

Product Catalogue 2026

Infrastructure

Valid from 01.03.2026



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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Mechanical jointing and repair technology

MECHANICAL PE/PVC CONNECTORS

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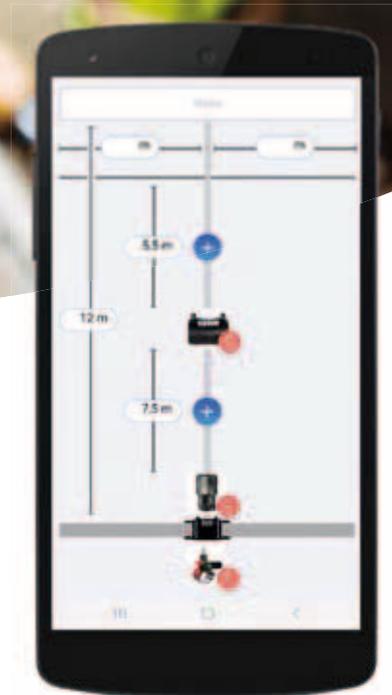
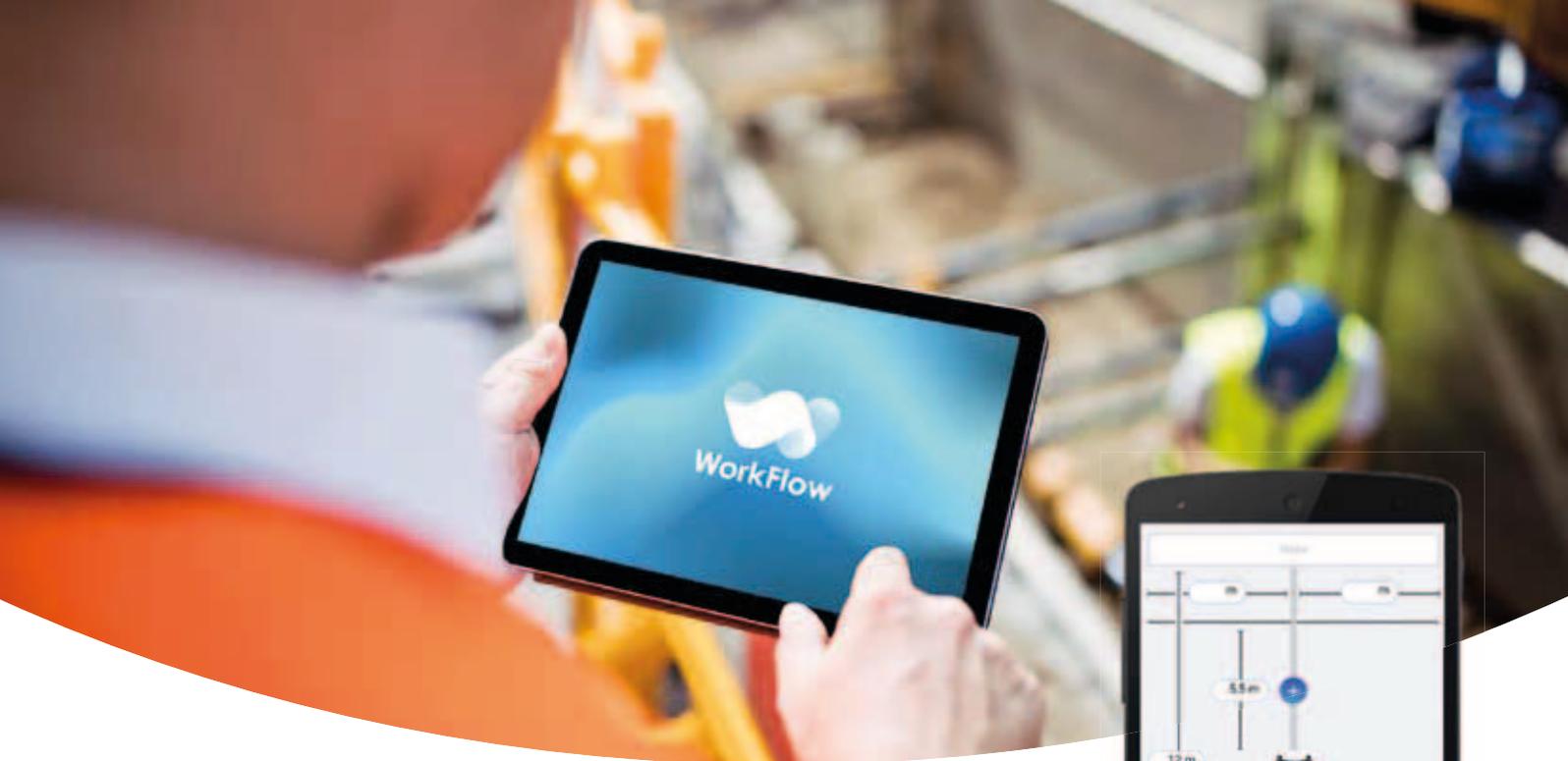
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WorkFlow Sketch – House Connection Sketch per Click

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.

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.

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

For further information, please visit our Homepage:

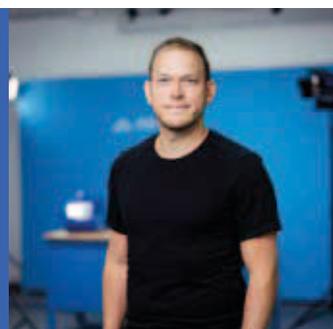
www.aliaxis.de/en/workflow



Your contact

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Fusion goes digital. With WorkFlow Basic.

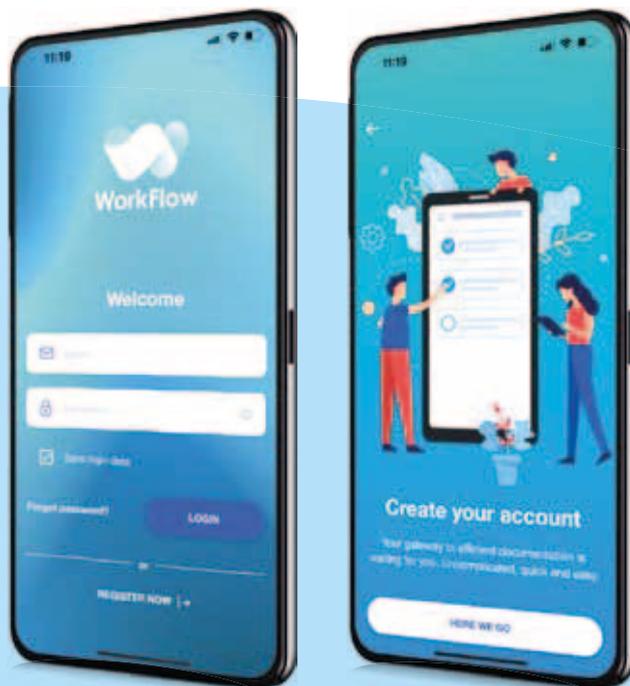
From FRIAMAT to the e-mail inbox

Introducing WorkFlow Basic: With WorkFlow Basic, you can transfer your **fusion protocol** to your computer with **just a few clicks** – quickly and easily via e-mail. For each component, a **PDF and CSV report** with all fusion data is generated, which you can enhance with up to **four photos** of the fusion.

WorkFlow Basic is your **central solution** for digital document access, replacing the outdated FRIAMAT app while

maintaining the **same trusted features**. **WorkFlow Basic** is our free version available everywhere in the world. **WorkFlow Pro** is our paid version available in specific countries.

Switch to WorkFlow, if you're still using the FRIAMAT app – as it will **no longer** be updated.



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

WorkFlow Basic – start digitizing your fusion today!

Start using the free app now!



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.



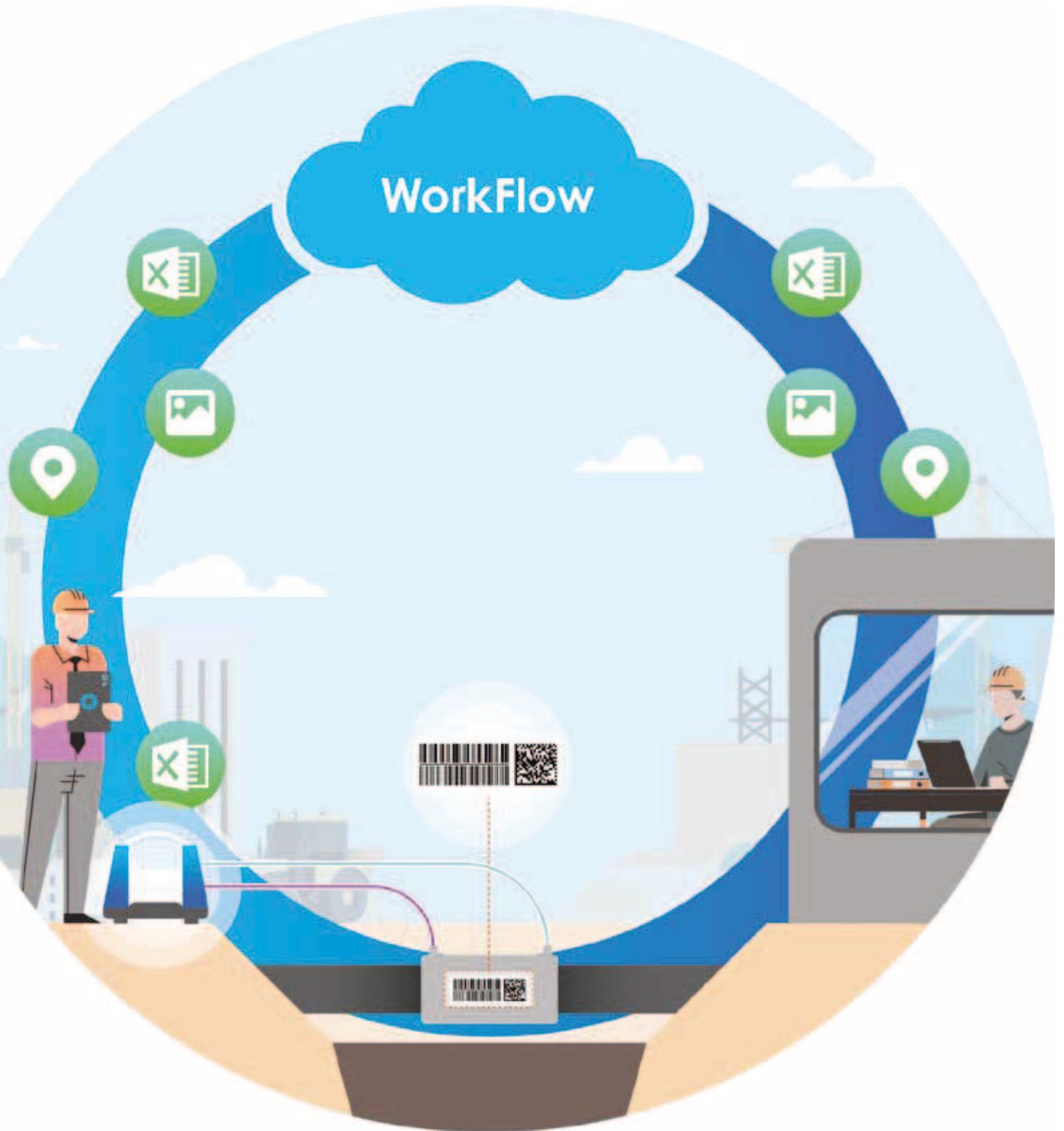
Synchronise

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*:

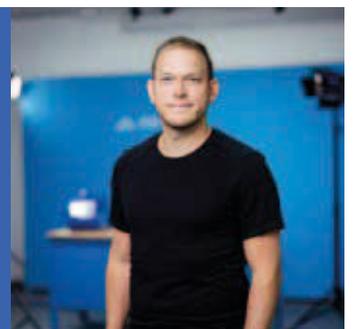
www.aliaxis.de/en/workflow



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
Discontinued part	d 315	612670	Q4 / 2025	617280
New	d 315	617280	immediately	612670

KM SDR 17 Conical ring coupler, SDR 17				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 355	616535	Immediately	-
Omitted	d 400	616536	Immediately	-
Omitted	d 450	616537	Immediately	-
Omitted	d 560	616539	Immediately	-
Omitted	d 630	616523	Immediately	-
Omitted	d 800	616541	Immediately	-
Omitted	d 1000	616434	Immediately	-
Omitted	d 1200	616435	Immediately	-

TF Tee with duck foot, SDR 11				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 90 / d 63	617609	Immediately	-
New	d 110 / d 63	617610	Immediately	-

TA T-piece with spigot				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 200/200	617179	Q2 / 2026	-

TA RED T-piece with reduced spigot				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 200/90	617176	Q2 / 2026	-
New	d 200/110	617177	Q2 / 2026	-
New	d 200/160	617178	Q2 / 2026	-

