability function
 - 3,000 fusion protocols
 - Full WorkFlow app integration
 - Barcode scanning and data output exclusively via app (smartphone)
 - State-of-the-art toroidal core technology with active cooling
 - EURO mains plug
 - Weight approx. 10 kg
 - Mains cable 5 m / fusion cable 2.5 m
 - Carrying strap
 - 1D/2D Bluetooth scanner (2D barcodes according to ISO 12176-5) (can be ordered as an option)
 - Special transport case (can be ordered as an option)

Note:

FRIAMAT software can be updated by the user via app (smartphone).
 Other mains plug variants on request.
 Availability in selected countries from mid 2025

Short text	Order No.
FRIAMAT 8 Mini with EURO mains plug	614140
FRIAMAT 8 Mini with AUS mains plug	614140-AS0
FRIAMAT 8 Mini with CH mains plug	614140-CH0

SCAN BT 1D/2D Bluetooth Scanner

NEW



- FRIAMAT 1D/2D bluetooth scanner
- Cordless
 - Sturdy
 - Reliable reading of 1D fusion and traceability barcodes and 2D barcodes according to ISO 12176-5.
 - With practical storage pocket
 - Only suitable for FRIAMAT 8 Mini fusion unit

Short text	Order No.
1D/2D- Bluetooth-Scanner	624007

SPK8 FMT Special case

NEW



- For transporting and storing the FRIAMAT 8 Mini fusion unit
- Waterproof, shatterproof, dustproof

Short text	Order No.
Special case	627002



FRIAMAT 7 basic Fusion unit without documentation function



Powerful universal fusion unit FRIAMAT 7 basic

- State-of-the-art converter technology with active cooling.
- Bright colour TFT display
- With mini scanner or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 12.8 kg

Note:

Possibility of updating the FRIAMAT software via the USB interface by the user.

Short text	Order No.
With mini scanner	611130
With 1D/2D scanner	614130

FRIAMAT basic eco Fusion unit without documentation function



Powerful universal fusion unit FRIAMAT basic eco
Toroidal transformer technology with active cooling

- Bright colour TFT display
- With mini-scanner or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 18.0 kg

Note:

Possibility of updating the FRIAMAT software via the USB interface by the user.

Short text	Order No.
With mini scanner	611120
With 1D/2D scanner	614120

FRIAMAT 6 110V Fusion unit with documentation function



Powerful universal fusion unit FRIAMAT 6 110V

- Bluetooth
- Full documentation
- Full traceability functions
- 20,000 fusion protocols
- Output via USB interface or app (smart phone)
- Supervisor function
- State-of-the-art toroidal core technology with active cooling
- Bright colour TFT display
- With mini scanner

UK metric (Availability from mid 2025):

- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 19.0 kg

US imperial:

- Extra long fusion cable (13 ft)
- Extra long power cable (16 ft)
- Weight approx. 42 lbs

Note:

Possibility of updating the FRIAMAT software via the USB interface by the user.
Other mains plugs variants on request.
1D/2D scanner on request.

Short text	Order No.
With UK mains plug	611129-UK0
With CAN mains plug	611129-UKC
With US mains plug and special transport case	611129-USI

WORKFLOW

WorkFlow - The digital assistant for construction project management



WorkFlow is your digital assistant for the construction site. WorkFlow enables comfortable operation of the FRIAMAT welding device with a Bluetooth interface and simplifies, speeds up and extends the documentation including pictures, geodata and comments.

WorkFlow Pro*

- Project-based working
- Capturing additional components such as mechanical fittings, butt welds, pipes, valves
- Creating a house connection sketch
- Advanced data export formats (.csv, .pdf, DVS-2207 protocol)
- User management

WorkFlow Basic

- Capturing of welding components
- Email sending of PDF and CSV

*not available in all countries

Short text	Order No.
WorkFlow - Package Test Key (runtime 3 months)	610001T
WorkFlow - Package S Key (runtime 12 months)	610002S
WorkFlow - Package L Key (runtime 12 months)	610003L



MINISCAN

Mini-scanner



FRIAMAT mini-scanner

- Handy
- Sturdy
- Reliable reading of the fusion barcodes and traceability barcodes
- Practical storage bag
- Suitable for all FRIAMAT fusion units in this current catalogue for FRIATOOLS

Note:

Utilisation with older FRIAMAT types on request.

Short text	Order No.
Mini scanner	624005

FWLESST

Reader wand



FRIAMAT reader wand

- For reading in the fusion and traceability barcodes
- Applicable to all FRIAMAT fusion units

Short text	Order No.
Reader wand	623645

2DSCAN

1D/2D scanner



FRIAMAT 1D/2D scanner 2DSCAN

- Handy
- Sturdy
- Reliable reading of 1D fusion and traceability barcodes and 2D barcodes according to ISO 12176-5.
- With practical storage pocket
- Suitable for FRIAMAT fusion units generation 6 and 7.

Short text	Order No.
	624006

MEMSTICK

Memory stick



FRIAMAT Memory Stick for storing fusion data and traceability data

- As FRIATRACE database format
- As a PDF data file or CSV data file
- 2 GB

Order No.
624023

SUPER P

Supervisor Pass



For individual setting of menu functions.

- Function blocking
- Presetting of forced processes
- Controlling the maintenance deadline
- Other functions (see FRIAMAT operating instructions)

Usable for:

- FRIAMAT 7 prime
- FRIAMAT prime eco
- FRIAMAT XL

Note:

To order, please download the application form on www.aliaxis.de in the product catalogue under Supervisor Pass.

Order No.

623101

SPASS

Fusion-Pass



To block the fusion unit functions

- Identification of the person fusing
- To protect FRIAMAT fusion units (only documentation devices) from unauthorised access

The data stored in the Fusion-Pass (fusion number or name of the person fusing) will be transferred to the fusion protocol.

Note:

To order, please download the application form on www.aliaxis.de in the product catalogue under Fusion-Pass.

Order No.

623100

FPASS

Remote start pass



For remote start of all FRIAMAT fusion units

- With reader wand
- With scanner
- Including carrying belt

Note:

Reading in the code only activates the START button. Unable to stop fusion unit.

Order No.

624003

ALTK FMT

Transport boxes



For transporting and storing FRIAMAT fusion units.

Note:

Transport boxes for older FRIAMAT types available on request.

Short text

FRIAMAT fusion units from model year 2018

Order No.

627600



SPEZK FMT

Special case



For transporting and storing FRIAMAT fusion equipment

- Waterproof, shatterproof, dustproof
- Quiet-running transport castors with stainless steel bearings
- Pull-out handle
- Automatic pressure equalization valve - regulates the pressure inside, prevents the ingress of water

Short text

Special case for FRIAMAT from model year 2018

Order No.

627601

CONTACT4

Socket contacts 4.0 mm



Socket contacts 4.0 mm

- For all FRIAMAT fusion units

Short text

Contact 4 (pair) black

Order No.

624529

ADFL

Adaptor for flat contacts



For mounting on the socket contact 4.0 mm

- For all FRIAMAT fusion units
- Adaptor for flat contacts

Short text

Adaptor bifilar (pair)

Order No.

613236

ADBK

Adaptor for socket contacts 4.7 mm



For mounting on the socket contact 4.0 mm

- For all FRIAMAT fusion units
- Adaptor with socket contact 4.7 mm

Short text

Adaptor 4.7 mm (pair)

Order No.

613237



Our professional tools make your job easier

Having the correct tools to perform installation on site makes all the difference. Aliaxis delivers high-quality tools for professionals.

We see ourselves as specialists in electrofusion of HDPE piping systems, so we develop also the equipment and accessories for your needs from the very outset. We know exactly what matters and what is needed on site. We offer a range of equipment tailored to the daily challenges encountered on the construction site:

FRIATOOLS scraper tools for all pipe diameters and for a wide range of scraping lengths and saddle surfaces. These safeguard a uniform removal of material and reproducible quality for the optimal processing and reliable fusion of HDPE pipes.

Put your trust in tools that produce the perfect results.



Our products at a glance:

- Scraper tools for pipe ends (d 20 - d 1200)
- Scraper tools for outlet spigots and pipe ends (d 25 - d 315)
- Scraper tools for saddle areas and pipe ends (d 63 - d 1200)
- Coordinated accessories and comprehensive service for all scraper tools

FRIATOOLS scraper tools

FWSG RA

Compact scraper tool for pipe ends and outlet spigots d 25 - d 63



Dimension-bound compact scraper tool FWSG RA

- Metal version
- Safe removal of the oxide layer from HD-PE and PE-Xa pipes and from outlet spigots on FRIALEN fittings
- Extra-long scraper length
- Scraper blade made of hard metal with 2 cutting edges (double life)
- Automatic compensation of pipe ovality and tolerances
- Operation by hand, with hand crank or battery-operated screwdriver.

Note:

Practical plastic case to hold dimensions d 32 - d 63 available as an accessory (without compact scraper tools).

Short text	SDR	Order No.
FWSG RA 25 for d 25	11	613576
FWSG RA 32 for d 32	11	613580
FWSG RA 40 for d 40	11	613581
FWSG RA 50 for d 50	11	613582
FWSG RA 63 for d 63	11	613583
Crank handle for d 25 - d 63		613579
FWSG RA case for d 32 - d 63		613586

FWSG 63

Scraper tool for pipes d 20 - d 63 (1/2" - 2" IPS)



Cross-dimension scraper tool FWSG 63

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes
- Scraper blade made of hard metal with 2 cutting edges (double life)
- Universal scraper areas from d 20 - d 63 (1/2" - 2" IPS)
- No dimension adjustment required
- Uniform chip removal by spring-mounted scraper blade and automatic feed
- Delivery in transport box

Short text	Order No.
FWSG 63 for d 20 - d 63	613408

FWSG 225

Scraper tool for pipes d 75 - d 225 (3" - 8" IPS)



Cross-dimension scraper tool FWSG 225

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes
- Scraper blade made of hard metal with 2 cutting edges (double life)
- Universal scraping areas from d 75 - d 225 (3" - 8" IPS)
- Uniform chip removal by spring-mounted scraper blade and automatic feed
- With quick adjustment for easy adjustment to the scraping length
- Delivery in transport box

Short text	Order No.
FWSG 225 for d 75 - d 225	613409

FWSG 400

Scraper tool for pipe d 75 - d 400 (3" - 14" IPS)



Cross-dimension scraper tool FWSG 400

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes
- Scraper blade made of hard metal with 2 cutting edges (double life)
- Universal scraping areas from d 75 - d 400 (3" - 14" IPS)
- Uniform chip removal by spring-mounted scraper blade and automatic feed
- With quick adjustment for easy adjustment to the scraping length
- Delivery in transport box

Short text	Order No.
FWSG 400 for d 75 - d 400	613410



FRIATOOLS scraper tools

FWSG 710 L

Scraper tool for pipes d 250 - d 710 (10" - 28" IPS)



Cross-dimensional scraper tool FWSG 710 L

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes
- Scraper blade made of hard metal (long service life)
- Universal scraping areas from d 250 - d 710 (10" - 28" IPS)
- Uniform chip removal by spring-mounted scraper blade and automatic feed
- With quick adjustment for easy adjustment to the scraping length
- Delivery in transport box

Short text	Order No.
FWSG 710 L for d 250 - d 710	613642

FWSG 710 S

Scraper tool for pipes d 250 - d 710 (10" - 28" IPS) and spigot fittings



Cross-dimensional scraper tool FWSG 710 S

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes (maximum for half-socket length d 710)
- Scraper blade made of hard metal (long service life)
- Universal scraping areas from d 250 - d 710 (10" - 28" IPS)
- Uniform chip removal by spring-mounted scraper blade and automatic feed
- With quick adjustment for easy adjustment to the scraping length
- Delivery in transport box

Short text	Order No.
FWSG 710 S for d 250 - d 710	613639

FWSG SE

Compact scraper tool for pipe ends and saddle surfaces d 63 - d 315



Dimension-bound scraper tool FWSG SE

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes and in the saddle surface area
- Scraper blade with 2 cutting edges (double life)
- Easy clamping due to the open design of the scraper tool.
- Uniform chip removal by spring-mounted scraper blade
- Delivery in transport box

Short text	Order No.
FWSG SE 63 for d 63	613562
FWSG SE 75 for d 75	613563
FWSG SE 90 for d 90	613564
FWSG SE 110 for d 110	613565
FWSG SE 125 for d 125	613566
FWSG SE 140 for d 140	613567
FWSG SE 160 for d 160	613568
FWSG SE 180 for d 180	613569
FWSG SE 200 for d 200	613570
FWSG SE 225 for d 225	613571
FWSG SE 250 for d 250	613572
FWSG SE 280 for d 280	613573
FWSG SE 315 for d 315	613574



FWSG SE IPS

Scraper tool for pipe ends and saddle areas 2 IPS - 12 IPS



Dimension-bound compact scraper tool FWSG SE IPS

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes and in the saddle surface area
- Scraper blade with 2 cutting edges (double life)
- Simple clamping by open construction of the scraper tool.
- Uniform chip removal by spring-mounted scraper blade
- Delivery in transport box

Short text	Order No.
FWSG SE 2 IPS	613512
FWSG SE 3 IPS	613513
FWSG SE 4 IPS	613514
FWSG SE 6 IPS	613515
FWSG SE 8 IPS	613516
FWSG SE 12 IPS	613519

FWSK

Scraper chain for pipe ends and saddle surfaces d 250 - d 1000



Cross-dimension scraper tool FWSK

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes and in the saddle surface area
- Simple clamping
- Adjustable pipe diameter
- Uniform chip removal by spring-mounted scraper blade
- Delivery in transport box

Short text	Order No.
FWSK for d 250 - 1000	613383

FWSK 1200

Scraper chain for pipe ends and saddle surfaces d 800 - d 1200



Cross-dimension scraper tool FWSK

- Safe removal of the oxide layer from HD-PE and PE-Xa pipes and in the saddle surface area
- Simple clamping
- Adjustable pipe diameter
- Uniform chip removal by spring-mounted scraper blade
- Delivery in transport box

Short text	Order No.
FWSK 1200 for d 800 - 1200	613386

FWSGE 3 Replacement blade for scraper tools FWSG 225 (until 2019)



Replacement blade made of hard metal FWSGE 3

- 3 pieces Replacement blade
- 1 piece Torx screw
- 1 piece Torx wrench.

Note:

Can only be utilised for scraper tools FWSG 225 and FWSG 315 up to model year Q3/2019.

Short text	Order No.
FWSGE 3, red coloured, for FWSG 225 / FWSG 315 (up to model year Q3/2019)	613322

FWSGE 4 Replacement blades for scraper tools FWSG 63 (until 2018)



Replacement blade made of hard metal FWSGE 4

- 3 pieces Replacement blade
- 1 piece Torx screw
- 1 piece Torx wrench.

Note:

Can only be utilised for the FWSG 63 scraper tool up to model year 2018.

Short text	Order No.
FWSGE 4, green coloured, for FWSG 63 (up to model year 2018)	613323

FWSGE 5 Replacement blade for scraper tools FWSG 710 L/S and FWSG 900 L



Replacement blade made of hard metal FWSGE 5

- 3 pieces Replacement blade
- 1 piece Torx screw
- 1 piece Torx wrench

Short text	Order No.
FWSGE 5, blue coloured, for FWSG 710 L/S and FWSG 900 L	613324

FWSGE 8 Replacement blades for scraper tools FWSG SE (all types)



Replacement blades FWSGE 8

- Design as a turning blade (with 2 cutting edges).
- 1 piece Replacement blade
- 1 piece Allen screw
- 1 piece Allen wrench

Short text	Order No.
FWSGE 8, for FWSG SE (all types)	613327



FWSGE 10

Replacement blades for scraper tools FWSG RA 32 and 40

- Replacement blades FWSGE 10
- Design as a turning blade (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench



Short text

Order No.

FWSGE 10, for FWSG RA 32 and 40

613329

FWSGE 11

Replacement blades for scraper machines FWSG RA 50 and 63

- Replacement blades FWSGE 11
- Design as a turning blade (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench



Short text

Order No.