DAP Horizontal tapping tee, SDR 11				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 63/32	616042	Immediately	-
Omitted	d 110/32	615581	Immediately	-
Omitted	d 110/50	615606	Immediately	-
Omitted	d 125/32	615711	Immediately	-
Omitted	d 125/50	615712	Immediately	-
Omitted	d 160/32	615713	Immediately	-
Omitted	d 160/50	615714	Immediately	-
Omitted	d 180/32	615715	Immediately	-
Omitted	d 180/50	615716	Immediately	-
Omitted	d 225/32	615717	Immediately	-
Omitted	d 225/50	615718	Immediately	-

FRIALEN Safety Fittings

KBS Installation kit KBS for ball valves with adapter hexagon socket				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Discontinued part	d 20-50 RD 0,45-0,7 SW 30	615741	Q4 / 2025	617586
Discontinued part	d 20-50 RD 0,6-1,0 SW 14	615957	Q4 / 2025	617587
Discontinued part	d 20-50 RD 0,6-1,0 SW 30	615328	Q4 / 2025	617587
Discontinued part	d 20-50 RD 1,0-1,5 SW 14	616466	Q4 / 2025	617588
Discontinued part	d 20-50 RD 1,0-1,5 SW 30	615330	Q4 / 2025	617588
Discontinued part	d 20-50 RD 1,2-2,0 SW 14	616068	Q4 / 2026	617589
Discontinued part	d 20-50 RD 1,2-2,0 SW 30	615329	Q4 / 2026	617589
Discontinued part	d 50-225 RD 0,7-1,0 SW 14	615958	Q4 / 2025	617590
Discontinued part	d 50-225 RD 0,7-1,0 SW 30	615310	Q4 / 2025	617590
Discontinued part	d 50-225 RD 1,0-1,5 SW 14	616467	Q4 / 2025	617591
Discontinued part	d 50-225 RD 1,0-1,5 SW 30	615331	Q4 / 2025	617591
Discontinued part	d 50-225 RD 1,2-2,0 SW 14	616069	Q4 / 2025	617592
Discontinued part	d 50-225 RD 1,2-2,0 SW 30	615311	Q4 / 2025	617592
New	d 20-50 / RD 0,62-0,79 / SW 30 + 14	617586	Q3 / 2025	615741
New	d 20-50 / RD 0,77-1,09 / SW 30 + 14	617587	Q3 / 2025	615957 + 615328
New	d 20-50 / RD 1,02-1,59 / SW 30 + 14	617588	Q3 / 2025	616466 + 615330
New	d 20-50 / RD 1,27-2,09 / SW 30 + 14	617589	Q3 / 2026	616068 + 615329
New	d 50-225 / RD 0,75-1,05 / SW 30 + 14	617590	Q3 / 2025	615958 + 615310
New	d 50-225 / RD 1,00-1,56 / SW 30 + 14	617591	Q3 / 2025	616467 + 615331
New	d 50-225 / RD 0,75-1,07 / SW 30 + 14	617592	Q3 / 2025	616069 + 615311

VA Saddle with female thread for transition HD-PE/metal				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 63 x Rp 1 1/4	614048	Immediately	-
New	d 75 x Rp 1 1/4	614047	Immediately	-
New	d 90 x Rp 2	614049	Immediately	-
New	d 110 x Rp 2	614050	Immediately	-
New	d 125 x Rp 2	614051	Immediately	-
New	d 160 x Rp 2	614052	Immediately	-
New	d 180 x Rp 2	614053	Immediately	-
New	d 200 x Rp 2	614054	Immediately	-
New	d 225 x Rp 2	614055	Immediately	-

VA-TL Saddle with female thread top-loading for transition HD-PE/metal				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 250 - 560 x Rp 2	614058	Immediately	-



Product range amendments at a glance

FRIAFIT Sewage System

ASA VL 160 Vacuum-loading sewage saddle				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 200 / d 160	682618	Immediately	682644
New	d 200 / d 160	682644	Immediately	682618
Omitted	d 225 (d 250) / d 160	682613	Immediately	682645
New	d 225 / d 160	682645	Immediately	682613
New	d 315/d 160	682649	Immediately	682615
Omitted	d 450/d 160	682616	Immediately	682656
New	d 450/d 160	682656	Immediately	682616
Discontinued part	d 500/560/630 / d 160	682622	Immediately	682659
New	d 560 / d 160	682659	Immediately	682622
New	d 630 / d 160	682667	Q1/2026	682622
New	d 710 / d 160	682664	Q1/2026	

ASA VL KG 160 Vacuum-loading transition saddle				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 225 (d 250) / d 160	682624	Immediately	682646
New	d 225/d 160	682646	Immediately	682624
Omitted	d 315/d 160	682626	Immediately	682652
New	d 315/d 160	682652	Immediately	682626
Omitted	d 450/d 160	682628	Immediately	682657
New	d 450/d 160	682657	Immediately	682628
Discontinued part	d 500/560/630 / d 160	682629	Immediately	682666
New	d 560 / d 160	682666	Immediately	682629
New	d 630 / d 160	682668	Q1/2026	682629
New	d 710 / d 160	682665	Q1/2026	

FRIACORE Connection and repair technology

FSC FRIASAFE Pipe Connector				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	d 40-64 / BL 200	772101	Q2/2026	872101
Omitted	d 46-72 / BL 200	772102	Q2/2026	872102
Omitted	d 63-90 / BL 200	772103	Q2/2026	872103
Omitted	d 78-105 / BL 200	772105	Q2/2026	872105
Omitted	d 104-132 / BL 240	772107	Q2/2026	872107
Omitted	d 130-161 / BL 240	772109	Q2/2026	872109
Omitted	d 158-192 / BL 240	772111	Q2/2026	872111
Omitted	d 218-256 / BL 240	772115	Q2/2026	872115

FSC TS FRIASAFE Hook Spanner				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	DN 40 - 80	770810	Q2/2026	-
Omitted	DN 100 - 200	770812	Q2/2026	-

FSC WK FRIASAFE Tool Kit				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
Omitted	DN 40-200	770800	Q2/2026	-

FSC FRIASAFE Pipe Connector				
Status	Version	Order No.	Available from/up to	Predecessor /Successor
New	d 40-64 / BL 200	872101	Q2/2026	772101
New	d 46-72 / BL 200	872102	Q2/2026	772102
New	d 63-90 / BL 200	872103	Q2/2026	772103
New	d 78-105 / BL 200	872105	Q2/2026	772105
New	d 104-132 / BL 240	872107	Q2/2026	772107
New	d 130-161 / BL 240	872109	Q2/2026	772109
New	d 158-192 / BL 240	872111	Q2/2026	772111
New	d 218-256 / BL 240	872115	Q2/2026	772115

452 Stainless steel repair clamp with flange outlet		
Status	Version	
Omitted	d 215-226 up to d 630-640	Gasket EPDM

Mechanical PE/PVC Connectors

Hotneck		
Status	Version	
New	d 40/20 up to d 125/25	Hotneck Monobloc
New	d 40 - 64	Hotneck mechanical tapping tee
New		Hotneck tapping key

MSAD Clamp saddles		
Status	Version	
New	d 32 up to d 200	Clamp saddles



Stocked status

Please note during your planning and scheduling:

- Items with an stocked status of **MTS** are usually available from stock.
- Items with an 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 shows 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 € 130,00.

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

Inspection test certificates according to DIN EN 10204 – 3.1 are generally available for download in our digital customer portal for registered customers.

For other inspection test certificates according to DIN EN 10204 – 3.1, we charge a fee of €30 per order item.

You must order other inspection test certificates when placing your order. Subsequent issuance is not possible.

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®, Sentry GS®, UltraGrip®, BAIO®, Riisan® 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

ABS	Acrylonitrile-Butadiene-Styrene	SF	Safety factor
Art. No.	Article Number	STZ	Clay
BX	Sales Unit	WS / SW	Wrench size
CR	Chlorobutadiene rubber	Z99, ZZ	Price on request
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)		

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
- a) for damages as a result of harm to life, the body, or health and
 - b) 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.

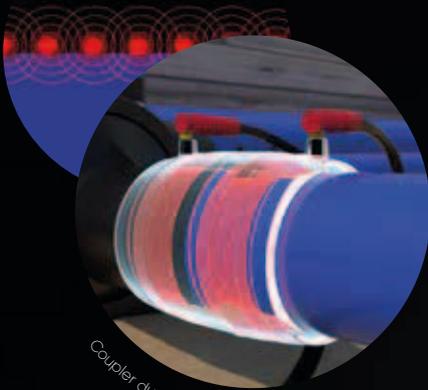


FRIALEN

Safety Technology

Open wire design

Open wires during fusion process



Coupler during fusion process

Optimum heat transfer



Immediate heat transfer within the contact area between the surfaces.



Energy-saving through effective energy utilisation.



Corrosion-resistant open wires.

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



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

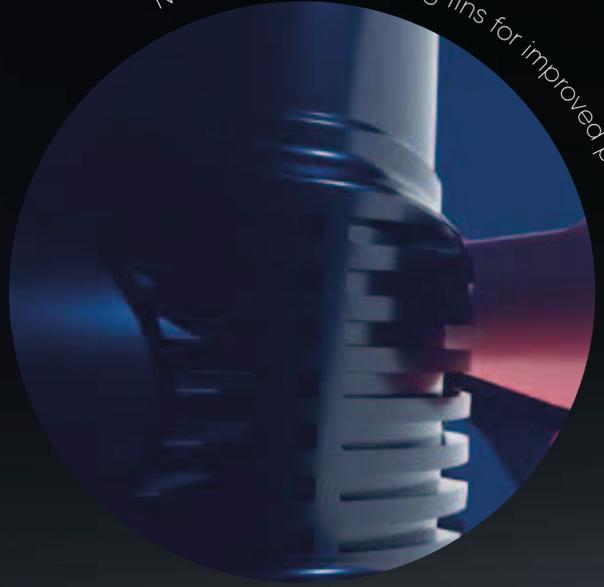


Open wire design
of corrosion
resistant heating
coils

Open wires for optimum heat transfer



Nature inspired cooling fins for improved performance



Fast clamping lever RED SNAP reduces installation time



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 - Gastechisches 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 fittings $\leq d 63$ can be processed with pipes of the SDR ratio provided on the barcode. A minimum wall thickness of 3.0 mm applies once the calculated value is lower than 3.0 mm.

FRIALEN saddles SA, SPA, VAM RG and VA $\leq d 63$ can be processed with pipes of the SDR ratio provided on the barcode.

FRIALEN pressure tapping tees DAA RED SNAP $\geq d 50$ can 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 $+45\text{ °C}$.

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 ¹⁾
9	20	-
7,4	25	-

¹⁾ MOP is set individually by the network operator and may be regulated by national regulations.



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 legacy 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.

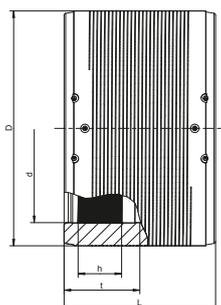
FRIALEN saddle fittings top-loading

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-RC up to d 355, PE 100 from d 400
- 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-RC / PE 100 SDR 11

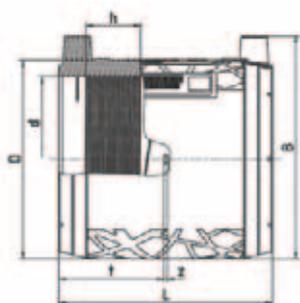
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
16	616577	7,4 - 11	45	29	16	60	30	0.030	135	4320
32	612662	7,4 - 11	61	45	21	77	39	0.070	80	2560
40	612663	7,4 - 11	71	54	23	86	43	0.090	40	1280
50	612664	11 - 17,6	82	68	27	98	49	0.150	25	800
63	612665	11 - 17,6	96	82	29	112	56	0.230	18	576
75	612666	11 - 17,6	110	98	32	122	61	0.330	50	400
90	612667	11 - 17,6	127	114	51	157	78	0.440	40	320
110	612668	11 - 17,6	152	137	49	159	79	0.710	24	192
125	612669	11 - 17,6	169	156	46	172	86	0.940	18	144
140	615001	11 - 17,6	185	174	52	184	92	1.270	12	96
160	612671	11 - 17,6	207	199	52	190	95	1.770	8	64
180	612672	11 - 17,6	228	220	63	210	105	2.090	6	48
200	612673	11 - 17,6	252	247	63	220	110	2.800	1	56
225	612674	11 - 17	280	277	57	236	118	3.890	1	36
250	617278	11 - 17,6	309	309	66	247	123,5	5.800	1	24
280	617279	11 - 17,6	344	344	66	269	134,5	7.400	1	18
315	617280	11 - 17,6	385	385	75	285	142,5	9.500	1	18
355	615074	11 - 17,6	445	445	68	300	150	14.600	1	9
400	615075	9 - 17,6	500	500	90	320	160	20.800	1	4
450	615076	9 - 17,6	560	560	79	340	170	30.000	1	4
500	615124	9 - 17,6	630	630	80	360	180	39.800	1	2
560	616312	9 - 17,6	715	715	95	380	190	55.000	1	2
630	616269	9 - 17,6	810	810	101	420	210	79.600	1	2
710	616313	11 - 17,6	900	900	108	442	210	118.800	1	1
800	616314	11 - 17,6	1000	1000	136	500	250	138.800	1	1
900	616440	11 - 17,6	1130	1130	165	600	300	210.300	1	1
1000	616989	11	1200	1200	171	680	340	121.000	1	1



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



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.

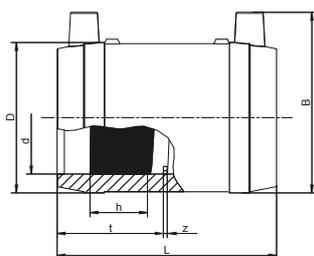
PE 100 SDR 11

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



d	Order No.	SDR range	B	D	h	L	t	z	Weight [kg]
20	617235	11	46.5	28	16.5	76	37	2	0.030
25	617236	11	51.5	33	18.2	81	39,5	2	0.037
32	617237	11 - 17	58.6	40	18.2	82	40	2	0.044
40	617238	11 - 17	67.4	49,5	18.5	83	40,5	2	0.060
50	617239	11 - 17	78.2	61,5	21.4	88	43	2	0.088
63	617240	11 - 17	92.4	77	23.5	95	46,5	2	0.137
75	617241	11 - 17	105.4	91	25.6	105	51,5	2	0.203
90	617242	11 - 17	122.2	109	29.5	115,5	56,8	2	0.327
110	617243	11 - 17	144	132,5	33.9	120	59	2	0.480
125	617244	11 - 17	160.4	150	35.6	145	71,5	2	0.724
140	617245	11 - 17	177	168	38.5	160	79	2	0.993
160	617246	11 - 17	198.8	192	42.6	176	87	2	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-RC
- 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-RC SDR 11

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

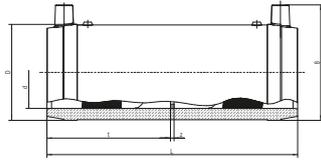


d	Order No.	SDR range	B	D	h	L	t	z	Weight [kg]	BX	PU
20	612680	7,4 - 11	49	33	17	60	29	2	0.040	110	3520
25	612681	7,4 - 11	54	38	17	66	32	2	0.060	100	3200
32	612682	7,4 - 11	61	45	21	78	38	2	0.070	80	2560
40	612683	7,4 - 11	71	54	23	86	42	2	0.090	40	1280
50	612684	11 - 17,6	82	68	27	98	48	2	0.150	25	800
63	612685	11 - 17,6	96	82	29	110	55	2	0.230	18	576
75	612686	11 - 17,6	110	98	32	122	60	3	0.330	50	400
90	612687	11 - 17,6	127	114	51	157	77	3	0.440	40	320
110	612688	11 - 17,6	152	137	49	159	78	3	0.710	24	192
125	612689	11 - 17,6	169	156	51	172	85	3	0.940	18	144
140	612690	11 - 17,6	185	174	52	184	91	3	1.270	12	96
160	612691	11 - 17,6	207	199	52	190	94	3	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-RC
- 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-RC SDR 11

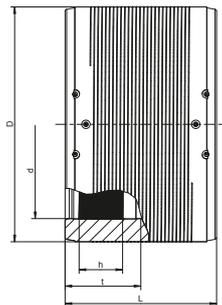
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	B	D	L	t	z	Weight [kg]	BX	PU
32	615736	11	62	45	136	67	2	0.110	40	1280
40	615737	11	72	54	146	72	2	0.150	35	1120
50	615608	11 - 17,6	86	68	175	86	2	0.250	16	512
63	615738	11 - 17,6	97	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)

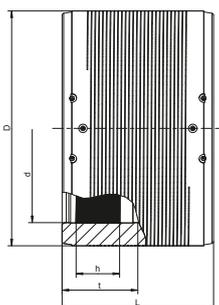


d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
315	616529	17 - 26	358	356	72	280	140	5.880	1	18
355	616530	17 - 26	402	400	70	290	145	7.820	1	18
400	616531	17 - 26	452	450	78	300	150	10.100	1	9
450	616532	17 - 26	508	506	87	320	160	13.650	1	4
500	616533	17 - 26	564	562	85	350	175	18.250	1	4
560	615706	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



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)



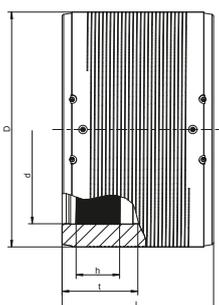
PE 100 SDR 9

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

d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
400	615075	9 - 17,6	500	500	90	320	160	20.800	1	4
450	615076	9 - 17,6	560	560	79	340	170	30.000	1	4
500	615124	9 - 17,6	630	630	80	360	180	39.800	1	2
560	616312	9 - 17,6	715	715	95	380	190	55.000	1	2
630	616269	9 - 17,6	810	810	101	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-RC up to d 400, PE 100 from d 400
- 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-RC / PE 100 SDR 7.4

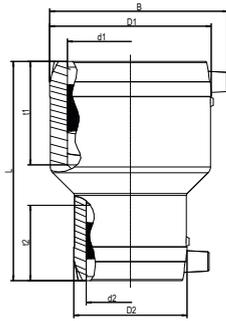
Maximum permissible working pressure 25 bar (water)



d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
90	616270	7,4 - 11	127	117	38	138	69	0.540	30	240
110	616271	7,4 - 11	152	142	50	159	79	0.870	24	192
125	616272	7,4 - 11	169	160	45	172	86	1.240	16	128
140	616273	7,4 - 11	187	181	51	184	92	1.640	12	96
160	616274	7,4 - 11	212	206	59	203	101	2.340	8	64
180	616282	7,4 - 11	225	225	63	210	105	2.700	6	48
200	616283	7,4 - 11	250	250	67	224	112	3.610	2	36
225	616284	7,4 - 11	280	280	73	240	120	4.900	1	33
250	616285	7,4 - 11	315	315	68	246	123	6.700	1	24
280	616286	7,4 - 11	355	355	84	268	134	9.300	1	18
315	616287	7,4 - 11	400	400	80	285	142	14.400	1	18
355	616288	7,4 - 11	450	450	88	300	150	16.700	1	9

FRIALEN couplers

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-RC
- 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-RC / PE 100 SDR 11

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

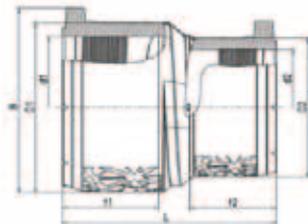


d1	d2	Order No.	SDR range	B	D1	D2	L	t1	t2	Weight [kg]	BX	PU
20	16	616824	11 - 17,6	44	32	28	75	36	36	0.040	1	2240
32	16	616452	11 - 17,6	62	45	28	91	39	34	0.080	80	2560
32	20	615386	11 - 17,6	62	45	32	88	39	30	0.070	90	2880
32	25	615502	11 - 17,6	62	45	38	88	39	33	0.080	80	2560
40	20	615387	11 - 17,6	70	54	32	98	43	30	0.090	60	1920
40	25	616751	11 - 17,6	66	54	38	101	50	40	0.090	1	1280
40	32	615388	11 - 17,6	70	54	45	98	43	39	0.100	50	1600
50	25	616752	11 - 17,6	77	66	38	107	52	39	0.120	1	960
50	32	612070	11 - 17,6	82	68	45	110	49	39	0.150	32	1024
50	40	612071	11 - 17,6	82	68	54	110	49	43	0.150	25	800
63	32	615389	11 - 17,6	96	82	45	125	55	44	0.210	20	640
63	40	615390	11 - 17,6	96	82	54	125	55	43	0.230	16	512
63	50	612072	11 - 17,6	96	82	68	125	55	48	0.230	16	512
75	63	616583	11 - 17,6	110	94	79	143	61	55	0.300	15	270
90	50	615391	11 - 17,6	129	117	68	160	69	49	0.480	15	270
90	63	615392	11 - 17,6	129	117	82	160	69	55	0.510	15	270
90	75	616582	11 - 17,6	127	113	94	159	67	63	0.510	15	270
110	63	615393	11 - 17,6	152	142	82	160	79	55	0.730	10	180
110	90	615693	11 - 17,6	152	140	115	180	79	69	0.880	8	144
125	90	615694	11 - 17,6	166	155	115	200	86	69	0.990	8	144
125	110	616510	11 - 17,6	172	157	137	202	95	70	1.160	16	128
160	110	615695	11 - 17,6	207	201	140	230	98	79	2.000	8	64
180	125	616511	11 - 17,6	230	214	155	275	108	74	2.300	1	60
225	160	616356	11 - 17,6	283	282	203	270	110	98	4.860	1	36



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.

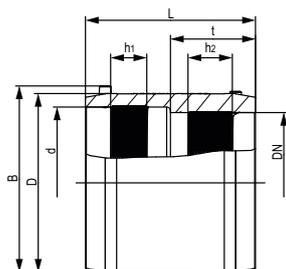
PE 100 SDR 11

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



d1	d2	Order No.	SDR range	B	D1	D2	L	t1	t2	Weight [kg]
32	20	617247	11 - 17	59	40.5	29	124	43	40	0.056
32	25	617248	11 - 17	59	40.5	33	129	43	40	0.061
40	32	617249	11 - 17	67.5	49.5	40.5	128	48	43	0.079
50	32	617250	11 - 17	78.5	61.5	40.5	129	53	43	0.102
50	40	617251	11 - 17	78.5	61.5	49.5	127	53	48	0.110
63	32	617252	11 - 17	92.5	77	40.5	134,5	52,5	43	0.144
63	40	617253	11 - 17	92.5	77	49.5	135,5	52,5	48	0.152
63	50	617254	11 - 17	92.5	77	61.5	135,5	52,5	54	0.165
90	63	617255	11 - 17	122.5	109.5	77	153,5	71	58.5	0.369
90	75	617256	11 - 17	122.5	109.5	91	159	71	64	0.404
110	63	617257	11 - 17	144	132.5	77	161,5	74	59	0.525
110	90	617258	11 - 17	144	132.5	109	165	74	67	0.582
125	90	617259	11 - 17	160.5	150.5	132.5	175	80	70	0.743
125	110	617260	11 - 17	160.5	150.5	109	171	80	67	0.810
160	110	617261	11 - 17	199	192	132.5	194	95	70	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)

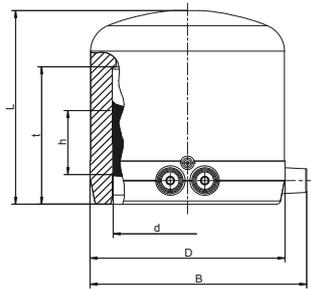


d	DN	Order No.	SDR range	B	D	h1	h2_klein	L	t	Weight [kg]	BX	PU
160	150	615571	17 - 26	199	190	38	42	180	90	1.550	12	96
315	300	615576	17 - 26	355	355	78	83	300	150	7.950	1	18



MV SDR 11

End cap, SDR 11



End cap MV SDR 11

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

PE 100-RC SDR 11

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

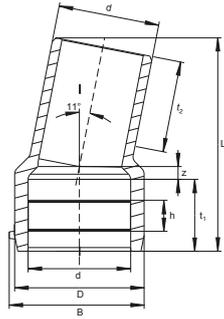


d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
20	612025	11 - 17,6	46	31	22	62	41	0.040	50	2500
25	612026	11 - 17,6	51	35	22	65	41	0.040	50	2500
32	612027	11 - 17,6	61	44	24	70	44	0.060	60	1920
40	612028	11 - 17,6	70	55	28	75	49	0.090	50	1600
50	612029	11 - 17,6	80	67	30	80	55	0.120	30	960
63	612030	11 - 17,6	96	84	31	88	63	0.210	20	640
75	612031	11 - 17,6	110	99	31	99	70	0.320	80	640
90	612032	11 - 17,6	130	118	40	114	79	0.530	16	288
110	612033	11 - 17,6	153	143	34	125	82	0.850	30	216
125	612034	11 - 17,6	168	163	42	135	87	1.180	21	144
160	612035	11 - 17,6	210	208	54	160	98	2.370	10	60
180	616183	11 - 17,6	225.5	224	46.5	157	100	2.800	6	48
200	616184	11 - 17,6	253	250,6	48	167	103	3.700	4	32
225	616185	11 - 17,6	281.6	279	48	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-RC
- Angle 11 degrees
- Universal direction alteration
- Multiple combination = elbow 22 degrees and 33 degrees can be implemented
- Safety technology
- DVGW test mark: DV-8606AU2249