FWSGE 11, for FWSG RA 50 and 63

613330

FWSGE 12

Replacement blades for scraper tools FWSG XL

- Replacement blades and sliding plate FWSGE 12 designed for large pipe machining
- Design as reversing blade and reversing plate (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece sliding plate
 - 1 piece Torx screw
 - 1 piece Torx wrench



Short text

Order No.

FWSGE 12, for FWSG XL

613331

FWSGE 13

Replacement blades for scraper tools FWSG RA 25

- Replacement blades FWSGE 13
- Design as a turning blade (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench



Short text

Order No.

FWSGE 13, for FWSG RA 25

613332

FWSGE 14

Replacement blades for scraper tools FWSG 225 / FWSG 400 (from 2019)

- Replacement blades FWSGE 14
- Design as a turning blade (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench



Note:

FWSGE 14 can only be utilised for the scraper tools FWSG 225 and FWSG 400 from model year 2019.

Short text

Order No.

FWSGE 14, white coloured, for FWSG 225/FWSG 400 (from model year 2019) **613335**

FWSGE 15

Replacement blades for scraper tools FWSG 63 (from 2018)

- Replacement blades FWSGE 15
- Design as a turning blade (with 2 cutting edges).
 - 1 piece Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench



Note:

FWSGE 15 can only be used for the FWSG 63 scraper tool from model year 2018.

Short text

Order No.

FWSGE 15, orange coloured, for FWSG 63 (from model year 2018)

613336

FWSGE K

Replacement blades for scraper chain FWSK

Replacement blades for scraper chain

Short text

Order No.

FWSGE K, for FWSK

613337



ALTK FWSG

Transport boxes

For transporting and storing scraper tools.

Note

Transport boxes for older scraper tools on request.



Short text	Order No.
Type of device: FWSG 63	613307
1) Type of device: FWSG 225 and FWSG 63/225	613309
Type of device: FWSG 400 (from model year 2019)	613407
Type of device: FWSG 710 S	613308
Type of device: FWSG 710 L	613314
Type of device: FWSG 900 L	613304
Type of device: FWSG SE 63	613303
Type of device: FWSG SE 75 - 140	613319
Type of device: FWSG SE 160 - 225	613318
Type of device: FWSG SE 250 - 315	613320

1) Suitable for FWSG 225 up to and from model year 2019

FWZ

Hand scraper

For removing the oxide layer from HD-PE pipes or mouldings which cannot be processed by appropriate scraper tools. Also suitable for deburring cut edges.

- 1 hand piece scraper

Note

Replacement blades: Content per pack 5 piece.



Short text	Order No.
Hand scraper	613300
Replacement blade	613270

FWZ XL

Hand scraper for large pipes

For removing the oxide layer from large PE pipes which cannot be processed by appropriate scraper tools. In particular for preparing saddle surfaces for processing FRIALEN saddle mouldings. Also suitable for deburring cut edges.

- 1 hand scraper
- Two cutting faces



Short text	Order No.
Hand scraper for large pipes	613299

FRIATOP

Clamping unit (top loading)



For assembling FRIALEN top-loading saddle mouldings without lower clamp.

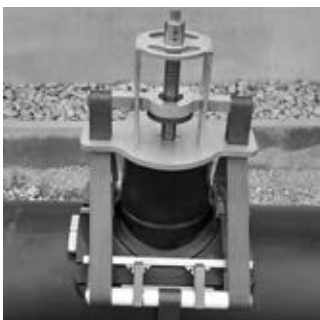
- For all pipe diameters in the respective stated dimension range with extra elastic pneumatic spring
- For optimum joint pressure build-up during fusing.

Order No.

613350

UNITOP

Clamping unit for spigot saddles SA UNI / ASA UNI



The UNITOP clamping unit is required for the assembly of:

- FRIALEN outlet spigot saddles Universal SDR 11
 - SA UNI d 250 - d 900 with outlet d 90, d 110, d 125 and d 160
- FRIAFIT outlet spigot saddles SDR 17
 - ASA UNI d 630 - d 900 with outlet d 160

The UNITOP 250 clamping unit is required for the assembly of:

- FRIALEN outlet spigot saddles Universal SDR 11
 - SA UNI d 315 - d 1200 with outlet d 225 and d 250

Short text

Order No.

UNITOP clamping device from d 250 - d 900 with outlet up to d 160

613385

UNITOP 250 clamping device from d 315 - d 1200 with outlet d 225/d 250

613387

NEW

ADWL elbow adaptor for socket contacts 4.0 mm

613241

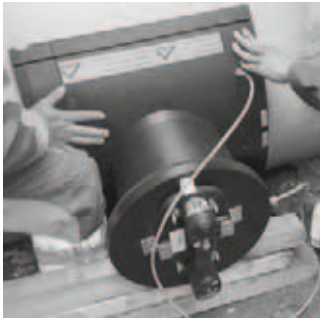
Clamp adaptor for the outlet of the ASA UNI d 160 spigot saddles

613839



FRIALOAD

Clamping System (Vacuum Load)



For the assembly of:

- FRIAFIT sewage saddles ASA VL d 200 - d 630 with outlet d 160 and d 225

Note:

Battery-operated component **PUMP** generates and regulates vacuum fully automatically for the joining pressure. No additional power source required.

PLATE (d 325) allow the processing of all with VL marked saddles. Outlet dimensions from d 160 to d 225.

Short text	Order No.
PUMP	613810
PLATE	617372



FWAB

Drilling equipment



FWAB drilling equipment for drilling HD-PE pipes in a pressure-free condition:

- FRIALEN spigot saddles SA UNI
- FRIAFIT sewage saddles ASA VL
- Driven by drill

Comprising:

- Hole saw (nominal size-related), hole saw mounting with drill shaft SDS-maximum,
- Extension for hole saw mounting (not for FWAB ASA as well as for SA UNI applications),
- Centring drill with ejector and catch sleeve
- Hexagonal spanner.

Note:

(Fig. shows FWAB 400)



Short text	Version	Order No.
FWAB 90 for FRIALEN SA UNI for d 90		613832
FWAB 110 for FRIALEN SA UNI for d 110		613833
FWAB 125 for FRIALEN SA UNI for d 125		613834
FWAB 160 for FRIALEN SA UNI for d 160		613829
FWAB 225 for FRIALEN SA UNI for d 225		613830
FWAB 250 for FRIALEN SA UNI for d 250		613831
FWAB ASA 160/450 for FRIAFIT ASA VL 160 suitable for pipes up to d 450, SDR 17		613846 NEW
FWAB ASA 160/710 for FRIAFIT ASA VL 160 suitable for pipes up to d 710, SDR 17		613816
FWAB ASA 225 for FRIAFIT ASA VL 225 for d 225		613835



ASATOP

Clamping unit for close-fit liner DN 200 - DN 500 (ASA VL 160) and transition saddle (ASA VL KG 160)



Clamping tool ASATOP for processing from:

- FRIAFIT sewage saddle ASA VL 160 / ASA VL KG 160 especially for HD-PE close-fit liners DN 200 - DN 500
- For clamping and producing the necessary joining pressure during fusion

Comprising:

- ASATOP clamping device with tilting dowel (without pipe-comprehensive clamping belt technology)
- Hole saw (Ø 95 mm) with SDS hole saw holder
- Centring drill,
- Extension,
- Compressed air pump



Order No.

613370

RPS

Repair set



RPS repair set for retaining residual water after the water runs

- When executing repair work and integration work on HD-PE water pipes in dimensions d 90 to d 900

■ Comprising:

- Universal repair set with pump
- Gauge
- Drill
- Connection hose
- In addition, dimensional repair balloons

- Optional extension kit for the universal repair set for connecting another repair balloon

■ Comprising:

- Connection hose 3 m
- Gauge

Note:

From dimension d 355 onwards, the drilling set FWAB 225 (Order No. 613830) is required for drilling. When using the repair set up to d 225, FRIALEN repair and reinforcement saddles RSV are required. From d 250, FRIALEN repair saddles Top-Loading RS TL or saddles with spigot Universal SA UNI are required.



Short text

Order No.

Universal repair set for d 90 - d 900	613701
Extension kit for d 90 - d 900	613715
Repair balloon Type 1 for d 90 - d 180	613702
Repair balloon Type 2 for d 200 - d 315	613703
Repair balloon Type 3 for d 355 - d 450	613704
Repair balloon Type 4 for d 500 - d 560	613705
Repair balloon Type 5 for d 630	613706
Repair balloon Type 6 for d 710	613707
Repair balloon Type 7 for d 800	613708
Repair balloon Type 8 for d 900	613709
Transport box	613700



CLAMP 63

Alignment clamp d 20 - d 63



Pipe retaining clamp CLAMP 63 with elbow adjustment (45° / 90°)
 Universal application for:

- Fitting
- Reductions
- Elbow 45° and 90°
- Outlets on saddle components d 20 - d 63 mm

Note:
 Optional long version CLAMP63L can also be used for long couplers FRIALONG.

Short text	Order No.
CLAMP63	613020
CLAMP63L	613034

CLAMP 180

Alignment clamp d 63 - d 180



Pipe retaining clamp CLAMP 180 with elbow adjustment (45° / 90°) and 2 clamping elements for:

- Fittings,
- Reductions
- Elbow 45° and 90° in d 63, d 90, d 125 and d 180

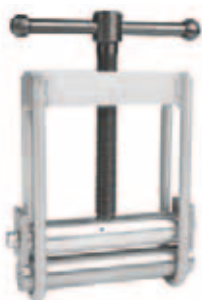
- Modular expansion of the pipe retaining clamp.
 - 2 additional clamping elements for utilisation as 4-fold retaining clamps for dimensions d 63, d 90, d 125 and d 180.
 - T-extension kit for pipe clamp can be utilised for T-pieces. Can be upgraded by additional clamping element to the double retaining clamp on the branching pipe.
 - Reducer half-shell set for dimensions d 110 and d 160.

(Fig. shows design with 4 clamping elements)

Short text	Order No.
Pipe retaining clamp with 2 clamping elements for d 63, d 90, d 125, d 180	613021
Additional clamping element (1 piece.) for d 63, d 90, d 125, d 180	613022
Reducer half-shell set (1 piece) for d 110, d 160	613023
T extension kit for d 63, d 90, d 125, d 180	613024

SQM

Manual squeezing-off tool for d 20 - d 125 pipes



SQM manual squeezing-off tool for the temporary shut-off of HD-PE and PE-Xa pipes d 63 - d 125 in SDR 11 and SDR 17,6.

Short text	SDR	Order No.
SQM63 for d 20 - d 63 / SQM125 for „d 63 - d 90	11	613025
d 90 - d 125”	11 / 17,6	613026

SQH

Hydraulic squeeze-off tool for pipes d 63 - d 180



SQH hydraulic squeeze-off tool for the temporary shut-off of HD-PE and PE-Xa pipes d 63 - d 180 in SDR 11 and SDR 17.6.

Short text	SDR	Order No.
SQH180 for d 63 - d 180	11 / 17,6	613028



RRC

Re-rounding clamps for reinstating round cross section of squeezed-off pipes d 63 - d 180

- For rounding back HD-PE and PE-Xa pipes d 63 - d 180 after squeezing has been executed correctly.
- RRC90 as universal rounding-back clamp for dimensions d 63, d 75 and d 90. Including key for actuating the universal return clamp
 - RRC110 - RRC180 as dimension-related rounding-back clamps for dimensions d 110, d 125, d 160 and d 180

(Fig. 1 shows RRC90, Fig. 2 shows RRC180)



Short text	Order No.
RRC90 for d 63, d 75, d 90	613029
RRC110 for d 110	613030
RRC125 for d 125	613031
RRC160 for d 160	613032
RRC180 for d 180	613033

FWXR

Manual round clamp for pipes d 63 - d 250

For the back rounding of oval HD-PE and PE-Xa pipes. Cover several dimensions by inserting reducing half-shells.

(Fig. shows FWXR-S1)



Short text	Order No.
FWXR-S1 for d 32, d 40, d 50, d 63	613416
FWXR-S2 for d 90, d 110	613431
FWXR-S3 for d 125, d 160	613439
FWXR-S4 for d 180, d 200	613443
FWXR-S5 for d 225, d 250	613444

FWXRH

Hydraulic round clamp for pipes d 280 - d 900

For rounding back HD-PE and PE-Xa pipes.

Note:
Prices and availability of dimensions on request.

(Fig. shows the hydraulic round clamp d 800).



Short text	Order No.
d 280	613452
d 315	613461
d 355	613462
d 400	613463
d 450	613464
d 500	613465
d 560	613467
d 630	613466
d 710	613468
d 800	613460
d 900	613458



FWXRB

Manual rounding clamp for pipes d 800 - d 1200



For rounding back HD-PE pipes.
Suitable for pipes d 800 - d 1200.

Note:
Prices and availability on request.

Short text	Order No.
d 800 - d 1200	613457

PCUT

Pipe cutter for pipes d 20 - d 140

Pipe cutter with quick adjustment for HD-PE pipes d 20 to d 140 in SDR 11.



Short text	Order No.
Pipe cutter d 20 - d 63	613040
Pipe cutter d 50 - d 140	613041
Replacement cutting wheel d 20 - d 63	613042
Replacement cutting wheel d 50 - d 140	613043

PCUT S

Pipe shears for pipes d 20 - d 63

Pipe shears with lever ratio for HD-PE pipes d 20 to d 63 in SDR 11.



Short text	Order No.
Pipe shears d 20 - d 40	613044
Pipe shears d 20 - d 63	613046

FWPM

FRIALEN / FRIAFIT marker (silver)



For labelling HD-PE and PE-Xa pipes.
 ■ Colour silver
 ■ Content per pack: 10 pieces.

Order No.
613069

FWSS

Activating key for tapping tees

For drill actuation, depending on the diameter (d1) of the FRIALEN tapping tees

- d1: 40 - 225 wrench size WS 17 mm for all DAA RED SNAP and DAP d 63.
- d1: 90 - 315 wrench size WS 19 mm for DAA TL and DAP d 90 - d 225.



d ₁	Order No.	WS [mm]
40-225	613246	17
90-315	613250	19



FWSR T

Ratchet for activating key for tapping tees DAA RED SNAP

For drill actuation of the DAA RED SNAP FRIALEN tapping tees, comprising:
Ratchet 1/2" telescopic including socket wrench attachment wrench size WS 17 (17 mm).

Note:

In addition, the actuating key FWSS wrench size WS 17 mm is required (Order No. 613246).



Short text	Order No.
Ratchet 1/2" with socket wrench SW17 mm	613615



FWSR

Actuating key for parallel dome tapping tees (DAP)

For drill actuation of the FRIALEN tapping tees with parallel dome DAP, comprising:

- Ratchet 1/2"
- Socket adapter with wrench size WS 17 mm or WS 19 mm



Short text	Order No.
Ratchet 1/2"	613610
Socket key SW 19 mm	613605
Socket key SW 17 mm	613606



FRIATOOLS other tools and installation aids

FWDPA

Pressure test adapter for DAA RED SNAP

Drill sleeve with pressure sampling adapter for use with FRIALEN tapping tees DAA RED SNAP with female thread = R 1/4" for connecting a pressure gauge.



Short text	Order No.
FWDPA for FRIALEN DAA RED SNAP	613597

FWDPA

Pressure test adapter for DAA Classic, DAP, DAA TL, DAA TL RE

Pressure test adaptor for use with FRIALEN tapping tees:

- DAP
- DAA TL
- DAA Classic from d 90, with female thread = R 1/4" for connecting a pressure gauge



Short text	Order No.
FWDPA for FRIAL DAP, DAA TL, DAA Classic from d 90	613595

FWDPA SA

Pressure test adapter

Pressure test adaptor for use with FRIALEN spigot saddles SA UNI, with connection nipple \varnothing 1/2".



Short text	Order No.
FWDPA SA for SA UNI	613596



FRIATOOLS rental equipment service



Aliaxis Deutschland offers the right equipment for every processing situation.

In addition to FRIAMAT fusion units and FRIATOOLS scraper tools, a comprehensive range of tools and installation equipment for processing FRIALEN safety fittings and the FRIAFIT sewage system can be rented.





Tools service

Since more than 30 years we have been offering you a mature and complete range of tools and equipment suitable for construction sites as well as a complete service tailored to your requirements:

We take care of your professional tools.



Tools service from the manufacturer and certified partners and service stations

On top of our on-site tools service in Mannheim, where we offer all services around the complete equipment of FRIATEC such as FRIAMAT fusion units, scraper tools or mechanical tooling for Germany, Austria and Switzerland we have certified partners and service stations worldwide. Superior tools service from experts with proven high quality standards from FRIATEC.

Get in touch with your local partner to find the best service station for you!

Contact:

Email: info-friatools@alixis.com

www.alixis.de/en/services/tools-service



Mobile service on site

The fastest way to more efficiency: We come to you with our service vehicle and carry out professional maintenance and minor repairs on FRIAMAT welding machines and FRIATOOLS Peeling devices and mechanical tools from FRIATEC at your location. Your advantages:

Installation of high-quality original spare parts by our qualified service employees - this secures your investment in the long term.

Technical advice from our service staff on site.

For a non-binding offer, as well as all essential information about maintenance locations and dates write to:



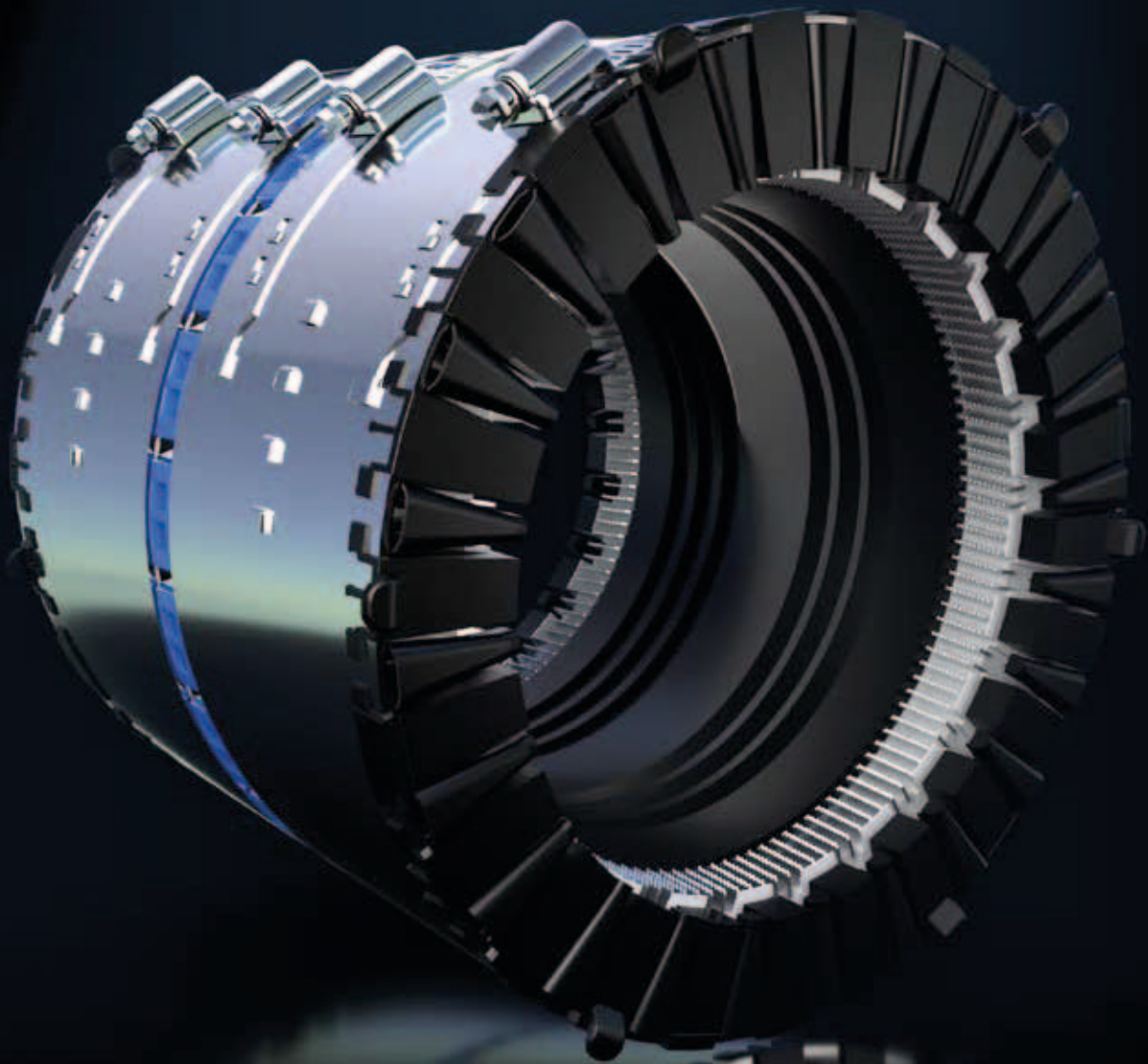
Service Hotline: +49 621 486-1533

Customer Service: +49 621 486-2742

Email: info-friatools@alixaxis.com







FRIACORE Mechanical jointing and repair technology

for all pipes in gas, water and waste water
applications



FRIACORE Connect & Repair

Mechanical jointing and repair solutions

Historically developed pipe networks for gas and water supply consist of a large number of different materials with a wide variety of properties and outside diameters. A huge challenge in terms of cost-effectiveness and feasibility. With just four products, the FRIACORE repair portfolio covers nearly 90 % of all damage in the pipe network. Safely, quickly and permanently. A comprehensive, high-quality and and sustainable range of mechanical jointing and repair solutions - developed for tough everyday construction site work.



FRIASAFE

A problem solver for everything?

Sounds like the dream of every installer, network owner and utility company. Well, we've made it come true: a powerful solution that combines groundbreaking technology and revolutionary design to effectively and efficiently address the current challenges of water networks. With the easiest handling and minimal assembly time, developed and produced in Europe.

UltraGrip/FRIAGRIP

Restraint pipe connection of various materials

Preventing the pipe system from any tension and ensure permanent repairs – for every type of damage and all piping materials? Yes, that's possible! Restrained, absolutely tight and avoiding contact corrosion. With UltraGrip/FRIAGRIP you can repair the damaged area with two moving joints and a piece of new pipe - this is also the recommendation according to DVGW W-400-3. Angularity of up to 8° offers ideal properties for axial and angular misalignment. When it comes to material transitions, you benefit from maximum material flexibility. An impressive feature, especially useful when installing new PE pipes in existing cast iron pipe networks.



FRIAFLEX

Repair of transversal fractures with axial offset and axial bending

The innovative FRIAFLEX sets previously unimagined standards in the repair of transversal fractures. This applies both to axial misalignment due to tension in the pipe network and to angles between the pipes. Thanks to the special patented seal design and the radial sealing lips, you can even repair pipes with axial misalignment without any tension. And there's even more: in combination with the progressively increasing sealing behaviour, the FRIAFLEX makes tension-free repairs possible even with an angle of up to 8°.

FRIACLAMP

The stainless steel repair clamp for pitting and cracks

Inadequate coating, less noble alloy elements in the pipe material, blowholes, aggressive soils or stray currents - factors that all have one thing in common: fatal consequences. From localised cracks to pitting and surface corrosion. The special gasket design of the FRIACLAMP repair clamp, made of high-quality stainless steel, ensures a secure seal. Reliable and safe with a wide range of pipe materials.



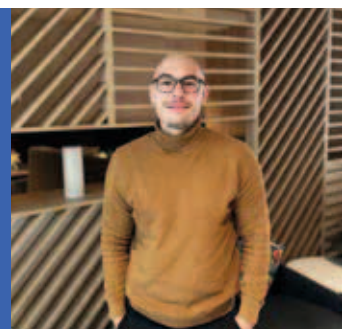
For further information,
please visit our Homepage:

<https://www.aliaxis.de/en/products/friacore>



Your contact

Dennis Kamuf
dennis.kamuf@aliaxis.com



Things worth knowing about FRIACORE connection and repair technology

General application / Certification

FRIACORE connection and repair technology products can be used both in water and gas supply systems depending on the gasket material (EPDM, NBR).

The reference "Other" in the respective product descriptions are other types of water qualities (e.g. industrial water, process water, community wastewater, etc.).

For individual use, especially in the drinking water sector, please refer to the current local regulations (e.g. DVGW).

FRIACORE connection technology can be used to connect pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE 80, PE 100 and PE 100-RC / PEX). For proper use of support liners for PE/PEX pipes, please observe the processing instructions. To make it easier to find the correct clamping range, please use the dimension table for pressure pipes.

The maximum permissible diameter tolerances of the pipes to be joined vary according to product group. Please refer to the accompanying texts for details.

FRIACORE repair technology is suitable for repairing damaged gas and water pipes made of steel, cast iron, ductile iron, asbestos cement, PE and PVC

The scope of the respective certifications of individual products is based on applicability and market requirements. Therefore, please check in each individual case whether the required certification is available for the product in question.



H2 test certificate

Our FRIAGRIP products are H2-ready-100! The scope of application of our FRIAGRIP fittings has been extended to include hydrogen [H2]. This means that products can be used with 100% hydrogen up to MOP 5 bar. This is confirmed by test certificates from DBI - Gastechisches Institut GmbH.

Suitable components are marked with an H2 icon in the price list. Please contact our sales representatives if you are planning to use our products.



Processing instructions

General:

FRIASAFE FSC, FRIAGRIP FGFA, FGK, FGR, FGPA, FGE, FGEG: FRIASAFE and FRIAGRIP components can only be used in underground construction!

Please read our installation instructions for information on special conditions of use, restrictions on installation and the processing of FRIACORE products in general. Our customer service representatives will also be happy to answer any questions you may have.

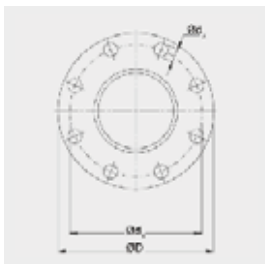
We offer manufacturer-specific training courses in accordance with DVGW GW326 regulations.

Further information such as installation instructions or data sheets can also be found in the download area on our homepage.

Pressure resistance

The maximum permissible operating pressure for FRIACORE connection and repair technology can be found in the accompanying texts. In case of doubt, the information on the component type plate is always decisive.

Flange Dimension DIN EN 1092



Nominal width	Nominal Pressure 10					Nominal Pressure 16				
	D	d ₄	Bolts		d ₂	D	d ₄	Bolts		d ₂
			Quantity	Thread				Quantity	Thread	
25	115	85	4	M12	14	115	85	4	M12	14
32	140	100	4	M16	18	140	100	4	M16	18
40	150	110	4	M16	18	150	110	4	M16	18
50	165	125	4	M16	18	165	125	4	M16	18
65	185	145	4	M16	18	185	145	4	M16	18
80	200	160	8	M16	18	200	160	8	M16	18
100	220	180	8	M16	18	220	180	8	M16	18
125	250	210	8	M16	18	250	210	8	M16	18
150	285	240	8	M20	22	285	240	8	M20	22
(175)	315	270	8	M20	22	315	270	8	M20	22
200	340	295	8	M20	22	340	295	12	M20	22
250	395	350	12	M20	22	405	355	12	M24	26
300	445	400	12	M20	22	460	410	12	M24	26
350	505	460	16	M20	22	520	470	16	M24	26
400	565	515	16	M24	26	580	525	16	M27	30
450	615	565	20	M24	26	640	585	20	M27	30
500	670	620	20	M24	26	715	650	20	M30	33
600	780	725	20	M27	30	840	770	20	M33	36
700	895	840	24	M27	30	910	840	24	M33	36
800	1015	950	24	M30	33	1025	950	24	M36	39
900	1115	1050	28	M30	33	1125	1050	28	M36	39
1000	1230	1160	28	M33	36	1255	1170	28	M39	42
1200	1455	1380	32	M36	39	1485	1390	32	M45	48



Dimension table for pressure pipes

DN	Ductile Iron Pipe DIN 28610	Cast Iron Pipe DIN 2431			Cast Iron (CH)	Steel Pipe			PVC Pipe DIN 8062	PE Pipe DIN 8074	Asbestos Cement Pipe					
		PN 16	PN 25	PN 40		Threaded Pipe	Boiler Pipe	Plug Con- nector +4 mm PE			DIN 19800					
											PN 10		PN 12,5		PN 16	
											cal.	uncal.	cal.	cal.		
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			
32		46			42-43	42,4	44,5		40	40						
40	56	56			51-53	48,3	51,0		50	50						
50	66	66	67	70	62-64	60,3	70,0		63	63						
(60)		77	78	82	72-74											
65	82	77	78	82		76,1			75	75			83	85		
(75)		87	89	92	88-91											
80	98	98	100	104	94-96	88,9	88,9		90	90	98	102	100	104		
(90)		108	112	116	104-108											
100	118	118	122	128	114-116	114,3	108,0	117,5	110/125	110/125	120	128	124	130		
(110)					123-125											
(120)					134-137											
125	144	144	149	155	140-143	139,7	133,0	144,0	140	140	149	154	153	159		
(135)					150-153											
150	170	170	176		166-169	168,3	159,0	168,3	160/180	160/180	178	184	182	190		
(165)					180-184											
175		196	203	213	191-194	193,7	191,0									
(180)					198-200											
(190)					208-211											
200	222	222	230	242	218-222	219,1	216,0	219,1	200/225	200/225	234	243	240	252		
(225)		248	259	271	244-247	229,1	241,0									
250	274	274	286	298	268-273	273,0	267,0	273,0	250/280	250/280	286	288	296	308		
(275)		300	313	327	297-300		292,0									
300	326	326	340	358	322-325	323,9	318,0	323,9	315	315	342	346	352	368		
(325)		352	367	385	348-352		343,0		355	355						
350	378	378	394	412	376-379	355,6	368,0		400	400		404	404	428		
(375)		403	421	441												
400	429	429	448	470	426-430	406,4	419,0		450	450	456	460	470	488		
450	480	480	504		476-480	457,0				500	510		524	546		
500	532	532	558		527-530	508,0			560	560	564		582	606		
(550)		583			581-585				630	630						
600	635	634			631-635	610,0			710	710	678		698	726		
(650)		686				660,4										
700	738	738				711,2			800	800		792				
(750)		790				762,0										
800	842	842				812,8			1000	1000						
900	945	945				914,4										
1000	1048	1048				1016,0			1200	1200		1125				

All statements without guarantee.



FSC

FRIASAFE Pipe Connector



Restrained pipe connector for connecting pressure-pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE-HD/PEX).

- Quick and ergonomic installation
- Stagnation free design
- One gripping system for all pipe materials
- Automatic centering of the pipes
- One fitting per nominal width
- Case, and gripping bands made of stainless steel
- Radial punch made of PP
- Seal material EPDM
- Pressure rating PN16
- Diameter tolerance depending on dimensions up to max. 38 mm
- Temperature range -20°C - +40°C
- Angle of the pipes of max. 6°
- An inner support sleeve is required for PE-HD/PEX pipes with wall thicknesses less than SDR17.6

Note:

Can only be processed with hook spanners
 DN 40 - 80 (Order-No. 770810) or DN 100 - 200 (Order-No. 770812).
 When used on AZ pipes, restrained function cannot be ensured

**Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270 / ACS / WRAS
 PFA/PN water maximum = 16 bar**



DN	d	Order No.	L	Weight [kg]	BX	PU
40	40-64	772101	200	1.400	1	240
50	46-72	772102	200	2.000	1	240
65	63-90	772103	200	2.400	1	144
80	78-105	772105	200	2.800	1	144
100	104-132	772107	240	4.600	1	75
125	130-161	772109	240	5.300	1	75
150	158-192	772111	240	7.400	1	60
200	218-256	772115	240	9.300	1	30

FSC TS

FRIASAFE Hook Spanner



FRIASAFE Hook Spanner for Installation for FRIASAFE.