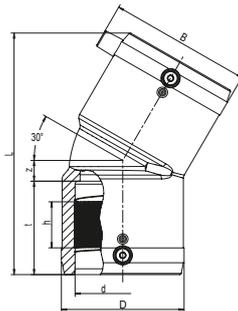
PE 100-RC SDR 11

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



d	Order No.	SDR range	B	D	h	L	t1	t2	z	Weight [kg]	BX	PU
110	616139	11 - 17,6	151	141	32	235	79	82	14	0.920	19	144
125	616140	11 - 17,6	168	160	34	250	84	87	15	1.260	5	90
160	616141	11 - 17,6	206	200	50	295	93	98	20	2.270	8	64
180	616142	11 - 17,6	230	226	50	310	100	105	22	3.070	4	32
225	616143	11 - 17,6	284	280	50	350	114	120	24	5.290	2	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-RC
- Angle 30 degrees
- Safety technology
- DVGW test mark: DV-8606AU2249
- FM Approvals Class: 1613 (d 90 - d 225)

PE 100-RC SDR 11

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

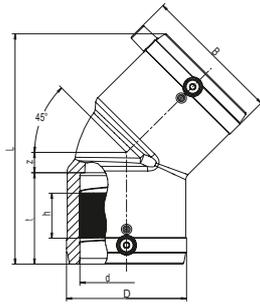


d	Order No.	SDR range	B	D	h	L	t	z	Weight [kg]	BX	PU
90	615272	11 - 17,6	123	115	43	224	72	24	0.780	18	144
110	615273	11 - 17,6	157	142	47	252	83	27	1.260	14	108
125	615274	11 - 17,6	162	158	51	270	85	30	1.650	4	72
160	615340	11 - 17,6	198	199	59	350	96	40	3.890	5	40
180	616261	11 - 17,6	234	229	57	390	101	79	5.000	3	24
200	616262	11 - 17,6	256	254	54	412	106	84	6.310	1	18
225	616263	11 - 17,6	282	281	64	456	123	86	8.220	1	18

FRIALEN shapes

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-RC
- 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-RC SDR 11

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



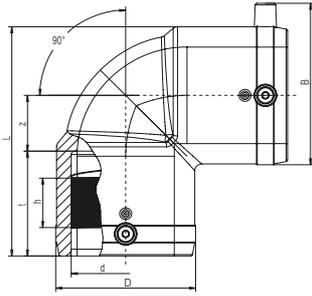
d	Order No.	SDR range	B	D	h	L	t	z	Weight [kg]	BX	PU
25	616687	11	48	35	17	89	38	7	0.050	150	2400
32	612092	11	60	43	21	102	44	8	0.070	50	1600
40	612094	11	70	54	29	120	49	11	0.120	30	960
50	612096	11 - 17,6	80	66	32	136	54	13	0.180	20	640
63	612098	11 - 17,6	95	82	34	158	62	14	0.290	10	320
75	612100	11 - 17,6	111	96	38	198	70	29	0.520	30	252
90	612102	11 - 17,6	128	115	45	232	79	35	0.810	18	144
110	612104	11 - 17,6	150	138	50	265	85	41	1.320	10	80
125	612106	11 - 17,6	167	157	44	279	87	46	1.800	10	80
160	615275	11 - 17,6	210	207	44	377	92	88	4.280	4	32
180	615687	11 - 17,6	229	228	65	382	97	83	4.600	3	24
200	616264	11 - 17,6	256	254	54	415	106	87	6.590	2	18
225	615688	11 - 17,6	281	280	66	450	112	98	8.300	1	8
250	616404	11 - 17,6		310	80	621	128	176	17.300	1	6
280	616405	11 - 17,6		350	84	702	139	205	25.600	1	4
315	616406	11 - 17,6		396	80	755	150	215	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-RC
- 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-RC SDR 11

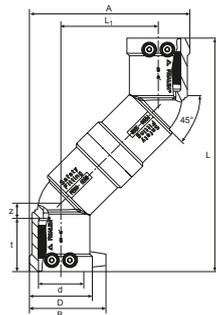
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	B	D	h	L	t	z	Weight [kg]	BX	PU
20	616686	11	41	28,5	16	71	30	12	0.040	200	3200
25	612091	11	54	37	19	73	40	15	0.060	60	1920
32	612093	11	61	43	21	82	44	16	0.080	50	1600
40	612095	11	70	53	29	96	49	21	0.120	30	960
50	612097	11 - 17,6	81	66	32	113	55	26	0.190	20	640
63	612099	11 - 17,6	96	83	30	136	62	33	0.340	10	320
75	612101	11 - 17,6	111	96	37	170	70	53	0.600	30	216
90	612103	11 - 17,6	128	115	45	202	75	65	0.960	18	108
110	612105	11 - 17,6	150	138	50	234	81	84	1.520	10	80
125	612107	11 - 17,6	167	157	44	254	87	89	2.030	8	64
160	615276	11 - 17,6	210	207	44	329	92	133	4.970	3	24
180	615689	11 - 17,6	229	228	65	354	94	146	5.690	3	24
200	616265	11 - 17,6	256	254	54	392	106	159	8.160	2	16
225	615690	11 - 17,6	281	280	66	430	113	177	10.110	1	8
250	616408	11 - 17,6		310	80	534	128	251	19.100	1	6
280	616409	11 - 17,6		350	84	621	139	307	27.500	1	2
315	616410	11 - 17,6		396	80	677	150	329	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)

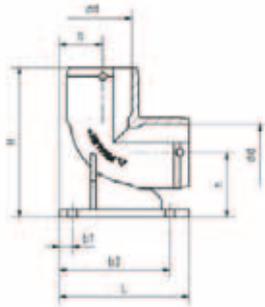


d	Order No.	SDR range	A	B	D	L	L1	t	z	Weight [kg]	BX	PU
32	616051	11	123	63	49	177	74	42	10	0.230	15	750
40	616052	11	147	72	58	215	89	49	14	0.330	15	480
50	616053	11 - 17,6	171	83	70	242	101	53	16	0.510	15	270
63	616699	11 - 17,6	256	96	84	172	172	55	31	0.760	10	180



FRIALEN shapes

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-RC
- 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.

PE 100-RC SDR 11

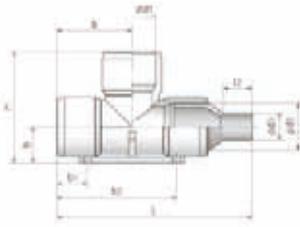
Maximum permissible working pressure 16 bar (water)



d	Order No.	SDR range	b	b1	b2	H	h	L	Weight [kg]	BX	PU
90	617485	11 - 17,6	104	25	210	265	120	248	2.260	3	54
110	617486	11 - 17,6	83	25	210	290	125	248	2.940	1	32

TF SDR 11 Tee with duck foot, SDR 11

NEW



Tee with duck foot TF SDR 11

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

Note:

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

PE 100-RC SDR 11

Maximum permissible working pressure 16 bar (water)

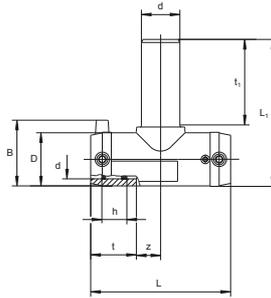


d1	d2	Order No.	SDR range	b	b1	b2	H	h	L	I2	Weight [kg]	BX	PU
90	63	617609	11 - 17,6	145	49	259	228	75	416	70	2.560	1	54
110	63	617610	11 - 17,6	170	74	284	265	88	462	69	3.490	1	32



FRIALEN shapes

TA SDR 11 Equal tee with spigot outlet, SDR 11



Equal tee TA SDR 11 with spigot outlet

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

PE 100-RC SDR 11

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



With extra long outlet spigot

d	Order No.	SDR range	B	D	h	L	L1	t	t1	z	Weight [kg]	BX	PU
20/20	616685	11	42	29	17	77	95	31	45	8	0.040	200	3200
25/25	616338	11	54	36	19	108	110	41	66	13	0.080	50	900
32/32	615719	11	61	44	22	116	131	39	80	19	0.120	35	630
40/40	615720	11	70	53	25	146	151	43	88	30	0.210	20	360
50/50	615721	11 - 17,6	80	67	29	175	186	49	110	38	0.360	10	180
63/63	615722	11 - 17,6	94	81	33	197	203	56	125	42	0.530	10	180

With standard outlet spigots

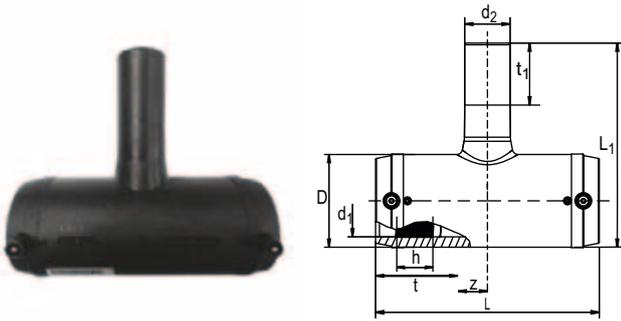
d	Order No.	SDR range	B	D	h	L	L1	t	t1	z	Weight [kg]	BX	PU
90/90	616677	11 - 17,6	126	116	43	280	219	79	79	61	1.250	12	96
110/110	616680	11 - 17,6	148	141	48	310	247	82	82	73	1.950	6	48
160/160	616684	11 - 17,6	205	203	45	390	326	98	98	97	4.950	3	24
180/180	617175	11 - 17,6	228	223	49.9	495	389	105	87	143	8.120	2	16
1) 200/200	617179	11 - 17,6	250	247	50.3	540	425	112	112	158	10.720	1	8
225/225	617183	11 - 17,6	281	278	61.2	590	469	120	120	175	15.050	1	8

1) Available from Q2 / 2026



FRIALEN shapes

TA RED SDR 11 Reduced tee with spigot outlet, SDR 11



Reduced tee TA RED SDR 11 with spigot outlet

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

PE 100-RC SDR 11

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



With long outlet spigot

d1	d2	Order No.	SDR range	B	D	h	L	L1	t	t1	z	Weight [kg]	BX	PU
32	20	616417	11	62	46	22	116	117	44	42	14	0.110	30	540
40	32	616418	11	70	55	25	146	148	46	51	28	0.170	20	360
50	32	616419	11 - 17,6	82	69	28	175	158	55	51	33	0.300	15	270
50	40	616420	11 - 17,6	82	69	28	175	167	55	55	33	0.320	15	270
63	32	616421	11 - 17,6	96	84	32	197	173	63	51	36	0.440	10	180
63	40	616422	11 - 17,6	96	84	32	197	182	63	55	36	0.450	10	180
63	50	616423	11 - 17,6	96	84	32	197	197	63	60	36	0.500	10	180

With standard outlet spigots

d1	d2	Order No.	SDR range	B	D	h	L	L1	t	t1	z	Weight [kg]	BX	PU
90	32	616675	11 - 17,6	126	116	43	280	172	79	44	61	1.050	10	80
90	63	616676	11 - 17,6	126	116	43	280	191	79	63	61	1.100	10	80
110	63	616678	11 - 17,6	148	141	48	310	216	82	63	73	1.700	8	64
110	90	616679	11 - 17,6	148	141	48	310	244	82	79	73	1.850	8	64
160	90	616681	11 - 17,6	205	203	45	390	305	98	79	97	4.400	3	24
160	110	616682	11 - 17,6	205	203	45	390	308	98	82	97	4.500	3	24
160	125	616683	11 - 17,6	205	203	45	390	313	98	87	97	4.600	3	24
180	125	617174	11 - 17,6	228	223	49.9	495	357	105	87	143	7.160	2	16
1) 200	90	617176	11 - 17,6	250	247	50.3	540	360	112	79	158	8.410	1	8
1) 200	110	617177	11 - 17,6	250	247	50.3	540	370	112	82	158	8.890	1	8
1) 200	160	617178	11 - 17,6	250	247	50.3	540	401	112	98	158	9.900	1	8
225	90	617180	11 - 17,6	281	278	61.2	590	389	120	79	175	11.550	1	8
225	110	617181	11 - 17,6	281	278	61.2	590	399	120	82	175	12.200	1	8
225	160	617182	11 - 17,6	281	278	61.2	590	430	120	98	175	13.370	1	8
250	225	616427	11 - 17,6		310	80	770	440	128		254	21.800	1	2
280	225	616429	11 - 17,6		350	84	905	475	139		312	30.800	1	2
315	225	616431	11 - 17,6		396	80	940	525	150		359	43.500	1	2