Short text	Order No.	L	Weight [kg]	BX	PU
DN 40 - 80	770810	480	1.000	1	250
DN 100 - 200	770812	630	2.000	1	250



FSC TK

FRIASAFE Tool Kit

NEW



Content:

- 2 x Hook Spanner DN 40 - DN 80
- 4 x Hook Spanner DN 100 - DN 200
- 1 x Torque Wrench 75 Nm inkl. socket 19 mm
- 1 x Torque Wrench 30 Nm inkl. socket 8 mm
- 1 x Side Cutter
- 2 x Expansions for Torque Wrench

Short text	Order No.	Weight [kg]	BX	PU
DN 40-200	770800	17.000	1	20

FRC

FRIAFLEX Stainless steel repair coupling



Repair coupling made of stainless steel for use on pipes of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, GRP, PE-HD/PEX) in civil engineering.

- Special gasket design for reliable repair on brittle pipe materials such as cast iron
- Patented gasket design ensures largest diameter range
- Double joint and quick release for easy installation
- Stainless steel housing, lock, screws and nuts
- Gasket material EPDM
- Pressure level PN16
- Bending of the tubes up to 8°
- Temperature range -20°C to +40°C

Note:

When used on PEHD/PEX pipes, our SHVA support liner is required. Alternatively, we recommend restrained products such as FRIAGRIP.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
 PFA/PN water maximum = 16 bar



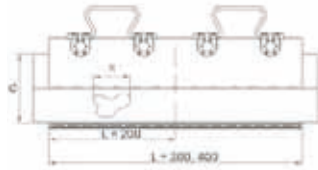
DN	d	PN	Order No.	L	Screws	WS [mm]	Weight [kg]	BX	PU
80	87-109	16	591-087-200	200	M10	17	6.000	1	24
100	104-129	16	591-104-200	200	M10	17	8.000	1	24
150	158-184	16	591-158-200	200	M10	17	11.000	1	24
200	218-243	16	591-218-200	200	M10	17	14.000	1	24



FRIACLAMP

FCE

FRIACLAMP stainless steel repair clamp, one-pieced



One-pieced repair clamp for sealing damaged gas and water pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC).

- Special gasket design for a secure sealing of tapping holes, cracks and corrosion damage
- Body, closure, bolts and nuts made of stainless steel
- Gasket material EPDM or NBR
- Temperature range: -5°C - +40°C

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA/PN water maximum = 16 bar



d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
44-48	16	391-044-200	200	M10	50	17	1.750	10	320
44-48	16	391-044-300	300	M10	150	17	2.740	10	240
48-52	16	391-048-200	200	M10	50	17	1.410	10	320
48-52	16	391-048-300	300	M10	150	17	2.740	10	240
54-58	16	391-054-200	200	M10	50	17	1.410	10	320
54-58	16	391-054-300	300	M10	150	17	2.080	10	240
60-67	16	391-060-200	200	M10	50	17	1.410	10	320
60-67	16	391-060-300	300	M10	150	17	2.800	10	240
70-77	16	391-070-200	200	M10	50	17	2.800	9	288
70-77	16	391-070-300	300	M10	150	17	2.960	9	216
75-83	16	391-075-200	200	M10	50	17	1.500	9	288
75-83	16	391-075-300	300	M10	150	17	2.260	9	216
82-89	16	391-082-200	200	M10	50	17	1.540	9	288
82-89	16	391-082-300	300	M10	150	17	2.580	9	216
82-89	16	391-082-400	400	M10	250	17	4.000	9	96
87-95	16	391-087-200	200	M10	50	17	1.600	9	288
87-95	16	391-087-300	300	M10	150	17	2.440	9	216
87-95	16	391-087-400	400	M10	250	17	4.130	9	96
88-98	16	391-088-200	200	M10	50	17	2.020	8	256
88-98	16	391-088-300	300	M10	150	17	3.020	8	192
95-104	16	391-095-200	200	M10	50	17	1.780	6	192
95-104	16	391-095-300	300	M10	150	17	2.560	6	144
95-104	16	391-095-400	400	M10	250	17	1.780	6	96
108-118	16	391-108-200	200	M10	50	17	1.780	6	144
108-118	16	391-108-300	300	M10	150	17	2.730	6	144
108-118	16	391-108-400	400	M10	250	17	1.780	6	96
113-123	16	391-113-200	200	M10	50	17	2.280	5	160
113-123	16	391-113-300	300	M10	150	17	3.650	5	120
113-123	16	391-113-400	400	M10	250	17	3.650	5	80
118-128	16	391-118-200	200	M10	50	17	1.890	5	160
118-128	16	391-118-300	300	M10	150	17	2.860	5	120
118-128	16	391-118-400	400	M10	250	17	5.000	5	80
120-131	16	391-120-200	200	M10	50	17	2.390	5	160
120-131	16	391-120-300	300	M10	150	17	3.700	5	90
132-142	16	391-132-200	200	M12	50	19	2.320	4	128
132-142	16	391-132-300	300	M12	150	19	3.830	4	96
135-145	16	391-135-200	200	M12	50	19	2.320	4	128
135-145	16	391-135-300	300	M12	150	19	3.490	4	96
139-149	16	391-139-200	200	M12	50	19	2.370	4	128
139-149	16	391-139-300	300	M12	150	19	3.560	4	96
139-149	16	391-139-400	400	M12	250	19	3.560	1	64
145-155	16	391-145-200	200	M12	50	19	2.570	4	128
145-155	16	391-145-300	300	M12	150	19	3.660	4	96
159-170	16	391-159-200	200	M12	50	19	2.530	3	96
159-170	16	391-159-300	300	M12	150	19	3.730	3	72
159-170	16	391-159-400	400	M12	250	19	2.530	3	48
167-178	16	391-167-200	200	M12	50	19	2.580	3	96
167-178	16	391-167-300	300	M12	150	19	3.920	3	72
167-178	16	391-167-400	400	M12	250	19	5.170	3	48



FRIACLAMP

FCE

FRIACLAMP stainless steel repair clamp, one-pieced

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA/PN water maximum = 16 bar



d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
176-187	16	391-176-200	200	M12	50	19	2.810	3	96
176-187	16	391-176-300	300	M12	150	19	3.150	3	72
176-187	16	391-176-400	400	M12	250	19	6.100	3	48
193-203	10	391-193-200	200	M12	50	19	4.520	1	36
193-203	10	391-193-300	300	M12	150	19	4.520	1	36
215-225	10	391-215-200	200	M12	50	19	3.150	1	32
215-225	10	391-215-300	300	M12	150	19	4.760	1	24
215-225	10	391-215-400	400	M12	250	19	3.150	1	16
228-239	10	391-228-300	300	M12	150	19	6.380	1	24
240-250	10	391-240-300	300	M12	150	19	5.400	1	24
261-271	10	391-261-300	300	M12	150	19	5.650	1	24
269-280	10	391-269-300	300	M12	150	19	5.750	1	24
280-291	10	391-280-300	300	M12	150	19	5.890	1	24
315-325	10	391-315-300	300	M12	150	19	6.320	1	24
320-330	10	391-320-300	300	M12	150	19	6.380	1	24

Gasket NBR, DIN-EN 682

MOP gas maximum = 5 bar

Other water qualities maximum = 16 bar



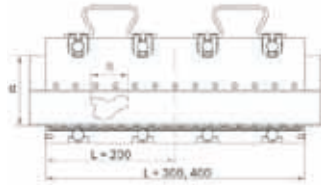
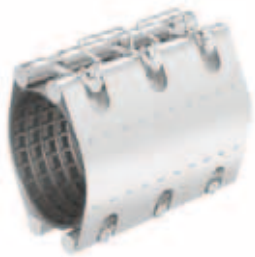
d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
44-48	5	381-044-200	200	M10	50	17	1.750	10	320
48-52	5	381-048-200	200	M10	50	17	1.330	10	320
48-52	5	381-048-300	300	M10	150	17	2.740	10	240
54-58	5	381-054-200	200	M10	50	17	1.380	10	320
54-58	5	381-054-300	300	M10	150	17	2.080	10	240
60-67	5	381-060-200	200	M10	50	17	1.410	10	320
60-67	5	381-060-300	300	M10	150	17	2.800	10	240
70-77	5	381-070-200	200	M10	50	17	1.470	9	288
75-83	5	381-075-200	200	M10	50	17	1.500	9	288
75-83	5	381-075-300	300	M10	150	17	2.260	9	216
82-89	5	381-082-200	200	M10	50	17	1.540	9	288
82-89	5	381-082-300	300	M10	150	17	2.320	9	216
87-95	5	381-087-200	200	M10	50	17	1.600	9	288
87-95	5	381-087-300	300	M10	150	17	2.440	9	216
88-98	5	381-088-200	200	M10	50	17	2.020	8	256
95-104	5	381-095-200	200	M10	50	17	1.710	6	192
95-104	5	381-095-300	300	M10	150	17	2.560	6	144
108-118	5	381-108-200	200	M10	50	17	1.780	6	144
108-118	5	381-108-300	300	M10	150	17	2.730	6	144
108-118	5	381-108-400	400	M10	250	17	3.600	6	96
113-123	5	381-113-200	200	M10	50	17	2.280	5	160
113-123	5	381-113-300	300	M10	150	17	2.740	5	120
113-123	5	381-113-400	400	M10	250	17	3.650	5	80
120-131	5	381-120-200	200	M10	250	17	2.390	5	160
132-142	5	381-132-200	200	M12	50	19	2.320	4	128
132-142	5	381-132-300	300	M12	150	19	3.830	4	96
135-145	5	381-135-300	300	M12	150	19	3.490	4	96
139-149	5	381-139-300	300	M12	150	19	3.560	4	96
159-170	5	381-159-200	200	M12	50	19	2.530	3	96
159-170	5	381-159-300	300	M12	150	19	3.730	3	72
159-170	5	381-159-400	400	M12	250	19	4.800	3	48
167-178	5	381-167-200	200	M12	50	19	2.580	3	96
167-178	5	381-167-300	300	M12	150	19	3.920	3	72
167-178	5	381-167-400	400	M12	250	19	5.170	3	48
215-225	5	381-215-200	200	M12	50	19	3.150	1	32
215-225	5	381-215-300	300	M12	150	19	4.760	1	24
215-225	5	381-215-400	400	M12	250	19	6.500	1	16
269-280	5	381-269-300	300	M12	150	19	5.750	1	24
320-330	5	381-320-300	300	M12	150	19	6.380	1	24



FRIACLAMP

FCZ

FRIACLAMP stainless steel repair clamp, two-pieced



Two-pieced repair clamp for sealing damaged gas and water pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC).

- Special gasket design for a secure sealing of tapping holes, cracks and corrosion damage
- Body, closure, bolts and nuts made of stainless steel
- Gasket material EPDM or NBR
- Temperature range: -5°C - +40°C

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA/PN water, maximum = 16 bar



d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
88-110	16	392-088-200	200	M10	50	17	2.620	6	192
88-110	16	392-088-300	300	M10	150	17	5.560	6	144
88-110	16	392-088-400	400	M10	250	17	7.490	6	96
100-120	16	392-100-200	200	M10	50	17	2.710	4	192
100-120	16	392-100-300	300	M10	150	17	5.740	4	144
100-120	16	392-100-400	400	M10	250	17	7.730	4	96
108-128	16	392-108-200	200	M10	50	17	2.740	4	128
108-128	16	392-108-300	300	M10	150	17	1.780	4	96
108-128	16	392-108-400	400	M10	250	17	5.460	4	64
114-134	16	392-114-200	200	M10	50	17	3.830	4	128
114-134	16	392-114-300	300	M10	150	17	4.270	4	96
114-134	16	392-114-400	400	M10	250	17	8.040	4	64
120-140	16	392-120-200	200	M10	50	17	2.970	4	128
120-140	16	392-120-300	300	M10	150	17	6.040	4	96
120-140	16	392-120-400	400	M10	250	17	8.120	4	64
130-150	16	392-130-200	200	M12	50	19	3.510	3	64
130-150	16	392-130-300	300	M12	150	19	5.350	3	48
130-150	16	392-130-400	400	M12	250	19	1.780	3	16
140-160	16	392-140-200	200	M12	50	19	3.610	3	64
140-160	16	392-140-300	300	M12	150	19	6.260	3	48
140-160	16	392-140-400	400	M12	250	19	8.410	3	16
159-180	16	392-159-200	200	M12	50	19	3.740	2	64
159-180	16	392-159-300	300	M12	150	19	6.520	2	48
159-180	16	392-159-400	400	M12	250	19	8.760	2	16
168-189	16	392-168-200	200	M12	50	19	4.260	2	64
168-189	16	392-168-300	300	M12	150	19	6.620	2	48
168-189	16	392-168-400	400	M12	250	19	8.890	2	16
190-210	16	392-190-200	200	M12	50	19	5.900	2	64
190-210	16	392-190-300	300	M12	150	19	6.860	2	48
190-210	16	392-190-400	400	M12	250	19	9.210	2	16
210-230	10	392-210-200	200	M12	50	19	6.600	1	32
210-230	10	392-210-300	300	M12	150	19	6.810	1	24
210-230	10	392-210-400	400	M12	250	19	9.930	1	16
218-238	10	392-218-200	200	M12	50	19	4.590	1	32
218-238	10	392-218-300	300	M12	150	19	6.970	1	24
218-238	10	392-218-400	400	M12	250	19	10.060	1	16
240-260	10	392-240-200	200	M12	50	19	7.000	1	32
240-260	10	392-240-300	300	M12	150	19	7.170	1	24
240-260	10	392-240-400	400	M12	250	19	10.420	1	16
269-289	10	392-269-200	200	M12	50	19	7.200	1	32
269-289	10	392-269-300	300	M12	150	19	7.570	1	24
269-289	10	392-269-400	400	M12	250	19	10.890	1	16
282-302	10	392-282-200	200	M12	50	19	5.440	1	32
282-302	10	392-282-300	300	M12	150	19	8.280	1	24
282-302	10	392-282-400	400	M12	250	19	11.110	1	16
315-335	10	392-315-200	200	M12	50	19	5.770	1	32
315-335	10	392-315-300	300	M12	150	19	11.650	1	24
315-335	10	392-315-400	400	M12	250	19	11.650	1	16



FRIACLAMP

FCZ

FRIACLAMP stainless steel repair clamp, two-pieced

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA/PN water, maximum = 16 bar



d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
322-344	10	392-322-300	300	M12	150	19	8.770	1	24
322-344	10	392-322-400	400	M12	250	19	12.000	1	16
337-358	6	392-337-300	300	M12	150	19	11.650	1	24
337-358	6	392-337-400	400	M12	250	19	11.760	1	36
347-367	6	392-347-300	300	M12	150	19	6.090	1	36
347-367	6	392-347-400	400	M12	250	19	6.090	1	16
365-385	5	392-365-400	400	M12	250	19	12.460	1	32
410-430	5	392-410-400	400	M12	250	19	13.360	1	24
420-440	5	392-420-400	400	M12	250	19	11.650	1	16

Gasket NBR, DIN-EN 682

MOP gas according to table, maximum = 5 bar

Other water qualities according to table, maximum = 16 bar

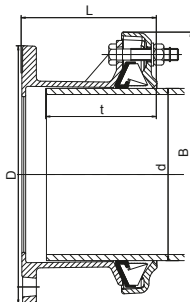


d	PN	Order No.	L	Screws	R	WS [mm]	Weight [kg]	BX	PU
88-110	5	382-088-200	200	M10	50	17	2.620	6	192
88-110	5	382-088-300	300	M10	150	17	4.000	6	144
88-110	5	382-088-400	400	M10	250	17	7.490	6	96
100-120	5	382-100-300	300	M10	150	17	5.740	4	144
108-128	5	382-108-200	200	M10	50	17	2.740	4	128
108-128	5	382-108-300	300	M10	150	17	4.170	4	96
108-128	5	382-108-400	400	M10	250	17	5.460	4	64
114-134	5	382-114-300	300	M10	150	17	4.270	4	96
120-140	5	382-120-200	200	M10	50	17	2.970	4	128
130-150	5	382-130-200	200	M12	50	19	3.510	3	64
130-150	5	382-130-300	300	M12	150	19	5.350	3	48
140-160	5	382-140-200	200	M12	50	19	3.610	3	64
140-160	5	382-140-300	300	M12	150	19	6.260	3	48
159-180	5	382-159-200	200	M12	50	19	3.740	2	64
159-180	5	382-159-300	300	M12	150	19	6.520	2	48
159-180	5	382-159-400	400	M12	250	19	8.760	2	16
168-189	5	382-168-300	300	M12	150	19	6.620	2	48
190-210	5	382-190-200	200	M12	50	19	5.900	2	64
210-230	5	382-210-200	200	M12	50	19	6.600	1	32
210-230	5	382-210-300	300	M12	150	19	6.810	1	24
218-238	5	382-218-300	300	M12	150	19	6.970	1	24
218-238	5	382-218-400	400	M12	250	19	10.060	1	16
269-289	5	382-269-300	300	M12	150	19	7.570	1	24
269-289	5	382-269-400	400	M12	250	19	10.890	1	16
315-335	5	382-315-300	300	M12	150	19	8.080	1	24



FGFA

UltraGrip Flange Adaptor



Restrained flange adaptor for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) in civil engineering.

- Housing and bonnet made of ductile iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm according to GSK)
- One gripping system for all pipe materials gripping segment made of acetal, corundum coated
- Sealing material EPDM or NBR
- Diameter range depending on size up to max. 54 mm
- Stainless steel or galvanized screws and nuts
- Angular deflection of 4 degrees
- Flange connection dimensions according to DIN EN1092, PN 10 and PN 16
- Temperature range: -20°C - +30°C

A notice:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.
When used on AZ pipes, restrained cannot be entirely ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270 PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Flange DN	Flange PN	Order No.	D	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	40	10/16	672000	150	168	148	3 x 670601	65	110	4.200	4	96
40	43,5-63,5	50	10/16	672001	165	168	144	3 x 670601	65	110	4.200	4	96
50	48,0-71,0	50	10/16	672002	165	178	153	3 x 670603	65	110	5.200	1	96
65	63,0-83,7	65	10/16	672003	185	189	144	3 x 670601	65	110	5.200	4	96
80	85,7-107,0	80	10/16	672005	200	212	144	3 x 670601	65	110	6.200	2	60
100	107,2-133,2	100	10/16	672007	220	280	192	3 x 670707	90	125	10.000	2	36
125	132,2-160,2	125	10/16	672009	252	305	173	3 x 670707	90	135	11.600	2	24
150	158,2-192,2	150	10/16	672011	285	339	212	4 x 670707	90	125	14.750	1	18
175	192,2-226,9	200	10/16	672013	340	403	240	5 x 670707	125	165	25.000	1	18
200	218,1-256,0	200	10/16	672015	340	432	240	5 x 670707	125	165	22.600	1	12
250	266,2-310,2	250	10/16	672017	400	476	303	6 x 670609	125	165	38.000	1	4
300	315,0-356,0	300	10/16	672019	470	522	304	8 x 670609	125	200	42.500	1	4
350	352,2-396,0	350	10/16	672021	520	577	313	9 x 670717	125	200	50.000	1	
400	398,2-442,0	400	10/16	672023	580	623	313	10 x 670717	125	200	60.000	1	
400+	448,0-492,0	400	10/16	672025	580	713	413	12 x 670619	125	200	135.000	1	
500	498,0-552,0	500	10/16	672027	715	803	398	9 x 670719	140	215	109.000	1	
500+	558,0-608,0	500	10/16	672029	715	860	448	10 x 670719	140	215	125.000	1	
600	604,0-648,0	600	10/16	672031	840	900	410	12 x 670719	195	255	101.000	1	
600+	676,0-726,0	600	10/16	672033	840	975	470	14 x 670719	195	255	165.000	1	

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

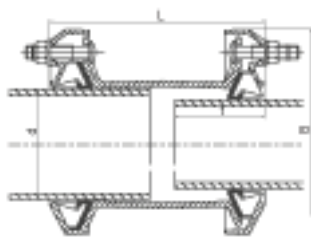
Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Flange DN	Flange PN	Order No.	D	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	40	10/16	670000	150	168	148	3 x 670601	65	110	4.200	4	96
40	43,5-63,5	50	10/16	670001	165	168	144	3 x 670601	65	110	4.200	4	96
50	48,0-71,0	50	10/16	670002	165	178	153	3 x 670603	65	110	4.820	4	96
65	63,0-83,7	65	10/16	670003	185	189	144	3 x 670601	65	110	5.840	4	96
80	85,7-107,0	80	10/16	670005	200	212	144	3 x 670601	65	110	6.200	2	60
100	107,2-133,2	100	10/16	670007	220	280	192	3 x 670707	90	125	10.000	2	36
125	132,2-160,2	125	10/16	670009	252	305	173	3 x 670707	90	135	11.600	2	24
150	158,2-192,2	150	10/16	670011	285	339	212	4 x 670707	90	125	16.050	1	18
175	192,2-226,9	200	10/16	670013	340	403	240	5 x 670707	125	165	16.600	1	18
200	218,1-256,0	200	10/16	670015	340	432	240	5 x 670707	125	165	22.600	1	12
250	266,2-310,2	250	10/16	670017	400	476	303	6 x 670609	125	165	33.800	1	4
300	315,0-356,0	300	10/16	670019	470	522	304	8 x 670609	125	200	42.500	1	4
350	352,2-396,0	350	10/16	670021	520	577	313	9 x 670717	125	200	50.000	1	1
400	398,2-442,0	400	10/16	670023	580	623	313	10 x 670717	125	200	60.000	1	1

FGK

FRIAGRIP coupling (U-piece)



Restrained coupling for connecting pipes of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Body and ring are made of ductile cast iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20°C - +30°C

Note:

For application on PE-HD-/PEX-pipes our inner support liner SHVA is required.

When used on Asbestos cement pipes, the restrained locking cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	672101	168	222	3 x 670601 / 3 x 670601	65	95	5.760	5	90
50	48,0-71,0	672102	178	256	3 x 670603 / 3 x 670603	65	110	4.700	1	72
65	63,0-83,7	672103	189	222	3 x 670601 / 3 x 670601	65	95	5.100	4	72
80	85,7-107,0	672105	212	248	3 x 670601 / 3 x 670601	65	110	7.400	1	30
100	107,2-133,2	672107	280	296	3 x 670707 / 3 x 670707	90	125	12.600	1	24
125	132,2-160,2	672109	305	296	3 x 670707 / 3 x 670707	90	125	14.100	1	12
150	158,2-192,2	672111	339	340	4 x 670707 / 4 x 670707	90	135	17.600	1	12
175	192,2-226,9	672113	403	347	5 x 670707 / 5 x 670707	125	165	33.220	1	12
200	218,1-256,0	672115	432	347	5 x 670707 / 5 x 670707	125	165	34.900	1	8
250	266,2-310,2	672117	476	484	6 x 670717 / 6 x 670717	125	165	51.800	1	2
300	315,0-356,0	672119	522	484	8 x 670717 / 8 x 670717	125	200	58.900	1	2
350	352,2-396,0	672121	577	485	9 x 670717 / 9 x 670717	125	200	60.000	1	1
400	398,2-442,0	672123	623	485	10 x 670717 / 10 x 670717	125	200	70.000	1	1
400+	448,0-492,0	672125	713	545	12 x 670619 / 12 x 670619	125	200	135.000	1	1
500	498,0-552,0	672127	803	565	9 x 670719 / 9 x 670719	140	215	142.000	1	1
500+	558,0-608,0	672129	860	565	10 x 670719 / 10 x 670719	140	215	162.000	1	1
600	604,0-648,0	672131	900	605	12 x 670719 / 12 x 670719	195	255	181.000	1	1
600+	676,0-726,0	672133	975	605	14 x 670719 / 14 x 670719	195	255	202.000	1	1

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar

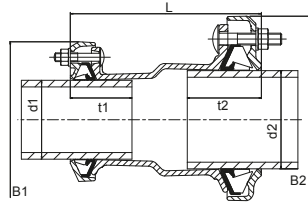


DN	d	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	670101	168	222	3 x 670601 / 3 x 670601	65	95	5.760	5	90
50	48,0-71,0	670102	178	256	3 x 670603 / 3 x 670603	65	110	4.700	1	72
65	63,0-83,7	670103	189	222	3 x 670601 / 3 x 670601	65	95	6.860	4	72
80	85,7-107,0	670105	212	248	3 x 670601 / 3 x 670601	65	110	7.400	1	30
100	107,2-133,2	670107	280	296	3 x 670707 / 3 x 670707	90	125	12.600	1	24
125	132,2-160,2	670109	305	296	3 x 670707 / 3 x 670707	90	125	14.100	1	12
150	158,2-192,2	670111	339	340	4 x 670707 / 4 x 670707	90	135	17.600	1	12
175	192,2-226,9	670113	403	347	5 x 670707 / 5 x 670707	125	165	21.800	1	12
200	218,1-256,0	670115	432	347	5 x 670707 / 5 x 670707	125	165	37.500	1	8
250	266,2-310,2	670117	476	484	6 x 670717 / 6 x 670717	125	165	51.800	1	2
300	315,0-356,0	670119	522	484	8 x 670717 / 8 x 670717	125	200	58.900	1	2
350	352,2-396,0	670121	577	485	9 x 670717 / 9 x 670717	125	200	60.000	1	1
400	398,2-442,0	670123	623	485	10 x 670717 / 10 x 670717	125	200	70.000	1	1



FGR

FRIAGRIP Reducer-Coupling



Restrained Reducer-coupling for connecting pipes of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Body and ring are made of ductile cast iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20°C - +30°C

Note:

For application on PE-HD-/PEX-pipes our inner support liner SHVA is required.

When used on Asbestos cement pipes, the restrained locking cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d ₁	d ₂	Order No.	B ₁	L	Screws	t _{1 min}	t _{1 max}	t _{2 min}	t _{2 max}	Weight [kg]	BX	PU
32/40	36,0-46,0	43,5-63,5	672401	153	226	3 x 670603 / 3 x 670603	65	95	65	95	4.640	5	90
80/100	85,7-107,0	107,2-133,2	672405	212	282	3 x 670603 / 3 x 670707	65	95	65	95	10.300	1	24
100/125	107,2-133,2	132,2-160,2	672407	280	306	3 x 670707 / 3 x 670707	90	125	90	115	14.200	1	12
100/150	107,2-133,2	158,2-192,2	672408	280	319	3 x 670707 / 4 x 670707	90	115	90	135	17.000	1	12
125/150	132,2-160,2	158,2-192,2	672409	305	319	3 x 670707 / 4 x 670707	90	115	90	135	17.500	1	12
150/175	158,2-192,2	192,2-226,9	672411	339	347	4 x 670707 / 5 x 670707	90	125	90	135	24.800	1	12
175/200	192,2-226,9	218,1-256,0	672413	403	347	5 x 670707 / 5 x 670707	125	155	125	165	34.200	1	8
200/250	218,1-256,0	266,2-310,2	672415	432	436	5 x 670707 / 6 x 670717	125	165	125	165	42.600	1	8
250/300	266,2-310,2	315,0-356,0	672417	476	524	6 x 670717 / 8 x 670717	125	165	125	200	42.600	1	4
400/400+	398,0-442,0	448,0-492,0	672423	623	575	10 x 670717 / 12 x 670619	125	200	125	200	122.000	1	1
500/500+	498,0-552,0	558,0-608,0	672427	803	595	9 x 670619 / 10 x 670619	140	215	140	215	156.000	1	1
600/600+	604,0-648,0	676,0-726,0	672431	900	635	12 x 670619 / 14 x 670619	195	255	195	255	100.000	1	1

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar



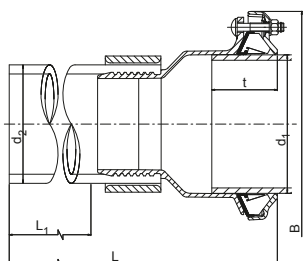
DN	d ₁	d ₂	Order No.	B ₁	L	Screws	t _{1 min}	t _{1 max}	t _{2 min}	t _{2 max}	Weight [kg]	BX	PU
32/40	36,0-46,0	43,5-63,5	670401	153	226	3 x 670603 / 3 x 670603	65	95	65	95	4.640	5	90
80/100	85,7-107,0	107,2-133,2	670405	212	282	3 x 670603 / 3 x 670707	65	95	65	95	10.300	1	24
100/125	107,2-133,2	132,2-160,2	670407	280	306	3 x 670707 / 3 x 670707	90	125	90	115	14.200	1	12
100/150	107,2-133,2	158,2-192,2	670408	280	319	3 x 670707 / 4 x 670707	90	115	90	135	17.000	1	12
125/150	132,2-160,2	158,2-192,2	670409	305	319	3 x 670707 / 4 x 670707	90	115	90	135	17.500	1	12
150/175	158,2-192,2	192,2-226,9	670411	339	347	4 x 670707 / 5 x 670707	90	125	90	135	24.800	1	12
175/200	192,2-226,9	218,1-256,0	670413	403	347	5 x 670707 / 5 x 670707	125	155	125	165	37.200	1	8
200/250	218,1-256,0	266,2-310,2	670415	432	436	5 x 670707 / 6 x 670717	125	165	125	165	42.600	1	8
250/300	266,2-310,2	315,0-356,0	670417	476	524	6 x 670717 / 8 x 670717	125	165	125	200	42.600	1	4

FRIACORE



FGPA

FRIAGRIP PE-Adaptor



Restrained transition-coupling made of PE100 SDR11 for connecting pipes of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and ring are made of ductile cast iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20°C - +30°C

Note:

For application on PE-HD-/PEX-pipes our inner support liner SHVA is required.

When used on Asbestos cement pipes, the restrained locking cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d ₁	d ₂	Order No.	B	L	L1	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
80	85,7-107,0	90	673005	212	662	496	3 x 670601	65	95	6.800	1	24
100	107,2-133,2	110	673007	280	685	496	3 x 670707	90	115	12.000	1	12
100	107,2-133,2	125	673008	280	678	496	3 x 670707	90	115	12.700	1	12
125	132,2-160,2	110	673009	305	704	496	3 x 670707	90	115	13.500	1	12
125	132,2-160,2	125	673010	305	698	496	3 x 670707	90	115	14.200	1	12
150	158,2-192,2	160	673011	339	707	496	4 x 670707	90	125	16.000	1	8
150	158,2-192,2	180	673012	339	704	496	4 x 670707	90	125	23.800	1	6
200	218,1-256,0	225	673015	432	728	496	5 x 670707	125	165	37.000	1	4

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar

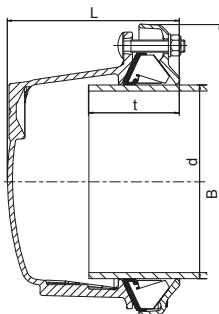


DN	d ₁	d ₂	Order No.	B	L	L1	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
80	85,7-107,0	90	671005	212	662	496	3 x 670601	65	95	6.800	1	24
100	107,2-133,2	110	671007	280	685	496	3 x 670707	90	115	12.000	1	12
100	107,2-133,2	125	671008	280	678	496	3 x 670707	90	115	12.700	1	12
125	132,2-160,2	110	671009	305	704	496	3 x 670707	90	115	13.500	1	12
125	132,2-160,2	125	671010	305	698	496	3 x 670707	90	115	14.200	1	12
150	158,2-192,2	160	671011	339	707	496	4 x 670707	90	125	20.600	1	8
150	158,2-192,2	180	671012	339	704	496	4 x 670707	90	125	23.800	1	6
200	218,1-256,0	225	671015	432	728	496	5 x 670707	125	165	37.000	1	4



FGE

FRIAGRIP End-Cap



Restrained end-cap to close and seal pipes constantly or to cut off pipes temporarily connecting pipes of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and ring are made of ductile cast iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20°C - +30°C

Note:

For application on PE-HD-/PEX-pipes our inner support liner SHVA is required.