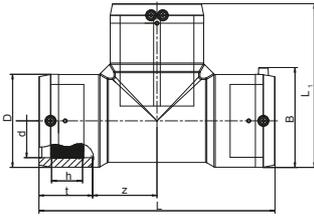
1) Available from Q2 / 2026



FRIALEN shapes

T SDR 11

Equal tee, SDR 11



Equal tee T SDR 11

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

PE 100-RC SDR 11

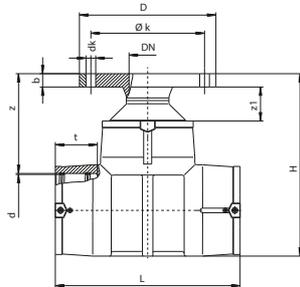
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	B	D	h	L	L1	t	z	Weight [kg]	BX	PU
75	612165	11 - 17,6	111	96	37	278	187	62	69	0.980	8	144
90	612166	11 - 17,6	129	117	44	305	211	71	74	1.660	10	80
110	612167	11 - 17,6	152	142	48	355	248	79	91	2.590	6	48
125	612168	11 - 17,6	168	160	44	384	272	79	105	3.500	5	40
160	615277	11 - 17,6	206	200	41	430	315	88	119	5.820	3	24
180	615691	11 - 17,6	234	228	62	480	354	95	137	7.840	2	16
200	616266	11 - 17,6	255	251	54	550	400	109	160	11.130	1	8
225	615692	11 - 17,6	286	284	63	580	432	111	172	13.910	1	8
250	616412	11 - 17,6		310	80	770	540	128	254	28.200	1	4
280	616413	11 - 17,6		350	84	905	630	139	312	42.200	1	2
315	616414	11 - 17,6		396	80	940	670	150	359	58.100	1	1

TFL

Tee with flanged outlet, SDR 11 / SDR 17



Tee with flanged outlet TFL

- Water
- Working pressure: PFA (water) 16 bar (SDR 11), 10 bar (SDR 17)
- Material: PE 100-RC 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	dk	H	k	L	t	z	z1	Screws	Weight [kg]	BX	PU
110	80	615590	11 - 17,6	204	17	316	160	355	87	190	42	8	5.170	4	32
125	80	615591	11 - 17,6	204	17	343	160	384	87	190	45	8	5.490	3	24
160	80	615592	11 - 17,6	204	17	390	160	430	96	210	50	8	8.050	2	16
180	80	615910	11 - 17,6	204	17	416	160	480	103	210		8	10.000	1	8

PE 100 SDR 17

Maximum permissible working pressure 10 bar (water)



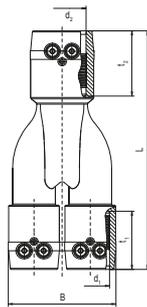
d	DN	Order No.	SDR range	D	dk	H	k	L	t	z	Screws	Weight [kg]	BX	PU	
225	80	616031	11 - 17,6	204	17	465	160	580	118	210		8	15.420	2	4



FRIALEN shapes

Y SDR 11

Y-tee, SDR 11



Y-tee Y SDR 11

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

PE 100-RC SDR 11

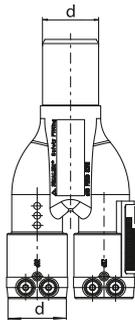
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Order No.	SDR range	B	L	t1	t2	Weight [kg]	BX	PU
32-32-40	640034	11	92	205	50	56	0.230	28	504
40-40-50	640036	11	115	219	56	60	0.360	18	324

YS SDR 11

Y-tee with spigot outlet, SDR 11



Y-tee YS SDR 11 with spigot outlet

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

PE 100-RC SDR 11

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

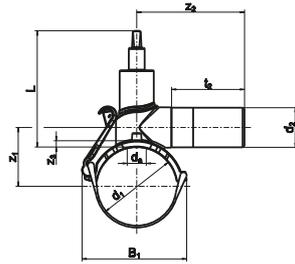


d	Order No.	SDR range	Weight [kg]	BX	PU
32-32-40	640035	11	0.200	28	504
40-40-50	640037	11	0.320	18	324



DAV

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



Tapping valve RED SNAP CW, SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC
- 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 installation kit 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-RC SDR 11

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

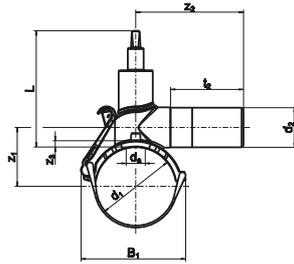


d1	d2	Order No.	B1	B2	L	WS [mm]	t2	z1	z2	z3	Drilling Ø d _a	Turns Open/close	Weight [kg]	BX	PU
50	32	617024	95	136	177	14	86	56	125	8	30	7	1.220	24	192
63	32	617025	108	146	177	14	86	63	125	10	30	7	1.220	24	192
63	40	617026	108	146	177	14	115	63	155	10	30	7	1.220	20	160
63	63	616952	108	146	177	14	115	63	155	10	30	7	1.210	20	160
75	32	617027	120	146	177	14	86	69	125	10	30	7	1.040	22	160
90	32	616960	137	170	183	14	86	76	125	10	30	8	1.220	12	96
90	40	616961	137	170	183	14	92	76	130	10	30	8	1.230	12	96
90	50	616962	137	170	183	14	104	76	145	10	30	8	1.260	14	96
90	63	616963	137	170	183	14	115	76	165	10	30	8	1.340	14	96
110	32	616964	152	170	183	14	86	86	125	10	30	8	1.230	14	96
110	40	616965	152	170	183	14	92	86	130	10	30	8	1.240	14	96
110	50	616966	152	170	183	14	104	86	150	10	30	8	1.290	14	96
110	63	616967	152	170	183	14	115	86	170	10	30	8	1.360	14	96
125	32	616968	167	170	183	14	86	94	125	10	30	8	1.260	12	96
125	40	616969	167	170	183	14	92	94	135	10	30	8	1.240	12	96
125	50	616970	167	170	183	14	104	94	155	10	30	8	1.280	12	96
125	63	616971	167	170	183	14	115	94	170	10	30	8	1.380	12	96
140	32	616972	170	170	183	14	86	101	125	10	30	8	1.230	12	96
140	63	616973	170	170	183	14	115	101	175	10	30	8	1.360	12	96
160	32	616974	195	186	208	14	86	111	130	10	30	9	1.420	10	80
160	40	616975	195	186	208	14	92	111	140	10	30	9	1.430	10	80
160	50	616976	195	186	208	14	104	111	160	10	30	9	1.490	10	80
160	63	616977	195	186	208	14	115	111	180	10	30	9	1.560	10	80
180	32	616978	203	186	208	14	86	121	130	10	30	9	1.440	10	80
180	40	616979	203	186	208	14	92	121	145	10	30	9	1.460	10	80
180	50	616980	203	186	208	14	104	121	165	10	30	9	1.510	10	80
180	63	616981	203	186	208	14	115	121	180	10	30	9	1.580	10	80
200	32	616982	205	186	208	14	86	131	130	10	30	9	1.450	8	64
200	63	616984	205	186	208	14	115	131	185	10	30	9	1.590	8	64
225	32	616985	214	186	208	14	86	144	135	10	30	9	1.480	8	64
225	40	616986	214	186	208	14	92	144	150	10	30	9	1.490	8	64
225	50	616987	214	186	208	14	104	144	170	10	30	9	1.540	8	64
225	63	616988	214	186	208	14	115	144	190	10	30	9	1.620	8	64



DAV ACW

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



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-RC
- 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 installation kit 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-RC SDR 11

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



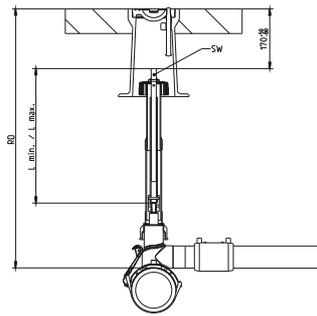
d1	d2	Order No.	B1	B2	L	WS [mm]	t2	z1	z2	z3	Drilling Ø d _a	Turns Open/close	Weight [kg]	BX	PU
50	32	617127	95	136	177	14	86	56	125	8	30	7	1.220	24	192
63	32	617128	108	146	177	14	86	63	125	10	30	7	1.220	24	192
63	63	617129	108	146	177	14	115	63	155	10	30	7	1.340	20	160
75	32	617130	120	146	177	14	86	69	125	10	30	7	1.040	20	160
90	32	617131	137	170	183	14	86	76	125	10	30	8	1.220	12	96
90	63	617132	137	170	183	14	115	76	165	10	30	8	1.340	12	96
110	32	617133	152	170	183	14	86	86	125	10	30	8	1.230	12	96
110	63	617134	152	170	183	14	115	86	170	10	30	8	1.360	12	96
125	32	617135	167	170	183	14	86	94	125	10	30	8	1.260	12	96
125	63	617136	167	170	183	14	115	94	170	10	30	8	1.380	12	96
140	32	617137	170	170	183	14	86	101	125	10	30	8	1.230	12	96
140	63	617138	170	170	183	14	115	101	175	10	30	8	1.360	12	96
160	32	617139	195	186	208	14	86	111	130	10	30	9	1.420	10	80
160	63	617140	195	186	208	14	115	111	180	10	30	9	1.560	10	80
180	32	617141	203	186	208	14	86	121	130	10	30	9	1.440	10	80
180	63	617142	203	186	208	14	115	121	180	10	30	9	1.580	10	80
200	32	617143	205	186	208	14	86	131	130	10	30	9	1.450	8	64
200	63	617144	205	186	208	14	115	131	185	10	30	9	1.590	8	64
225	32	617145	214	186	208	14	86	144	135	10	30	9	1.480	8	64
225	63	617146	214	186	208	14	115	144	190	10	30	9	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)

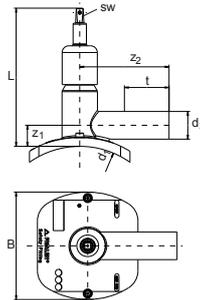
Note:

The installation kit DBS is suitable for use with FRIALEN pressure tapping valves DAV RED SNAP. For pressure tapping valves from other manufacturers, we cannot guarantee that the DBS with Klick-Fix will also fit properly. This must be checked before.

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	1.420	1	42
0,9 - 1,3	617000	0,525 - 0,98 m	14	1.900	1	42
1,2 - 1,8	617001	0,86 - 1,57 m	14	2.840	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-RC
- Universal clamping option (top loading):
 - Safe clamping with FRIATOP
 - Universal adaptation to pipe diameter
- Integrated drill with upper and lower inner stop
- 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 installation kit DBS with KlickFix and foam rubber for wrench size SW14 (14 mm).



PE 100-RC SDR 11

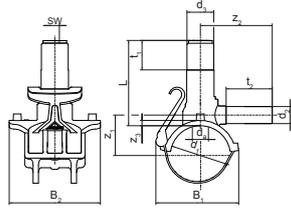
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d1	d2	Order No.	B	L	t	z1	z2	Drilling Ø d _a	Turns Open/close	Weight [kg]	BX	PU
250-315	63	616464	220	251	117	42	176	30	10	2.300	7	56
355-400	63	616465	220	251	117	42	176	30	10	2.470	7	56

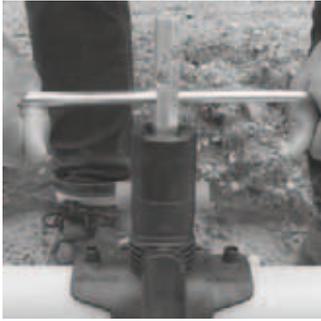
DAA

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-RC
- 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 operating 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.

Outlet pressure test:

A special pressure test adapter FWDPA for DAA RED SNAP (Order no. 613597) must be used.