When used on Asbestos cement pipes, the restrained locking cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270 PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	672201	168	140	3 x 670603	65	95	2.800	4	96
65	63,0-83,7	672203	189	140	3 x 670603	65	95	3.300	4	96
80	85,7-107,0	672205	212	156	3 x 670603	65	110	4.200	4	96
100	107,2-133,2	672207	280	184	3 x 670707	90	125	8.050	2	48
125	132,2-160,2	672209	305	202	3 x 670707	90	135	9.600	1	18
150	158,2-192,2	672211	339	206	4 x 670707	90	135	11.800	1	18
175	192,2-226,9	672213	403	222	5 x 670707	125	165	13.800	1	8
200	218,1-256,0	672215	432	224	5 x 670707	125	165	18.800	1	4
250	266,2-310,2	672217	476	299	6 x 670717	125	165	32.200	1	4
300	315,0-356,0	672219	522	300	8 x 670717	125	200	40.000	1	4

Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar

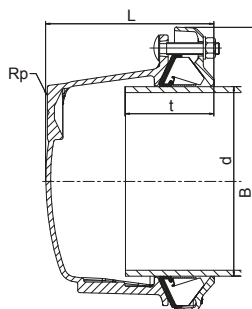


DN	d	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	670201	168	140	3 x 670603	65	95	2.800	4	96
65	63,0-83,7	670203	189	140	3 x 670603	65	95	3.300	4	96
80	85,7-107,0	670205	212	156	3 x 670603	65	110	4.200	4	96
100	107,2-133,2	670207	280	184	3 x 670707	90	125	8.050	2	48
125	132,2-160,2	670209	305	202	3 x 670707	90	135	9.600	1	18
150	158,2-192,2	670211	339	206	4 x 670707	90	135	11.800	1	18
175	192,2-226,9	670213	403	222	5 x 670707	125	165	13.800	1	8
200	218,1-256,0	670215	432	224	5 x 670707	125	165	18.800	1	4
250	266,2-310,2	670217	476	299	6 x 670717	125	165	32.200	1	4
300	315,0-356,0	670219	522	300	8 x 670717	125	200	40.000	1	4



FGEG

FRIAGRIP End-cap with internal thread



Restrained end-cap with internal thread to close and seal pipes constantly or to cut off pipes temporarily connecting pipes of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and ring are made of ductile cast iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm acc. GSK).
- Progressive Gripping Mechanism increases its end load restraint capability as the internal pressure in the pipe. One gripper system suits all recommended pipe materials and offers full end load resistance at full angular deflection.
- Carriers made of acetal, gripping segment made of acetal, corundum-coated
- Gasket material EPDM or NBR
- Diameter tolerance dimensionally dependent up to max. 54 mm
- Nuts and Bolts made of stainless steel.
- Maximum pipe deflection 8°
- Temperature range: -20°C - +30°C

Note:

For application on PE-HD-/PEX-pipes our inner support liner SHVA is required.

When used on Asbestos cement pipes, the restrained locking cannot be ensured.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Rp	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	2"	672301	168	140	3 x 670603	65	95	2.800	4	96
40	43,5-63,5	1 1/4"	672302	168	140	3 x 670603	65	95	2.800	4	96
65	63,0-83,7	2"	672303	189	140	3 x 670603	65	95	3.300	4	96
65	63,0-83,7	1 1/2"	672304	189	140	3 x 670603	65	95	3.300	4	96
80	85,7-107,0	2"	672305	212	156	3 x 670603	65	110	4.200	4	96
100	107,2-133,2	2"	672307	280	184	3 x 670707	90	125	7.600	2	48
125	132,2-160,2	2"	672309	305	202	3 x 670707	90	135	9.600	1	18
150	158,2-192,2	2"	672311	339	206	4 x 670707	90	135	11.800	1	18
175	192,2-226,9	2"	672313	403	222	5 x 670707	125	165	18.800	1	8
200	218,1-256,0	2"	672315	432	224	5 x 670707	125	165	18.800	1	4
250	266,2-310,2	2"	672317	476	299	6 x 670717	125	165	32.200	1	4
300	315,0-356,0	2"	672319	522	300	8 x 670717	125	200	38.600	1	4

Nuts and bolts galvanized and sheraplex coated Gasket NBR, DIN-EN 682

MOP Gas: up to DN 400 = 5 bar

Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Rp	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	2"	670301	168	140	3 x 670603	65	95	2.800	4	96
40	43,5-63,5	1 1/4"	670302	168	140	3 x 670603	65	95	2.800	4	96
65	63,0-83,7	2"	670303	189	140	3 x 670603	65	95	3.300	4	96
80	85,7-107,0	2"	670305	212	156	3 x 670603	65	110	4.200	4	96
100	107,2-133,2	2"	670307	280	184	3 x 670707	90	125	7.600	2	48
125	132,2-160,2	2"	670309	305	202	3 x 670707	90	135	9.600	1	18
150	158,2-192,2	2"	670311	339	206	4 x 670707	90	135	12.750	1	18
175	192,2-226,9	2"	670313	403	222	5 x 670707	125	165	18.800	1	8
200	218,1-256,0	2"	670315	432	224	5 x 670707	125	165	18.800	1	4
250	266,2-310,2	2"	670317	476	299	6 x 670717	125	165	32.200	1	4
300	315,0-356,0	2"	670319	522	300	8 x 670717	125	200	38.600	1	4



Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
 PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Rp	Order No.	B	L	Screws	t _{min}	t _{max}	Weight [kg]	BX	PU
40	43,5-63,5	2"	672351	168	140	3 x 670603	65	95	3.000	1	96
40	43,5-63,5	1 1/4"	672352	168	140	3 x 670603	65	95	3.000	1	96
65	63,0-83,7	2"	672353	189	140	3 x 670603	65	95	4.000	1	96
65	63,0-83,7	1 1/2"	672354	189	140	3 x 670603	65	95	4.000	1	96
80	85,7-107,0	2"	672355	212	156	3 x 670603	65	110	4.000	1	96
100	107,2-133,2	2"	672357	280	184	3 x 670707	90	125	8.000	1	48
125	132,2-160,2	2"	672359	305	202	3 x 670707	90	135	10.000	1	18
150	158,2-192,2	2"	672361	339	206	4 x 670707	90	135	13.000	1	18
175	192,2-226,9	2"	672363	403	222	5 x 670707	125	165	19.000	1	8
200	218,1-256,0	2"	672365	432	224	5 x 670707	125	165	21.000	1	4
250	266,2-310,2	2"	672367	476	299	6 x 670717	125	165	32.000	1	4
300	315,0-356,0	2"	672369	522	300	8 x 670717	125	200	39.000	1	4

UGFA

UltraGrip Flange Adaptor

NEW



Restrained flange adapter for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) in civil engineering.

- Housing and follower-ring made of ductile iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm according to GSK)
- One gripping system for all pipe materials gripping segment made of acetal, corundum coated
- Sealing material EPDM
- Diameter range depending on size up to max. 35 mm
- Stainless steel or galvanized screws and nuts
- Angular deflection of 4 degrees
- Flange connection dimensions according to DIN EN1092, PN 10 and PN 16
- Temperature range: -20°C - +30°C

A notice:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.
When used on AZ pipes, restrained cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: 16 bars

DN	d	Flange DN	Flange PN	Order No.	Weight [kg]	BX
700	700-735	600	16	VJ35160	413.000	1
700	700-735	700	16	VJ35161	437.000	1
700	727-762	700	16	VJ35162	454.000	1
700	750-785	700	16	VJ35163	455.000	1
800	789-824	700	16	VJ35164	484.000	1
800	789-824	800	16	VJ35166	536.000	1
800	825-860	800	16	VJ35167	559.000	1
800	853-888	800	16	VJ35168	559.000	1
800	892-927	800	16	VJ35170	559.000	1
900	892-927	900	16	VJ35171	559.000	1
700	700-735	600	10	VJ35460	437.000	1
700	700-735	700	10	VJ35461	437.000	1
700	727-762	700	10	VJ35462	454.000	1
700	750-785	700	10	VJ35463	455.000	1
800	789-824	700	10	VJ35464	484.000	1
800	789-824	800	10	VJ35466	484.000	1
800	825-860	800	10	VJ35467	559.000	1
800	853-888	800	10	VJ35468	559.000	1
800	892-927	800	10	VJ35470	559.000	1
900	892-927	900	10	VJ35471	559.000	1



UltraGrip Amplified

UGK

UltraGrip Amplified Coupling

NEW



Restrained coupling for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) in civil engineering.

- Housing and follower-ring made of ductile iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm according to GSK)
- One gripping system for all pipe materials gripping segment made of acetal, corundum coated
- Sealing material EPDM
- Diameter range depending on size up to max. 35 mm
- Stainless steel or galvanized screws and nuts
- Angular deflection of 4 degrees
- Flange connection dimensions according to DIN EN1092, PN 10 and PN 16
- Temperature range: -20°C - +30°C

A notice:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.
When used on AZ pipes, restrained cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: 16 bars

DN	d	PN	Order No.	Weight [kg]	BX
700	700-735	16	VJ35060	559.000	1
700	727-762	16	VJ35061	591.000	1
700	750-785	16	VJ35062	592.000	1
800	789-824	16	VJ35063	638.000	1
800	825-860	16	VJ35064	684.000	1
800	853-888	16	VJ35065	680.000	1

UGR

UltraGrip Amplified Reducer Coupling

NEW



Restrained reducer-coupling for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX) in civil engineering.

- Housing and follower-ring made of ductile iron (EN-GS-450-10)
- Corrosion protection Rilsan (min. 250 µm according to GSK)
- One gripping system for all pipe materials gripping segment made of acetal, corundum coated
- Sealing material EPDM
- Diameter range depending on size up to max. 35 mm
- Stainless steel or galvanized screws and nuts
- Angular deflection of 4 degrees
- Flange connection dimensions according to DIN EN1092, PN 10 and PN 16
- Temperature range: -20°C - +30°C

A notice:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.
When used on AZ pipes, restrained cannot be ensured.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: 16 bars

DN	d ₁	d ₂	PN	Order No.	Weight [kg]	BX
700	700-735	727-762	16	VJ35260	580.000	1
700	700-735	750-785	16	VJ35261	666.000	1
700	727-762	750-785	16	VJ35262	611.000	1
700	700-735	789-824	16	VJ35264	635.000	1
700	727-762	789-824	16	VJ35265	635.000	1
800	789-824	825-860	16	VJ35266	738.000	1
800	789-824	853-888	16	VJ35267	762.000	1
800	825-860	853-888	16	VJ35268	705.000	1



FGSM

FRIAGRIP Nuts, Bolts, Washers



Nuts, Bolts, Washers Stainless steel

Short text	Order No.	L	Screws	WS [mm]	Weight [kg]	BX	PU
HRH/Sechskant	670601	70	M12	19	0.800	1	500
CSX/Halbrundkopf	670603	70	M12	19	0.200	1	500
HRH/Sechskant	670607	90	M16	24	0.180	1	500
HRH/Sechskant	670609	120	M16	24	0.220	1	500
HRH/Sechskant	670619	140	M16	24	0.220	1	500
CSX/Halbrundkopf	670707	93	M16	24	0.140	1	500
CSX/Halbrundkopf	670717	120	M16	24	0.250	1	500
HRH/Sechskant	670719	150	M20	30	0.220	1	500

LSN

Long socket for FRIAGRIP Products

Long sockets for mounting products from the FRIAGRIP/UltraGrip, Ultra-Range/Megafit, Wide-Range/MaxiFit, Standard Range, FRIACLAMP and many more series.



Tool holder: 1/2" square
Material: Chrome-vanadium tool steel
Length: 150 mm

d	Order No.	L	WS [mm]	Weight [kg]	BX
M10	670817	150	17	0.300	1
M12	670819	150	19	0.300	1
M14	670822	150	22	0.300	1
M16	670824	150	24	0.300	1
M20	670830	150	30	0.300	1



FGDK

FRIAGRIP Grip- and Sealing System



Complete sealing system for FRIAGRIP/UltraGrip fittings consisting of:
 Seal made of EPDM or NBR
 Acetal gripping segments
 Gripping segments made of acetal, corundum-coated

Note:

If a FRIAGRIP fitting is used more than once, a new sealing system is required for each application.

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270 PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Order No.	Weight [kg]	BX	PU
32	36,0-46,0	672900	0.500	1	100
40	43,5-63,5	672901	0.500	24	96
50	48,0-71,0	672902	0.500	1	
65	63,0-83,7	672903	0.500	1	
80	85,7-107,0	672905	0.500	60	
100	107,2-133,2	672907	1.100	1	
125	132,2-160,2	672909	1.300	1	
150	158,2-192,2	672911	1.500	1	
175	192,2-226,9	672913	1.800	1	100
200	218,1-256,0	672915	2.050	1	
250	266,2-310,2	672917	2.350	1	
300	315,0-356,0	672919	2.700	1	
350	352,2-396,0	672921	2.700	1	
400	398,2-442,0	672923	3.000	1	
400+	448,0-492,0	672925	3.500	1	
500	498,0-552,0	672927	6.000	1	
500+	558,0-608,0	672929	6.000	1	
600	604,0-648,0	672931	9.000	1	
600+	676,0-726,0	672933	9.000	1	

Gasket NBR, DIN-EN 682 MOP Gas: up to DN 400 = 5 bar Other water qualities PFA /PN: up to DN 300 = 16 bar, larger DN 300 = 10 bar



DN	d	Order No.	Weight [kg]	BX	PU
32	36,0-46,0	670900	0.500	1	100
40	43,5-63,5	670901	0.500	1	100
50	48,0-71,0	670902	0.500	1	100
65	63,0-83,7	670903	0.500	1	100
80	85,7-107,0	670905	0.500	1	100
100	107,2-133,2	670907	1.100	1	100
125	132,2-160,2	670909	1.300	1	100
150	158,2-192,2	670911	1.500	1	100
175	192,2-226,9	670913	1.700	1	100
200	218,1-256,0	670915	2.050	1	100
250	266,2-310,2	670917	2.350	1	100
300	315,0-356,0	670919	2.700	1	100
350	352,2-396,0	670921	2.700	1	100
400	398,2-442,0	670923	3.000	1	100



Support liner

SHVA

Stainless steel support liner for PE 80, PE 100 and PEX pipes

Stainless steel inner support liner with wedge for use with FRIAGRIP, Ultra-Range and Wide-Range on PE-HD/PEX pipes, for thin-walled PVC pipes < SDR21 on request.

SHVA wall thickness $\leq d180$: 1 mm, $\geq d 200$: 2 mm.

The support liner d40 and d50 are flanged bushes without cotter.

The support liner from d 450 consist of 2 half shells and 2 clamping wedges (L1 = wedge length).

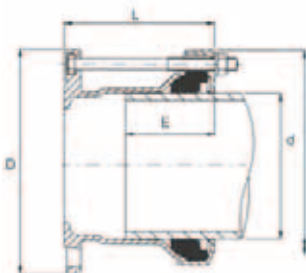


d	SDR	Order No.	L	L1	Weight [kg]	BX	PU
40	11	670501	110		0.200	20	500
50	11	670502	110		0.200	20	500
63	17	670503	130	220	0.150	40	500
63	11	670504	130	220	0.150	40	500
75	17	670505	130	220	0.200	6	500
75	11	670506	130	220	0.200	6	500
90	17	670507	130	220	0.300	40	500
90	11	670508	130	220	0.240	40	500
110	17	670509	150	220	0.350	25	500
110	11	670510	150	220	0.300	25	500
125	17	670511	150	220	0.350	22	500
125	11	670512	150	220	0.400	22	500
140	17	670513	150	220	0.450	9	500
140	11	670514	150	220	0.400	9	500
160	17	670515	175	220	0.550	12	500
160	11	670516	175	220	0.500	12	500
180	17	670517	175	220	0.600	12	500
180	11	670518	175	220	0.700	18	500
200	17	670519	180	220	1.100	16	
200	11	670520	180	220	1.100	16	
225	17	670521	180	220	1.860	12	
225	11	670522	180	220	1.860	16	
250	17	670523	180	220	2.050	2	
250	11	670524	180	220	2.050	2	
280	17	670527	200	220	2.800	16	500
280	11	670528	200	220	2.500	16	500
315	17	670525	200	220	2.760	2	
315	11	670526	200	220	2.760	2	
355	17	670533	200	220	3.230	2	
355	11	670534	200	220	3.230	2	
400	17	670529	200	220	3.840	2	
400	11	670530	200	220	3.840	2	
450	17	670531	250	300	3.400	2	
450	11	670532	250	300	3.400	2	
500	17	670535	250	300	3.780	1	
500	11	670536	250	300	3.780	1	
560	17	670537	250	300	2.140	1	
560	11	670538	250	300	2.140	1	
630	17	670539	250	300	2.410	1	
630	11	670540	250	300	2.410	1	
710	17	670541	250	300	2.710	1	
710	11	670542	250	300	2.710	1	



URFA

Ultra-Range Flange Adaptor



Flange adaptor for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Housing and follower ring made of ductile cast iron (EN-GS-450-10)
- Rilsan corrosion protection (min. 250 µm according to GSK)
- Screws and nuts galvanized/theraplex-coated or made of stainless steel
- Seal material EPDM or NBR
- Diameter tolerance max. 34 mm depending on dimensions
- Pipes can be angled by max. 4 degrees
- Flange connection dimensions in accordance with DIN EN1092, PN 10 and PN 16

Note:

When used on PE-HD/PEX pipes, our SHVA inner support liner is required. Alternatively, we recommend the longitudinally force-locking product FRIAGRIP.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270



PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar

DN	d	Flange DN	Flange PN	Order No.	D	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R9-043-05	167	151	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R9-063-06	185	171	120	80	90	4.950	4	96
80	85,7-107,0	80	10/16	UR-14R9-085-08	200	192	140	80	110	5.850	2	60
100	107,2-133,2	100	10/16	UR-14R9-107-10	234	231	170	85	110	8.900	2	48
125	132,2-160,2	125	10/16	UR-14R9-132-12	268	265	150	90	120	10.700	2	48
150	158,2-192,2	150	10/16	UR-14R9-158-15	317	303	200	100	125	14.700	1	18
175	192,2-226,9	200	10/16	UR-14R9-192-20	344	344	230	100	150	18.000	1	18
200	218,1-252,1	200	10/16	UR-14R9-218-20	374	369	230	100	150	20.950	1	18
250	266,2-300,2	250	10/16	UR-14R9-266-25	424	417	285	100	180	32.200	1	4
300	315,0-349,0	300	10/16	UR-14R9-315-30	472	466	285	100	180	39.200	1	4

Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270



PFA /PN Water: up to DN 300 = 16 bar, larger DN 300 = 10 bar

DN	d	Flange DN	Flange PN	Order No.	D	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R9X043-05	167	151	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R9X063-06	185	171	120	80	90	4.800	4	96
80	85,7-107,0	80	10/16	UR-14R9X085-08	200	192	140	80	110	5.830	2	60
100	107,2-133,2	100	10/16	UR-14R9X107-10	234	231	170	85	110	9.100	2	48
125	132,2-160,2	125	10/16	UR-14R9X132-12	268	265	150	90	120	10.500	2	48
150	158,2-192,2	150	10/16	UR-14R9X158-15	317	303	200	100	125	13.500	1	18
175	192,2-226,9	200	10/16	UR-14R9X192-20	344	344	230	100	150	17.200	1	18
200	218,1-252,1	200	10/16	UR-14R9X218-20	374	369	230	100	150	22.400	1	18
250	266,2-300,2	250	10/16	UR-14R9X266-25	424	417	285	100	180	32.800	1	4
300	315,0-349,0	300	10/16	UR-14R9X315-30	472	466	285	100	180	39.400	1	4



URFA Ultra-Range Flange Adaptor

Nuts and bolts galvanized and sheraplex coated, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar / other water qualities = 16 bar



DN	d	Flange DN	Flange PN	Order No.	D	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R2-043-05	167	151	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R2-063-06	185	171	120	80	90	4.950	4	96
80	85,7-107,0	80	10/16	UR-14R2-085-08	200	192	140	80	110	5.850	2	60
100	107,2-133,2	100	10/16	UR-14R2-107-10	234	231	170	85	110	8.900	2	48
125	132,2-160,2	125	10/16	UR-14R2-132-12	268	265	150	90	120	10.700	2	48
150	158,2-192,2	150	10/16	UR-14R2-158-15	317	303	200	100	125	14.700	1	18
175	192,2-226,9	200	10/16	UR-14R2-192-20	344	344	230	100	150	18.000	1	18
200	218,1-252,1	200	10/16	UR-14R2-218-20	374	369	230	100	150	20.950	1	18
250	266,2-300,2	250	10/16	UR-14R2-266-25	424	417	285	100	180	32.200	1	4
300	315,0-349,0	300	10/16	UR-14R2-315-30	472	466	285	100	180	39.200	1	4

Nuts and bolts Stainless Steel, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar / other water qualities = 16 bar

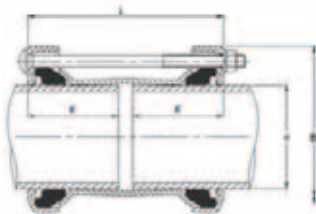


DN	d	Flange DN	Flange PN	Order No.	D	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R2X043-05	167	151	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R2X063-06	185	171	120	80	90	4.800	4	96
80	85,7-107,0	80	10/16	UR-14R2X085-08	200	192	140	80	110	5.830	2	60
100	107,2-133,2	100	10/16	UR-14R2X107-10	234	231	170	85	110	9.100	2	48
125	132,2-160,2	125	10/16	UR-14R2X132-12	268	265	150	90	120	10.500	2	48
150	158,2-192,2	150	10/16	UR-14R2X158-15	317	303	200	100	125	13.500	1	18
175	192,2-226,9	200	10/16	UR-14R2X192-20	344	344	230	100	150	17.200	1	18
200	218,1-252,1	200	10/16	UR-14R2X218-20	374	369	230	100	150	22.400	1	18
250	266,2-300,2	250	10/16	UR-14R2X266-25	424	417	285	100	180	32.800	1	4
300	315,0-349,0	300	10/16	UR-14R2X315-30	472	466	285	100	180	39.400	1	4



URK

Ultra-Range Coupling



Coupling for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Housing and follower ring made of ductile cast iron (EN-GS-450-10)
- Rilsan corrosion protection (min. 250 µm according to GSK)
- Screws and nuts galvanized/theraplex-coated or made of stainless steel
- Seal material EPDM or NBR
- Diameter tolerance max. 34 mm depending on dimensions
- Pipes can be angled by max. 8 degrees
- Temperature Range: -20°C - + 30°C

Note:

When used on PE-HD/PEX pipes, our SHVA inner support liner is required
Alternatively, we recommend the longitudinally force-locking product FRIAGRIP.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar



DN	d	Order No.	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	UR-02R9-043	151	210	80	95	4.900	4	96
65	63,0-83,7	UR-02R9-063	171	215	80	95	5.750	2	48
80	85,7-107,0	UR-02R9-085	192	240	75	110	6.900	4	72
100	107,2-133,2	UR-02R9-107	231	260	75	120	10.300	1	30
125	132,2-160,2	UR-02R9-132	265	260	75	120	12.400	1	30
150	158,2-192,2	UR-02R9-158	308	305	90	145	17.100	1	18
175	192,2-226,9	UR-02R9-192	344	320	90	145	19.500	1	12
200	218,1-252,1	UR-02R9-218	369	320	90	145	24.900	1	12
250	266,2-300,2	UR-02R9-266	417	400	90	185	34.700	1	2
300	315,0-349,0	UR-02R9-315	466	400	90	185	42.550	1	2

Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar



DN	d	Order No.	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	UR-02R9X043	151	210	80	95	4.400	4	96
65	63,0-83,7	UR-02R9X063	171	215	80	95	5.400	2	48
80	85,7-107,0	UR-02R9X085	192	240	75	110	6.600	4	72
100	107,2-133,2	UR-02R9X107	231	260	75	120	10.300	1	30
125	132,2-160,2	UR-02R9X132	265	260	75	120	17.350	1	30
150	158,2-192,2	UR-02R9X158	308	305	90	145	16.200	1	18
175	192,2-226,9	UR-02R9X192	344	320	90	145	19.500	1	12
200	218,1-252,1	UR-02R9X218	369	320	90	145	25.000	1	12
250	266,2-300,2	UR-02R9X266	417	400	90	185	37.000	1	2
300	315,0-349,0	UR-02R9X315	466	400	90	185	41.000	1	2



URK Ultra-Range Coupling

Nuts and bolts galvanized and sheraplex coated, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar / other water qualities = 16 bar



DN	d	Order No.	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	UR-02R2-043	151	210	80	95	4.900	4	96
65	63,0-83,7	UR-02R2-063	171	215	80	95	5.750	2	48
80	85,7-107,0	UR-02R2-085	192	240	75	110	6.900	4	72
100	107,2-133,2	UR-02R2-107	231	260	75	120	10.300	1	30
125	132,2-160,2	UR-02R2-132	265	260	75	120	12.400	1	30
150	158,2-192,2	UR-02R2-158	308	305	90	145	17.100	1	18
175	192,2-226,9	UR-02R2-192	344	320	90	145	19.500	1	12
200	218,1-252,1	UR-02R2-218	369	320	90	145	24.900	1	12
250	266,2-300,2	UR-02R2-266	417	400	90	185	37.100	1	2
300	315,0-349,0	UR-02R2-315	466	400	90	185	42.550	1	2

Nuts and bolts Stainless Steel, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar / other water qualities = 16 bar

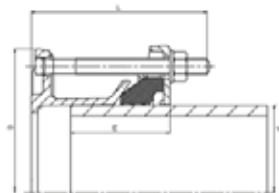


DN	d	Order No.	B	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	UR-02R2X043	151	210	80	95	4.400	4	96
65	63,0-83,7	UR-02R2X063	171	215	80	95	5.400	2	48
80	85,7-107,0	UR-02R2X085	192	240	75	110	6.600	4	72
100	107,2-133,2	UR-02R2X107	231	260	75	120	10.300	1	30
125	132,2-160,2	UR-02R2X132	265	260	75	120	12.400	1	30
150	158,2-192,2	UR-02R2X158	308	305	90	145	17.350	1	18
175	192,2-226,9	UR-02R2X192	344	320	90	145	19.500	1	12
200	218,1-252,1	UR-02R2X218	369	320	90	145	25.000	1	12
250	266,2-300,2	UR-02R2X266	417	400	90	185	37.000	1	2
300	315,0-349,0	UR-02R2X315	466	400	90	185	41.000	1	2



WRFA

Wide-Range Flange Adaptor



Flange adaptor for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Housing and follower ring made of steel
- Rilsan corrosion protection (min. 250 µm according to GSK)
- Screws and nuts galvanized/theraplex-coated or made of stainless steel
- Seal material EPDM
- Diameter tolerance max. 17 mm
- Pipes can be angled by max. 3 degrees
- Flange connection dimensions in accordance with DIN EN1092, PN 10 and PN 16
- Temperature Range: -20°C - +30°C

Note:

Our SHVA internal support liner is required for use on PE-HD/PEX pipes. Alternatively, we recommend the longitudinally force-locking product FRIAGRIP.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270



PFA /PN Water: up to DN 300 = 16 bar

DN	d	Flange DN	Flange PN	Order No.	L	Weight [kg]	BX	PU
300	351,0-368,0	300	10	GB-14R9-351-30	345	57.000	1	4
300	351,0-368,0	300	16	GB-16R9-351-30	345	57.000	1	4
350	374,5-391,5	350	10	GB-14R9-374-35	180	38.100	1	2
350	374,5-391,5	350	16	GB-16R9-374-35	180	38.100	1	2
350	394,3-411,3	350	10	GB-14R9-394-35	280	45.300	1	1
350	394,3-411,3	350	16	GB-16R9-394-35	280	39.800	1	1
400	404,8-421,8	400	10	GB-14R9-404-40	180	37.900	1	1
400	404,8-421,8	400	16	GB-16R9-404-40	180	39.600	1	1
400	425,0-442,0	400	10	GB-14R9-425-40	180	35.500	1	1
400	425,0-442,0	400	16	GB-16R9-425-40	180	35.500	1	1
400	447,2-464,2	400	10	GB-14R9-447-40	280	45.900	1	1
400	447,2-464,2	400	16	GB-16R9-447-40	280	45.900	1	1
400	455,0-472,0	400	10	GB-14R9-455-40	280	50.000	1	1
400	455,0-472,0	400	16	GB-16R9-455-40	280	45.600	1	1
450	501,9-518,9	450	10	GB-14R9-501-45	280	53.700	1	1
450	501,9-518,9	450	16	GB-16R9-501-45	280	53.700	1	1
500	501,9-518,9	500	10	GB-14R9-501-50	180	53.700	1	1
500	501,9-518,9	500	16	GB-16R9-501-50	180	53.700	1	1
500	510,0-527,0	500	10	GB-14R9-510-50	180	48.000	1	1
500	510,0-527,0	500	16	GB-16R9-510-50	180	53.000	1	1
500	527,0-544,0	500	10	GB-14R9-527-50	180	42.900	1	1
500	527,0-544,0	500	16	GB-16R9-527-50	180	50.500	1	1
500	540,1-557,1	500	10	GB-14R9-540-50	280	50.500	1	1
500	540,1-557,1	500	16	GB-16R9-540-50	280	50.500	1	1
500	555,3-572,3	500	10	GB-14R9-555-50	280	62.000	1	1
500	555,3-572,3	500	16	GB-16R9-555-50	280	64.000	1	1
500	566,5-583,5	500	10	GB-14R9-566-50	345	62.200	1	1
500	566,5-583,5	500	16	GB-16R9-566-50	345	62.200	1	1
500	582,2-599,2	500	10	GB-14R9-582-50	345	54.200	1	1
500	582,2-599,2	500	16	GB-16R9-582-50	345	62.500	1	1
600	601,0-618,0	600	10	GB-14R9-601-60	180	63.000	1	1
600	601,0-618,0	600	16	GB-16R9-601-60	180	65.500	1	1
600	630,5-647,5	600	10	GB-14R9-630-60	180	63.400	1	1
600	630,5-647,5	600	16	GB-16R9-630-60	180	66.100	1	1
600	645,2-662,2	600	10	GB-14R9-645-60	280	63.100	1	1
600	645,2-662,2	600	16	GB-16R9-645-60	280	63.700	1	1
600	675,0-692,0	600	10	GB-14R9-675-60	280	64.400	1	1
600	675,0-692,0	600	16	GB-16R9-675-60	280	78.000	1	1