PE 100-RC SDR 11

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



d1	d2	Order No.	B1	B2	d3	L	WS [mm]	t1	t2	z1	z2	z3	Drilling Ø d _a	Weight [kg]	BX	PU
40	20	612630	85	136	50	120	17	50	66	32	105	8	25	0.380	36	240
40	25	616473	85	136	50	120	17	50	83	32	122	8	25	0.380	36	240
40	32	616474	85	136	50	120	17	50	86	32	125	8	25	0.390	36	240
50	20	616475	95	136	50	120	17	50	66	37	108	8	25	0.380	32	224
50	25	612702	95	136	50	120	17	50	83	37	125	8	25	0.390	32	224
50	32	615080	95	136	50	120	17	50	86	37	128	8	25	0.400	32	224
63	20	612631	108	146	50	130	17	50	66	51	100	10	25	0.440	22	160
63	25	612633	108	146	50	130	17	50	83	51	118	10	25	0.450	22	160
63	32	612632	108	146	50	130	17	50	86	51	123	10	25	0.460	22	160
63	40	616472	108	146	50	160	17	50	115	51	165	10	30	0.860	16	128
63	63	616334	108	146	50	160	17	50	115	51	165	10	30	0.640	16	128
75	32	616482	120	146	50	130	17	50	86	57	126	10	25	0.480	26	192
90	20	616483	137	170	50	160	17	50	66	66	106	10	30	0.610	14	112
90	25	616484	137	170	50	160	17	50	83	66	123	10	30	0.620	14	112
90	32	612634	137	170	50	160	17	50	86	66	126	10	30	0.630	14	112
90	40	615656	137	170	50	160	17	50	115	66	168	10	30	0.970	14	112
90	50	616476	137	170	50	160	17	50	115	66	168	10	30	0.990	14	112
90	63	612701	137	170	50	160	17	50	115	66	168	10	30	0.750	14	112
110	20	616487	152	170	50	160	17	50	66	76	111	10	30	0.620	14	112
110	25	616488	152	170	50	160	17	50	83	76	128	10	30	0.630	14	112
110	32	612637	152	170	50	160	17	50	86	76	134	10	30	0.650	14	112
110	40	615662	152	170	50	160	17	50	115	76	175	10	30	0.980	14	112
110	50	616477	152	170	50	160	17	50	115	76	175	10	30	0.990	14	112
110	63	612624	152	170	50	160	17	50	115	76	175	10	30	0.770	14	112
125	20	616491	167	170	50	160	17	50	66	83	111	10	30	0.650	12	96
125	25	616492	167	170	50	160	17	50	83	83	131	10	30	0.670	12	96
125	32	612649	167	170	50	160	17	50	86	83	138	10	30	0.670	12	96
125	40	615668	167	170	50	160	17	50	115	83	180	10	30	1.030	12	96
125	50	616478	167	170	50	160	17	50	115	83	180	10	30	1.120	12	96
125	63	612309	167	170	50	160	17	50	115	83	180	10	30	0.820	12	96
140	32	616495	170	170	50	160	17	50	86	91	141	10	30	0.710	12	96
140	63	616496	170	170	50	160	17	50	115	91	185	10	30	0.830	12	96



FRIALEN tapping tees

DAA Tapping tee RED SNAP, SDR 11

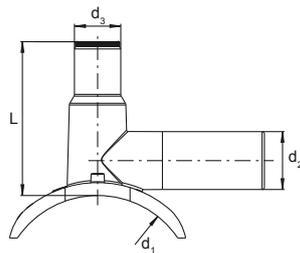
PE 100-RC SDR 11

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



d1	d2	Order No.	B1	B2	d3	L	WS [mm]	t1	t2	z1	z2	z3	Drilling Ø d _a	Weight [kg]	BX	PU
160	20	616497	195	186	50	160	17	50	66	106	108	10	30	0.750	10	80
160	25	616498	195	186	50	160	17	50	83	106	128	10	30	0.750	10	80
160	32	612641	195	186	50	160	17	50	86	106	137	10	30	0.760	10	80
160	40	615675	195	186	50	160	17	50	115	106	185	10	30	1.130	10	80
160	50	616480	195	186	50	160	17	50	115	106	185	10	30	1.130	10	80
160	63	612650	195	186	50	160	17	50	115	106	185	10	30	0.910	10	80
180	20	616501	203	186	50	190	17	50	66	116	110	10	30	0.790	10	80
180	25	616502	203	186	50	190	17	50	83	116	132	10	30	0.800	10	80
180	32	612651	203	186	50	190	17	50	86	116	141	10	30	0.820	10	80
180	50	616481	203	186	50	190	17	50	115	116	188	10	30	1.180	10	80
180	63	612652	203	186	50	190	17	50	115	116	188	10	30	0.950	10	80
200	32	612654	205	186	50	190	17	50	86	126	144	10	30	0.820	8	64
200	63	612659	205	186	50	190	17	50	115	126	190	10	30	0.950	8	64
225	32	612657	214	186	50	190	17	50	86	138	146	10	30	0.830	8	64
225	50	616486	214	186	50	190	17	50	115	138	197	10	30	1.210	8	64
225	63	612655	214	186	50	190	17	50	115	138	197	10	30	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-RC
- 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 operating key FWSS SW 19 (Order No. 613250) for all dimensions.

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

Outlet pressure test:

A special pressure test adapter FWDPA for DAA TL (Order no. 613595) must be used.



PE 100-RC SDR 11

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

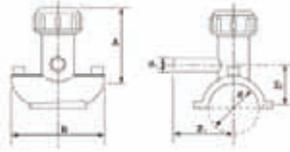


d1	d2	Order No.	B	d3	L	t1	t2	z	Drilling Ø d _a	Weight [kg]	BX	PU
250-315 (- 400)	63	615339	195	50	167	58	118	180	30	1.450	4	72



LVTT

Tapping tee, SDR 11



Tapping tee LVTT SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- PE undersaddle $\leq d$ 63
- Strap undersaddle $> d$ 63

PE 100 SDR 11

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



	d	d1	Order No.	MOP gas	PFA/PN water	A	B	WS [mm]	z1	z2	Drilling $\varnothing d_a$	Weight [kg]	BX
1)	32	20	2071412	10 bar	16 bar	85	88	10	92	29	14	0.220	50
1)	40	20	2071415	10 bar	16 bar	105	108	10	72	45	18,5	0.360	480
1)	40	32	2071417	10 bar	16 bar	105	108	10	77	45	18,5	0.380	480
1)	63	20	2071424	10 bar	16 bar	105	108	10	72	57	20	0.400	480
1)	63	25	2071425	10 bar	16 bar	105	108	10	75	57	20	0.410	480
1)	63	32	2071426	10 bar	16 bar	105	108	10	77	57	20	0.410	480
2)	90	20	2071437	10 bar	16 bar	105	108	10	72	70	20	0.410	480
2)	90	32	2071439	10 bar	16 bar	105	108	10	77	70	20	0.430	480
2)	110	20	2071445	10 bar	16 bar	105	108	10	72	80	20	0.430	480
2)	110	25	2071446	10 bar	16 bar	105	108	10	75	80	20	0.430	480
2)	110	32	2071448	10 bar	16 bar	105	108	10	77	80	20	0.430	480
2)	125	20	2071454	10 bar	16 bar	105	108	10	72	88	20	0.430	480
2)	125	25	2071455	10 bar	16 bar	105	108	10	75	88	20	0.430	480
2)	125	32	2071456	10 bar	16 bar	105	108	10	77	88	20	0.430	480
2)	160	20	2071475	10 bar	16 bar	105	108	10	72	105	20	0.430	480
2)	160	32	2071477	10 bar	16 bar	105	108	10	77	105	20	0.430	480

1) Permanent PE undersaddle

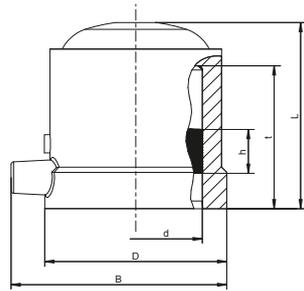
2) 4-10 times re-usable strap undersaddle



FRIALEN tapping tees

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-RC
- Safety technology
- DVGW test mark: DV-8601AU2248

PE 100-RC SDR 11

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



d	Order No.	B	D	h	L	t	Weight [kg]	BX	PU
50	612310	82	69	28	72	55	0.120	30	960

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)

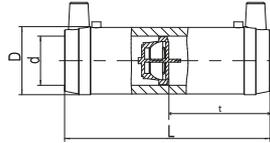


d1	R	RD [m]	Order No.	Weight [kg]	BX
63	1"	0,7 - 1,0	2006380	4.440	1
63	2"	0,7 - 1,0	2006383	6.710	1
90	1"	0,7 - 1,0	2009080	5.240	1
90	2"	0,7 - 1,0	2009083	7.400	1
110	1"	0,7 - 1,0	2011080	5.500	1
110	2"	0,7 - 1,0	2011083	7.650	1
125	1"	0,7 - 1,0	2012580	5.700	1
125	2"	0,7 - 1,0	2012583	7.850	1
160	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



FRIALEN valves

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-RC
- 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-RC SDR 11

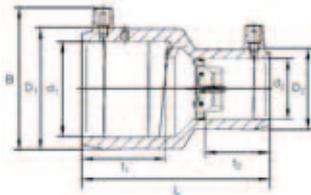
Maximum permissible working pressure Type Z, B: 5 bar (gas), Type D: 1 bar (gas)



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-RC
- 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-RC SDR 11

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

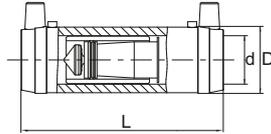


d1	d2	Operating pressure range p _{min} - p _{max}	Order No.	Type	D1	D2	L	t1	t2	VN	Weight [kg]	BX	PU
50	40	35 mbar - 5 bar	616218	Z	68	54	110	49	37	26 - 62	0.150	12	600
63	32	35 mbar - 5 bar	616219	Z	82	45	125	55	44	17 - 40	0.210	18	576
63	40	35 mbar - 5 bar	616220	Z	82	54	125	55	40	26 - 62	0.230	8	400
63	50	35 mbar - 5 bar	616221	Z	82	68	125	55	47	41 - 99	0.230	8	400
63	32	25 mbar - 1 bar	616238	D	82	45	125	55	44	11 - 16	0.210	10	500
63	50	25 mbar - 1 bar	616240	D	82	68	125	55	47	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-RC
- 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-RC SDR 11

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

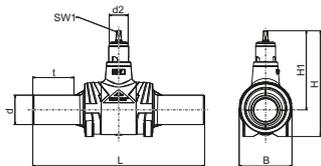
Type A/D: 1 bar (gas)



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

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)



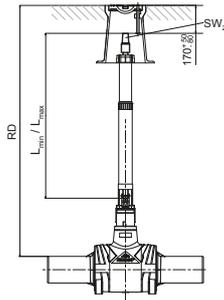
d	d2	Order No.	B	da	H	H1	L	WS1 [mm]	t	Turns Open/close	Weight [kg]	BX	PU
90	80	616293	225	65	450	335	720	19	158	9	13.900	1	8
110	80	616294	225	84	450	335	720	19	164	9	14.200	1	8
125	80	616295	225	84	450	335	720	19	174	9	14.500	1	8
160	80	616296	330	123	608	450	1010	19	196	14	37.900	1	2
180	80	616297	330	123	608	450	1030	19	210	14	39.000	1	2
200	80	616453	330	123	608	450	1030	19	120	14	40.500	1	2
225	80	616298	330	123	608	450	1030	19	124	14	40.500	1	2
250	80	616438	330	123	608	450	1030	19	132	14	41.940	1	2



FRIALEN valves

FBS

Installation kit for FRIALOC PE shut-off valves



Installation kit FBS for FRIALOC

- To operate the FRIALOC from the road cap downwards
- ClickFix (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

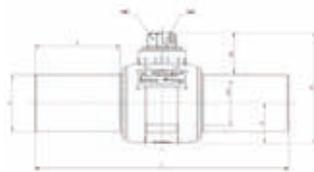
RD [m]	Order No.	L	WS2 [mm]	Weight [kg]	BX	PU
0,75 - 1,0	616308	0,397 - 0,571 m	30	1.900	1	42
0,9 - 1,3	616309	0,552 - 0,881 m	30	2.200	1	42
1,2 - 1,8	616310	0,817 - 1,441 m	30	3.000	1	42
1,5 - 2,3	616318	1,035 - 1,847 m	30	3.900	1	42

Stainless steel linkage

RD [m]	Order No.	L	WS2 [mm]	Weight [kg]	BX	PU
0,75 - 1,0	616315	0,397 - 0,571 m	30	2.850	1	42
0,9 - 1,3	616316	0,552 - 0,881 m	30	3.100	1	42
1,2 - 1,8	616317	0,817 - 1,441 m	30	3.750	1	42
1,5 - 2,3	616319	1,035 - 1,847 m	30	4.850	1	42

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:

There is a suitable installation kit KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).

PE 100 SDR 11

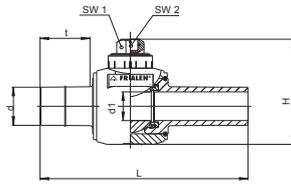
Maximum permissible working pressure 10 bar (gas)



d	d1	Order No.	H	h	h1	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU
32	24	612490	138	40	82	310	50 x 50	20	0.650	1	170
40	24	612497	138	40	78	310	50 x 50	20	0.700	1	170
50	24	612492	138	40	73	310	50 x 50	20	0.750	1	170
63	43	612494	195	67	96.5	410	50 x 50	25	2.380	1	50
90	67	612495	241	87	109	553	50 x 50	25	4.700	1	24
110	67	612493	241	87	99	553	50 x 50	25	5.100	1	24
125	67	612496	241	87	91.5	553	50 x 50	25	5.400	1	24
160	98	612483	332	130	122	539	50 x 50	25	12.000	1	8
180	98	615309	332	130	112	539	50 x 50	25	13.100	1	8
200	98	612480	332	130	102	539	50 x 50	25	14.120	1	8
225	98	616186	332	130	89.5	539	50 x 50	25	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

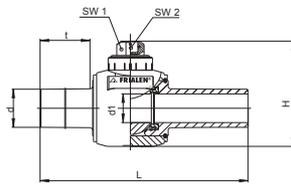
Note:
 There is a suitable installation kit KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).
 From dimension d 50, utilise a KBS d 63 - d 225.



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

d	d1	Order No.	H	h	h1	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
20	24	616470	138	40	88	310	50 x 50	20	98	0.620	1	100
25	24	616471	138	40	85.5	310	50 x 50	20	98	0.630	1	170
32	34	616176	156	48	92	324	50 x 50	20	108	0.870	1	100
40	34	616177	156	48	88	324	50 x 50	20	108	0.900	1	100
50	51	616178	204	70	109	405	50 x 50	25	129	2.380	1	50
63	51	616179	206	70	104.5	410	50 x 50	25	134	2.500	1	50
90	98	616180	293	118	130	577	50 x 50	25	173	7.150	1	18
110	98	616181	293	118	120	577	50 x 50	25	173	7.460	1	18
125	98	616182	293	118	112.5	577	50 x 50	25	173	7.640	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
 - with full bore
 - DVGW test mark: DW-6210CQ0059

Note:
 There is a suitable installation kit KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).
 From dimension d 50, utilise a KBS d 63 - d 225.



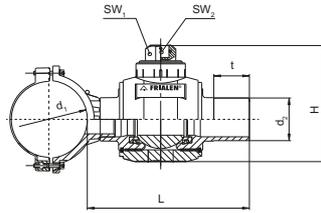
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water)

d	d1	Order No.	H	h	h1	L	WS1 [mm]	WS2 [mm]	t	Weight [kg]	BX	PU
32	34	616656	156	48	92	324	50 x 50	20	108	0.650	1	100
40	34	616657	156	48	88	324	50 x 50	20	108	0.700	1	100
50	43	616658	204	70	109	405	50 x 50	25	129	2.220	1	50
63	51	616659	206	70	104.5	410	50 x 50	25	134	2.380	1	48

FRIALEN valves

AKHP

Tapping ball valve for side tapping 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:

There is a suitable installation kit 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

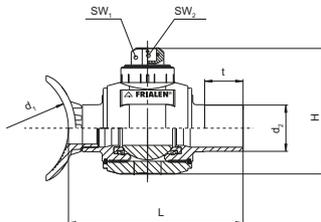
Maximum permissible working pressure 10 bar (gas)



d1	d2	Order No.	H	L	WS1 [mm]	WS2 [mm]	t	Drilling Ø d _a	Weight [kg]	BX	PU
110	63	615427	180	330	50 x 50	25	110	42	3.080	6	48
110	90	615428	240	335	50 x 50	25	90	60	4.670	4	32
125	90	615431	240	335	50 x 50	25	90	60	4.790	4	32
160	63	615433	180	330	50 x 50	25	110	42	3.300	4	32
160	90	615434	240	335	50 x 50	25	90	60	4.970	4	32
180	90	615437	240	335	50 x 50	25	90	60	4.990	4	32
225	90	615440	240	335	50 x 50	25	90	60	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). There is a suitable installation kit 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)

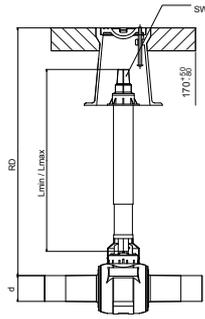


d1	d2	Order No.	H	L	WS1 [mm]	WS2 [mm]	t	Drilling Ø d _a	Weight [kg]	BX	PU
250-450 (- 560)	90	615526	240	335	50 x 50	25	90	60	4.470	4	32



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)

d	RD [m]	Order No.	L	WS [mm]	Weight [kg]	BX	PU
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	1,25 - 2,06	617592	0,98 - 1,79 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)



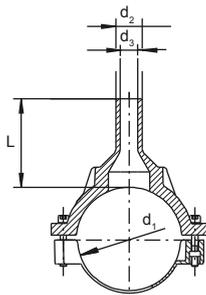
Telescopic installation kit for operation of the FRIALEN-KHP, KH, AKHP and AKHP-TL from the valve cover. Stepless adjustment in the stated range (H) without the use of tools, even in the installed state. Self supporting in any extended position. Corrosion proof. **Key width 14 version specially designed 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 Spigot saddle, SDR 11



Spigot saddle SA SDR 11

- Gas, water and H₂
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC
- 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-RC SDR 11

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



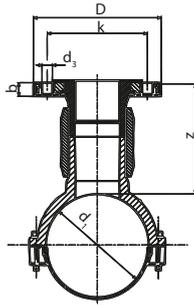
d1	d2	Order No.	B1	B2	d3	h	L	t	Drilling Ø d _a	Weight [kg]	BX	PU
63	32	612757	108	118	22	171	100	44	20	0.340	20	360
63	50	612759	108	118	37	184	113	55	36	0.370	20	360
75	50	615020	110	125	38	167	82	55	36	0.430	15	270
90	32	615285	155	150	21	207	103	44	20	0.710	20	160
90	63	612819	155	150	50	207	103	63	46	0.740	20	160
110	32	615334	178	180	24	238	125	51	20	0.820	12	96
110	50	615031	178	180	39	245	132	60	36	0.810	12	96
110	63	612760	178	180	49	263	150	81	46	0.860	12	96
110	90	615411	165	190	70	228	115	79	65	0.970	12	96
125	32	615087	190	185	21	248	109	44	20	0.950	12	96
125	63	612761	190	185	47	248	109	63	46	0.990	12	96
125	90	615412	185	205	70	243	116	79	65	1.080	12	96
125	110	615584	185	205	86	243	116	82	84	1.150	10	80
160	32	612886	223	265	21	289	126	44	20	1.440	8	64
160	63	612762	223	265	47	303	140	63	46	1.520	6	48
160	90	615413	223	265	70	303	140	79	65	1.640	2	36
160	110	615739	223	265	86	303	140	82	84	1.770	2	36
160	125	615585	223	265	98	303	140	87	95	1.890	2	36
180	63	612763	240	195	47	291	109	63	46	1.190	6	48
180	90	615414	241	285	70	312	116	79	65	1.820	2	36
180	110	615948	241	285	86	319	136	82	84	1.960	2	36
180	125	615740	241	285	98	324	141	87	95	2.110	2	36
200	63	612764	250	195	47	311	109	63	46	1.180	5	40
225	63	612765	255	195	47	336	109	63	46	1.210	5	40
225	90	615415	284	279	70	358	130	79	65	1.960	5	40
225	110	616044	284	279	86	368	140	82	84	2.080	5	40
225	125	616045	284	279	97	374	146	87	95	2.240	4	32
225	160	616046	284	279	125	385	157	98	123	2.580	4	32



FRIALEN saddles

SAFL

Saddle with flanged outlet, SDR 11



Saddle with flanged outlet SAFL SDR 11

- Gas and water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC
- 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-RC SDR 11

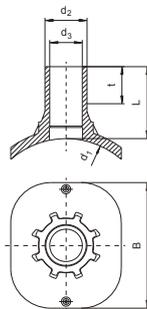
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d1	DN	Order No.	B	b	D	dk	H	k	L	Z	Drilling Ø d _a	Screws	Weight [kg]	BX	PU
110	80	616016	165	25	204	16.5	296	160	190	180	65	8	3.710	3	54
125	80	616017	185	25	204	16.5	311	160	205	180	65	8	3.940	2	36
160	80	616018	217	25	204	16.5	346	160	245	180	65	8	4.320	2	36
180	80	616019	241	25	204	16.5	366	160	285	180	65	8	4.610	2	36
225	80	616020	286	25	204	16.5	411	160	284	180	65	8	4.720	2	16
160	100	616022	217	27	224	16.5	346	180	245	180	84	8	5.270	2	36
225	100	616024	286	27	224	16.5	411	180	284	180	84	8	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-RC
- 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.



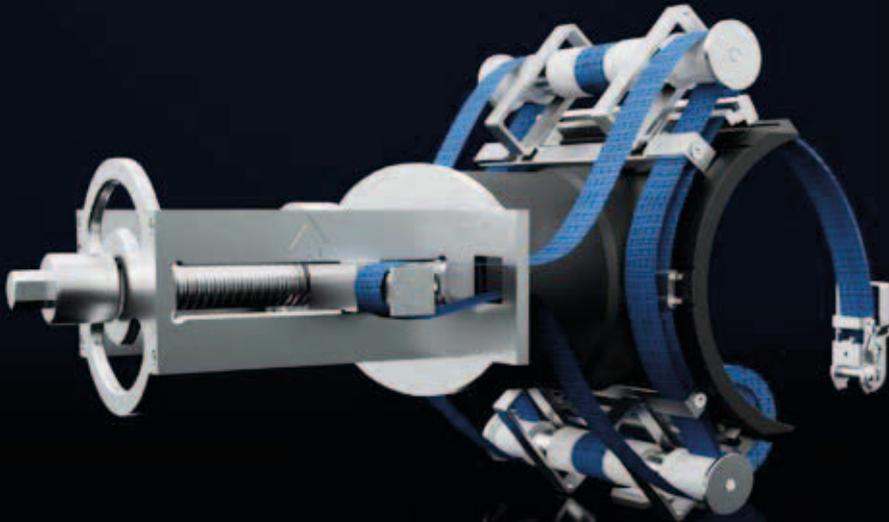
PE 100-RC SDR 11

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



d1	d2	Order No.	B	d3	L	t	Drilling Ø d _a	Weight [kg]	BX	PU
250-560	32	615465	200	21	109	42	20	0.600	5	90
250-560	63	615466	200	47	109	56	46	0.690	5	90





FRIALEN SA UNI

Aliaxis offers utilities and construction companies the most economical solutions for branches on pressure pipes > d 315.

The SA UNI saddles are much easier and faster to install than T-pieces and quality and tightness can be tested on site. SA UNI saddles comply with pressure class SDR 11, the relevant technical requirements and approvals. Compared to installing a tee, SA UNI saddles save up to 50% installation time and are up to 60% more cost-effective.



The UNITOP 250 clamping device enables the comprehensive processing of up to three dimensions. This saves storage costs and offers users additional flexibility.

The use of the "saddle plus clamping" system is very simple and provides the user with clear indications for the correct installation by means of a preset torque wrench. The "Balanced Loading" clamping technology ensures easy and safe installation.

With the FWAB SA UNI hole saw, burr-free and almost heel-free drilling is possible for maximum hydraulic performance.

For further information, please visit our Homepage:

www.aliaxis.de/en/sa-uni



Your contact

Kai Büssecker

kai.buessecker@aliaxis.com

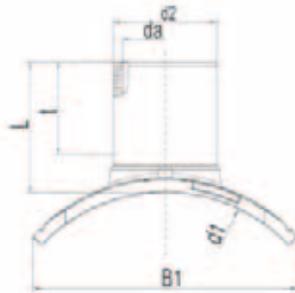


FRIALEN saddles

SA UNI

Universal spigot saddle, SDR 11

NEW



Universal spigot saddle SA UNI SDR 11

Gas, water and H₂

- Maximum pressure: Gas 10 bar, Water 16 bar
- Material: PE 100-RC
- 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.

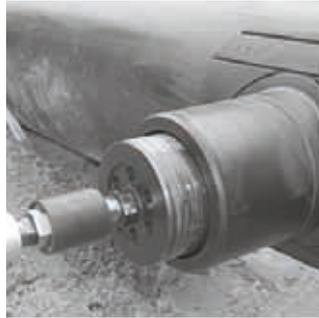
For the outlet spigots 225 / 250, UNITOP 250 (Order No. 613387) is required.

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-RC SDR 11

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

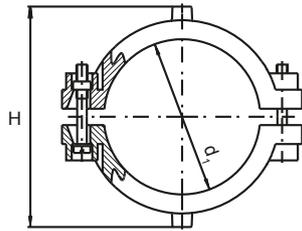


d1	d2	Order No.	SDR range	B1	B2	L	t	Drilling Ø d _a	Weight [kg]	BX	PU
250-280	90	616553	11 - 26	260	279	130	79	65	1.420	5	40
250-280	110	616554	11 - 26	260	279	140	82	84	1.590	5	40
250-280	125	616555	11 - 26	260	279	146	87	95	1.760	5	40
250-280	160	616556	11 - 26	260	279	158	98	123	2.210	5	40
315-400	90	616557	11 - 26	280	279	130	79	65	1.430	5	40
315-400	110	616558	11 - 26	280	279	140	82	84	1.600	5	40
315-400	125	616559	11 - 26	280	279	146	87	95	1.750	5	40
315-400	160	616560	11 - 26	280	279	158	98	123	2.220	5	40
450-900	90	616561	11 - 26	307	279	130	79	65	1.390	5	40
450-900	110	616562	11 - 26	307	279	140	82	84	1.550	5	40
450-900	125	616563	11 - 26	307	279	146	87	95	1.710	5	40
450-900	160	616564	11 - 26	307	279	158	98	123	2.160	5	40
315-355	225	617224	11 - 26	363	438	226	164	172	7.300	5	40
315-355	250	617225	11 - 26	363	438	226	164	187	7.900	5	40
400-450	225	617226	11 - 26	403	438	226	164	172	7.100	5	40
400-450	250	617227	11 - 26	403	438	226	164	187	7.900	5	40
500-630	225	617228	11 - 26	429	438	226	164	172	7.000	5	40
500-630	250	617229	11 - 26	429	438	226	164	187	7.700	5	40
710-900	225	617230	11 - 26	444	438	226	164	172	6.900	5	40
710-900	250	617231	11 - 26	444	438	226	164	187	7.600	5	40
1000-1200	225	617232	11 - 26	450	438	226	164	172	6.800	5	40
1000-1200	250	617233	11 - 26	450	438	226	164	187	7.500	5	40



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-RC
- 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.