FRIACORE



WRFA Wide-Range Flange Adaptor

Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: up to DN 300 = 16 bar

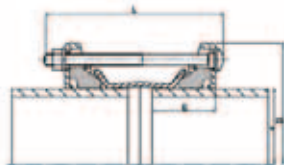


DN	d	Flange DN	Flange PN	Order No.	L	Weight [kg]	BX	PU
300	351,0-368,0	300	10	GB-14R9X351-30	345	32.800	1	4
300	351,0-368,0	300	16	GB-16R9X351-30	345	42.000	1	4
350	374,5-391,5	350	10	GB-14R9X374-35	180	38.100	1	2
350	374,5-391,5	350	16	GB-16R9X374-35	180	38.100	1	2
350	394,3-411,3	350	10	GB-14R9X394-35	180	37.900	1	1
350	394,3-411,3	350	16	GB-16R9X394-35	280	37.900	1	1
400	404,8-421,8	400	10	GB-14R9X404-40	180	36.000	1	1
400	404,8-421,8	400	16	GB-16R9X404-40	180	39.600	1	1
400	425,0-442,0	400	10	GB-14R9X425-40	180	35.500	1	1
400	425,0-442,0	400	16	GB-16R9X425-40	180	33.700	1	1
400	447,2-464,2	400	10	GB-14R9X447-40	280	48.000	1	1
400	447,2-464,2	400	16	GB-16R9X447-40	280	48.000	1	1
400	455,0-472,0	400	10	GB-14R9X455-40	280	41.100	1	1
400	455,0-472,0	400	16	GB-16R9X455-40	280	41.100	1	1
450	501,9-518,9	450	10	GB-14R9X501-45	280	53.700	1	1
450	501,9-518,9	450	16	GB-16R9X501-45	280	53.700	1	1
500	501,9-518,9	500	10	GB-14R9X501-50	180	53.700	1	1
500	501,9-518,9	500	16	GB-16R9X501-50	180	53.700	1	1
500	510,0-527,0	500	10	GB-14R9X510-50	180	50.000	1	1
500	510,0-527,0	500	16	GB-16R9X510-50	180	53.000	1	1
500	527,0-544,0	500	10	GB-14R9X527-50	180	50.500	1	1
500	527,0-544,0	500	16	GB-16R9X527-50	180	50.500	1	1
500	540,1-557,1	500	10	GB-14R9X540-50	280	50.500	1	1
500	540,1-557,1	500	16	GB-16R9X540-50	280	50.500	1	1
500	555,3-572,3	500	10	GB-14R9X555-50	280	62.000	1	1
500	555,3-572,3	500	16	GB-16R9X555-50	280	64.000	1	1
500	566,5-583,5	500	10	GB-14R9X566-50	345	62.200	1	1
500	566,5-583,5	500	16	GB-16R9X566-50	345	62.200	1	1
500	582,2-599,2	500	10	GB-14R9X582-50	345	54.200	1	1
500	582,2-599,2	500	16	GB-16R9X582-50	345	60.000	1	1
600	601,0-618,0	600	10	GB-14R9X601-60	180	63.000	1	1
600	601,0-618,0	600	16	GB-16R9X601-60	180	65.500	1	1
600	630,5-647,5	600	10	GB-14R9X630-60	180	63.400	1	1
600	630,5-647,5	600	16	GB-16R9X630-60	180	66.100	1	1
600	645,2-662,2	600	10	GB-14R9X645-60	280	63.100	1	1
600	645,2-662,2	600	16	GB-16R9X645-60	280	63.700	1	1
600	675,0-692,0	600	10	GB-14R9X675-60	280	64.400	1	1
600	675,0-692,0	600	16	GB-16R9X675-60	280	78.000	1	1
700	689,0-706,0	600	10	GB-14R9X689-60	345	90.300	1	1
700	689,0-706,0	600	16	GB-16R9X689-60	345	90.300	1	1
700	710,0-727,0	700	10	GB-14R9X710-70	345	70.000	1	1
700	710,0-727,0	700	16	GB-16R9X710-70	345	66.500	1	1
700	733,0-750,0	700	10	GB-14R9X733-70	345	74.000	1	1
700	733,0-750,0	700	16	GB-16R9X733-70	345	90.300	1	1



WRK

Wide-Range Coupling



Coupling for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Housing and follower ring made of steel
- Rilsan corrosion protection (min. 250 µm according to GSK)
- Screws and nuts galvanized/theraplex-coated or made of stainless steel
- Seal material EPDM
- Diameter tolerance max. 17 mm
- Pipes can be angled by max. 6 degrees
- Temperature Range: -20°C - +30°C

Note:

Our SHVA inner support liner is required for use on PE-HD/PEX pipes
Alternatively, we recommend the longitudinally force-locking product FRIAGRIP.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar



DN	d	Order No.	L	Weight [kg]	BX	PU
300	351,0-368,0	GB-02R9-351	310	32.400	1	2
350	374,5-391,5	GB-02R9-374	310	34.200	1	1
400	394,3-411,3	GB-02R9-394	310	35.600	1	1
400	418,2-435,2	GB-02R9-418	310	37.600	1	1
400	447,2-464,2	GB-02R9-447	310	39.500	1	1
450	455,0-472,0	GB-02R9-455	310	39.500	1	1
450	476,0-493,0	GB-02R9-476	310	43.000	1	1
500	501,9-518,9	GB-02R9-501	310	44.500	1	1
500	527,0-544,0	GB-02R9-527	310	46.000	1	1
500	555,3-572,3	GB-02R9-555	310	47.600	1	1
600	630,5-647,5	GB-02R9-630	310	52.000	1	1
600	662,0-679,0	GB-02R9-662	310	57.800	1	1
600	675,0-692,0	GB-02R9-675	310	59.000	1	1

Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar



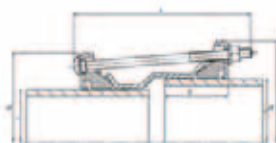
DN	d	Order No.	L	Weight [kg]	BX	PU
300	351,0-368,0	GB-02R9X351	310	32.400	1	2
350	374,5-391,5	GB-02R9X374	310	34.200	1	1
400	394,3-411,3	GB-02R9X394	310	35.600	1	1
400	418,2-435,2	GB-02R9X418	310	37.600	1	1
400	447,2-464,2	GB-02R9X447	310	39.100	1	1
450	455,0-472,0	GB-02R9X455	310	39.500	1	1
450	476,0-493,0	GB-02R9X476	310	43.000	1	1
500	501,9-518,9	GB-02R9X501	310	44.500	1	1
500	527,0-544,0	GB-02R9X527	310	47.700	1	1
500	555,3-572,3	GB-02R9X555	310	47.600	1	1
600	630,5-647,5	GB-02R9X630	310	56.100	1	1
600	662,0-679,0	GB-02R9X662	310	57.800	1	1
600	675,0-692,0	GB-02R9X675	310	59.000	1	1
700	689,0-706,0	GB-02R9X689	310	56.300	1	1
700	695,0-712,0	GB-02R9X695	310	56.700	1	1
700	710,0-727,0	GB-02R9X710	310	57.700	1	1
700	733,0-750,0	GB-02R9X733	310	60.100	1	1

FRIACORE



WRKR

Wide-Range-Reducer



Reducing coupling for connecting pipes made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC, PE-HD/PEX).

- Housing and follower ring made of steel
- Rilsan corrosion protection (min. 250 µm according to GSK)
- Screws and nuts galvanized/theraplex-coated or made of stainless steel
- Seal material EPDM
- Diameter tolerance max. 17 mm
- Pipes can be angled by max. 6 degrees
- Temperature Range: -20°C - +30°C

Note:

Our SHVA inner support liner is required for use on PE-HD/PEX pipes
Alternatively, we recommend the longitudinally force-locking product FRIAGRIP.

Nuts and bolts galvanized and sheraplex coated Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA /PN Water: up to DN 300 = 16 bar



DN	d ₁	d ₂	Order No.	L	Weight [kg]	BX
300	315,0-332,0	351,0-368,0	GB-99R9-315351	230	44.000	1
300	315,0-332,0	367,0-384,0	GB-99R9-315367	230	22.300	1
350	351,0-368,0	374,5-391,5	GB-99R9-351374	300	32.400	1
350	374,5-391,5	394,3-411,3	GB-99R9-374394	300	34.500	1
350	374,5-391,5	404,8-421,8	GB-99R9-374404	300	36.500	1
350	394,3-411,3	418,2-435,2	GB-99R9-394418	300	36.500	1
350	394,3-411,3	425,0-442,0	GB-99R9-394425	300	35.600	1
400	404,8-421,8	425,0-442,0	GB-99R9-404425	300	38.800	1
400	425,0-442,0	434,4-451,4	GB-99R9-425434	300	38.900	1
400	425,0-442,0	447,0-464,0	GB-99R9-425447	300	39.100	1
400	425,0-442,0	455,0-472,0	GB-99R9-425455	300	39.500	1
400	425,0-442,0	476,0-493,0	GB-99R9-425476	300	39.500	1
400	425,0-442,0	487,0-504,0	GB-99R9-425487	300	68.000	1
400	447,2-464,2	455,0-472,0	GB-99R9-447455	300	49.500	1
400	447,2-464,2	476,0-493,0	GB-99R9-447476	300	43.000	1
400	447,2-464,2	501,9-518,9	GB-99R9-447501	300	43.000	1
400	447,2-464,2	510,0-527,0	GB-99R9-447510	300	43.600	1
400	447,2-464,2	540,1-557,1	GB-99R9-447540	300	47.400	1
400	476,0-493,0	487,3-504,3	GB-99R9-476487	300	42.700	1
400	476,0-493,0	501,9-518,9	GB-99R9-476501	300	43.000	1
400	476,0-493,0	510,0-527,0	GB-99R9-476510	300	43.600	1
400	487,0-504,0	527,0-544,0	GB-99R9-487527	300	47.700	1
500	501,0-518,0	527,0-545,0	GB-99R9-501527	300	47.700	1
500	510,0-527,0	527,0-545,0	GB-99R9-510527	300	47.700	1
500	527,0-544,0	540,1-557,1	GB-99R9-528540	300	47.400	1
500	527,0-544,0	555,3-572,3	GB-99R9-528555	300	47.600	1
500	527,0-544,0	566,5-583,5	GB-99R9-528566	300	47.800	1
500	527,0-544,0	582,2-599,2	GB-99R9-528582	300	48.000	1
500	527,0-544,0	598,0-615,0	GB-99R9-527598	300	48.000	1
500	527,0-544,0	601,0-618,0	GB-99R9-527601	300	48.000	1
500	527,0-544,0	630,0-647,0	GB-99R9-527630	300	48.000	1
500	555,3-572,3	566,5-583,5	GB-99R9-555566	300	47.800	1
600	598,0-615,0	630,0-647,0	GB-99R9-598630	300	56.100	1
600	601,0-618,0	630,0-647,0	GB-99R9-601630	300	56.100	1
600	630,0-647,0	645,2-662,2	GB-99R9-630645	300	55.800	1
600	630,0-647,0	662,0-679,0	GB-99R9-630662	300	56.100	1
600	630,0-647,0	675,0-692,0	GB-99R9-630675	300	57.000	1



WRKR Wide-Range-Reducer

**Nuts and Bolts Stainless steel ,Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: up to DN 300 = 16 bar**

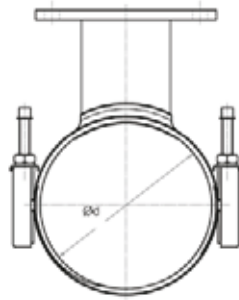


DN	d ₁	d ₂	Order No.	L	Weight [kg]	BX
300	315,0-332,0	351,0-368,0	GB-99R9X315351	230	32.100	1
300	315,0-332,0	367,0-384,0	GB-99R9X315367	230	22.300	1
350	351,0-368,0	374,5-391,5	GB-99R9X351374	300	34.200	1
350	374,5-391,5	394,3-411,3	GB-99R9X374394	300	34.500	1
350	374,5-391,5	404,8-421,8	GB-99R9X374404	300	36.500	1
350	394,3-411,3	418,2-435,2	GB-99R9X394418	300	36.500	1
350	394,3-411,3	425,0-442,0	GB-99R9X394425	300	37.500	1
400	404,8-421,8	425,0-442,0	GB-99R9X404425	300	37.500	1
400	425,0-442,0	434,4-451,4	GB-99R9X425434	300	38.900	1
400	425,0-442,0	447,0-464,0	GB-99R9X425447	300	39.100	1
400	425,0-442,0	455,0-472,0	GB-99R9X425455	300	39.500	1
400	425,0-442,0	476,0-493,0	GB-99R9X425476	300	55.000	1
400	425,0-442,0	487,0-504,0	GB-99R9X425487	300	68.000	1
400	447,2-464,2	455,0-472,0	GB-99R9X447455	300	39.500	1
400	447,2-464,2	476,0-493,0	GB-99R9X447476	300	43.000	1
400	447,2-464,2	501,9-518,9	GB-99R9X447501	300	43.000	1
400	447,2-464,2	510,0-527,0	GB-99R9X447510	300	43.600	1
400	447,2-464,2	540,1-557,1	GB-99R9X447540	300	47.400	1
400	476,0-493,0	487,3-504,3	GB-99R9X476487	300	42.700	1
400	476,0-493,0	501,9-518,9	GB-99R9X476501	300	43.000	1
400	476,0-493,0	510,0-527,0	GB-99R9X476510	300	43.600	1
400	487,0-504,0	527,0-545,0	GB-99R9X487527	300	47.700	1
500	501,0-518,0	527,0-545,0	GB-99R9X501527	300	47.700	1
500	510,0-527,0	527,0-545,0	GB-99R9X510527	300	47.700	1
500	527,0-544,0	540,1-557,1	GB-99R9X528540	300	47.400	1
500	527,0-544,0	555,3-572,1	GB-99R9X528555	300	47.600	1
500	527,0-544,0	566,5-583,5	GB-99R9X528566	300	47.800	1
500	527,0-544,0	582,2-599,2	GB-99R9X528582	300	48.000	1
500	527,0-544,0	598,0-615,0	GB-99R9X527598	300	63.000	1
500	527,0-544,0	601,0-618,0	GB-99R9X527601	300	48.000	1
500	527,0-544,0	630,0-647,0	GB-99R9X527630	300	48.000	1
500	555,3-572,3	566,5-583,5	GB-99R9X555566	300	47.800	1
600	598,0-615,0	630,0-647,0	GB-99R9X598630	300	56.100	1
600	601,0-618,0	630,0-647,0	GB-99R9X601630	300	56.100	1
600	630,0-647,0	645,2-662,2	GB-99R9X630645	300	55.800	1
600	630,0-647,0	662,0-679,0	GB-99R9X630662	300	56.100	1
600	630,0-647,0	675,0-692,0	GB-99R9X630675	300	57.000	1



452

Stainless steel repair clamp with flange outlet



Two-parted repair clamp with flange outlet for creating branches on pipelines made of different materials (steel, cast iron, ductile cast iron, asbestos cement, PVC).

- Special gasket design for a secure seal on the pipe surface.
- Body, closure, screws and nuts made of stainless steel
- Gasket material EPDM
- Flange connection to DIN EN 1092, PN 10/16
- Customized production from DN 65 to DN 800 with dimension-dependent lengths up to 750 mm and flanges up to DN 300 possible
- The standard delivery time is 2-3 weeks
- Alternatively available with female thread outlet from ½" to 2"

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA/PN Water, max = 16 bar



d	Flange DN	Flange PN	PN	Order No.	L	WS [mm]	Weight [kg]	BX	PU
215-226	80	10/16	10	452-215-300-08	300	17	12.000	1	1
215-226	100	10/16	10	452-215-400-10	400	17	13.200	1	1
271-281	80	10/16	10	452-271-300-08	300	17	12.800	1	1
271-281	100	10/16	10	452-271-400-10	400	17	15.000	1	1
271-281	150	10/16	10	452-271-400-15	400	17	20.460	1	1
315-326	80	10/16	10	452-315-400-08	400	17	16.400	1	1
315-326	100	10/16	10	452-315-400-10	400	17	17.600	1	1
315-326	150	10/16	10	452-315-400-15	400	17	27.000	1	1
315-326	200	10	10	452-315-500-20	500	17	27.000	1	1
400-410	80	10/16	10	452-400-400-08	400	17	19.700	1	1
425-435	100	10/16	10	452-425-400-10	400	17	21.000	1	1
445-455	200	10	10	452-445-500-20	500	17	27.900	1	1
500-510	80	10/16	10	452-500-400-08	400	17	18.700	1	1
530-540	100	10/16	10	452-530-400-10	400	17	20.700	1	1
555-565	200	10	10	452-555-500-20	500	17	31.800	1	1
605-615	80	10/16	6	452-605-400-08	400	19	21.600	1	1
630-640	200	10	6	452-630-500-20	500	19	34.400	1	1
630-640	300	10	6	452-630-600-30	600	19	45.500	1	1







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