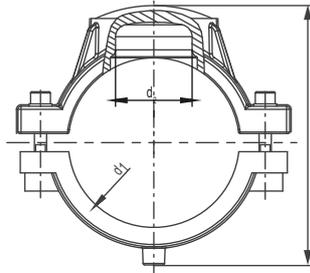
PE 100-RC SDR 11

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



d1	Order No.	B1	B2	H	Weight [kg]	BX	PU
63	612519	105	104	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-RC
- 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-RC SDR 11

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



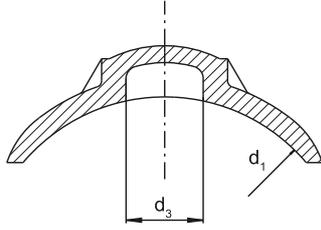
d1	d2	Order No.	B1	B2	H	t	Weight [kg]	BX	PU
90	50	615164	155	150	148	21	0.930	24	192
110	50	615165	178	180	170	21	1.160	16	128
125	50	615166	190	185	183	21	1.370	15	120
160	50	615168	225	195	218	21	1.680	10	80
180	50	615169	240	195	238	21	1.810	6	48
200	50	615170	250	195	258	21	1.860	5	40
225	50	615171	255	195	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-RC
- 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-RC SDR 11

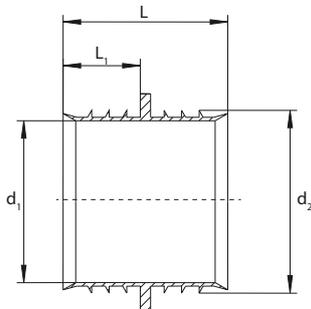
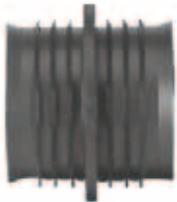
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d1	Order No.	B	d3	t	Weight [kg]	BX	PU
250-560	615397	200	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



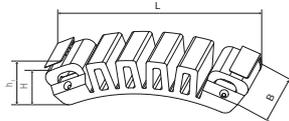
d	d1	d2	Order No.	L	L1	Weight [kg]	BX	PU
32	21	27	615127	35	16	0.010	50	4500
40	28	34	615128	35	16	0.010	50	2500
50	36	42	615129	35	16	0.010	50	2500
63	46	53	615130	47	22	0.020	40	2000



FRIALEN saddles

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.



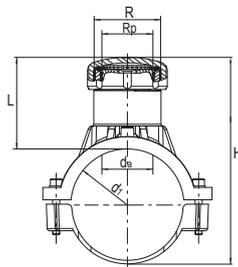
PE 100

Maximum shear load per FIXBLOC: 40 kN

d1	Order No.	B	H	h1	L	Weight [kg]	BX	PU
160 - 1600	680600	60	40	45	220	0.320	15	750

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-RC 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-RC SDR 11

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



	d1	R	Rp	Order No.	B1	B2	H	L	t	Drilling Ø d _a	Weight [kg]	BX	PU
1)	63	1 1/2"	1 1/8"	612753	108	118	151	80	19	31	0.610	20	360
	90	2 1/2"	2"	612677	156	150	197	104	24	56,5	1.390	16	128
	110	2 1/2"	2"	612750	178	180	217	104	24	56,5	1.480	12	96
	125	2 1/2"	2"	612751	190	185	232	104	24	56,5	1.690	12	96
	160	2 1/2"	2"	612752	230	195	267	104	24	56,5	1.830	8	64
	180	2 1/2"	2"	612754	235	195	287	104	24	56,5	1.830	7	56
	200	2 1/2"	2"	612755	252	193	307	104	24	56,5	1.910	6	48
	225	2 1/2"	2"	612756	258	193	332	104	24	56,5	1.920	5	40

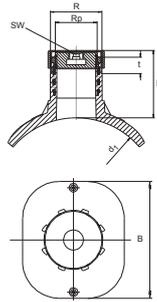
1) SPA d 63 can only be fused with pipes of the SDR level 11.



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-RC 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).



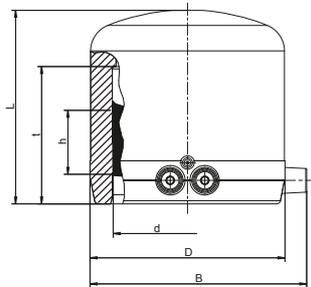
PE 100-RC SDR 11

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

d1	R	Rp	Order No.	B	L	WS [mm]	t	Drilling Ø d _a	Weight [kg]	BX	PU
250-355 (560)	2 1/2"	2"	615395	200	115	19	24	56,5	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-RC SDR 11

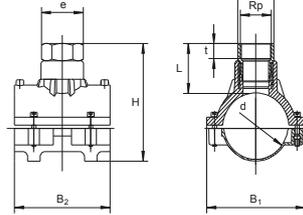
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

d	Order No.	B	D	h	L	t	Weight [kg]	BX	PU
75	612311	110	99	31	99	70	0.320	80	640

FRIALEN transition fittings

VAM RG

Tapping saddle with female threaded gunmetal outlet



Tapping saddle with female threaded gunmetal outlet VAM RG

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC 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-RC SDR 11

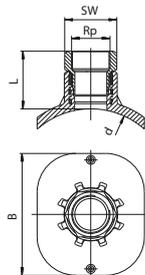
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Rp	Order No.	B1	B2	e	H	L	t	Weight [kg]	BX	PU
63	1 1/4"	612794	108	118	58	146	75	23	0.730	20	360
63	1 1/2"	612743	108	118	64	149	78	23	0.780	20	360
75	1 1/4"	615213	110	125	58	161	76	23	0.850	15	270
90	1 1/2"	612798	155	150	81	172	68	27	1.380	16	128
90	2"	612778	155	150	81	199	95	27	1.570	16	128
110	1 1/2"	612732	178	180	81	182	70	27	1.520	12	96
110	2"	612733	178	180	81	205	92	27	1.730	12	96
125	1 1/2"	612734	190	185	81	207	68	27	1.610	12	96
125	2"	612735	190	185	81	234	95	27	1.820	12	96
160	1 1/2"	612728	225	195	81	242	68	27	1.810	8	64
160	2"	612729	225	195	81	269	95	27	2.040	8	64
225	2"	612827	255	195	81	322	95	27	2.000	5	40

VAM RG TL

Top loading tapping saddle with female threaded gunmetal outlet



Top loading tapping saddle with female threaded gunmetal outlet VAM RG TL

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC 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-RC SDR 11

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



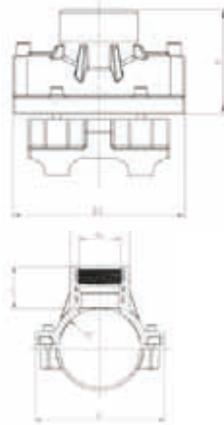
d	Rp	Order No.	B	L	t	Weight [kg]	BX	PU
250 - 560	2"	615470	200	90	27	1.510	8	144



VA

Saddle with female thread for transition HD-PE/metal

NEW



Saddle with female thread for transition HDPE/metal VA

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC and brass (female thread)
- Thread according to EN 12168-Material CW617N
- Thread according to ISO 228-1 for connections that do not seal in the thread. Cylindrical shape
- Saddle with clamp
- Safety technology
- Metals in contact with water according to UBA recommendation

PE 100 RC SDR 11

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

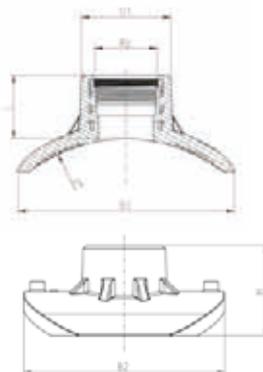


d	Rp	Order No.	B1	B2	D1	H	L	Weight [kg]	BX	PU
63	1 1/4"	614048	108	118	60	81	48	0.440	20	360
75	1 1/4"	614047	110	125	60	117	49	0.540	20	360
90	2"	614049	156	150	82	103	57	0.930	26	208
110	2"	614050	178	180	82	109	59	1.010	20	160
125	2"	614051	190	185	82	116	59	1.190	20	160
160	2"	614052	230	195	82	129	58	1.360	10	80
180	2"	614053	235	195	82	125	59	1.360	10	80
200	2"	614054	252	192,5	82	122	61	1.350	10	80
225	2"	614055	258	192,5	82	120	61	1.370	10	80

VA TL

Saddle with female thread top-loading for transition HD-PE/metal

NEW



Saddle with female thread for transition HDPE/metal VA TL

- Gas, water
- Working pressure: MOP (gas) 10 bar, PFA (water) 16 bar
- Material: PE 100-RC and brass (female thread)
 - Universal clamping option (top loading):
 - Safe clamping with FRIATOP
- Thread according to EN 12168-Material CW617N
- Thread according to ISO 228-1 for connections that do not seal in the thread. Cylindrical shape
- Safety technology
- Metals in contact with water according to UBA recommendation

Note:

Can only be used with clamping device FRIATOP (Order No. 613350). Dimension range d 250 - d 560 can be fused as standard in the top-loading process.

PE 100 RC SDR 11

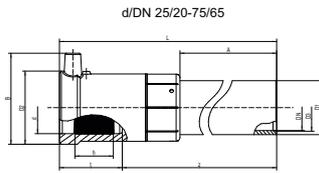
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)



d	Rp	Order No.	B1	B2	D1	H	L	Weight [kg]	BX	PU
250-560	2"	614058	201	200	82	90	59	0.840	10	180

FRIALEN transition fittings

USTR Transition fitting EF coupler / steel pipe



Transition fitting EF coupler / steel pipe USTR

- Gas and H₂
- Working pressure: MOP (gas) 10 bar
- Material: PE 100-RC 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-RC SDR 11

Maximum permissible working pressure 10 bar (gas)



	d	DN	Order No.	A	B	D1	D2	h	L	t	z	Weight [kg]	BX	PU
1)	32	25	612780	300	63	34	49	24	387	44	343	0.810	15	360
1)	40	32	612781	300	72	42	58	31	393	49	344	1.610	10	240
1)	50	40	612782	300	83	48	70	31	409	54	355	2.100	8	192
1)	63	50	612783	300	96	60	83	33	410	55	355	2.020	6	144
1)	90	80	612784	255	130	89	130	42	405	79	326	5.320	1	77
1)	110	100	612785	255	153	114	153	35	420	82	338	8.390	1	54
1)	125	100	612786	255	168	114	168	42	425	87	338	8.710	1	45
	160	150	612787	250	210	168	199	54	484	98	386	16.830	1	24
	180	150	615030	250		171	227	50	500	105	395	21.250	1	18
	200	200	612795	225		219	264	53	480	112	368	27.020	1	12
	225	200	612370	225		219	285	76	505	120	385	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)



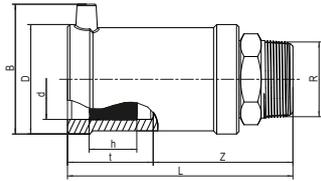
d	DN	Order No.	A	D	L	L1	w	Z	Weight [kg]	BX	PU
20	15	616632	250	45	425	80	2,60	15	0.450	21	630
25	20	616633	285	45	460	90	2,60	35	0.650	21	630
32	25	616634	285	51	460	95	3,20	35	0.950	18	540
40	32	616635	285	63	470	100	3,20	35	1.250	12	360
50	40	616636	285	70	480	110	3,20	35	1.450	8	240
63	50	616637	275	89	480	110	3,60	35	2.150	6	216
75	65	616638	310	95	540	130	3,60	35	2.950	2	98
90	80	616639	310	117	580	140	4,00	45	3.950	2	98
110	100	616640	295	150	585	145	5,40	45	6.380	2	50
125	100	616641	295	150	585	150	5,40	45	7.300	2	50
140	125	616642	320	163	580	155	5,00	45	8.000	1	25
160	150	616643	290	210	610	160	5,00	45	10.500	1	25
180	150	616644	290	210	610	170	5,00	45	11.000	1	25
200	200	616645	300	259	630	155	6,30	45	17.500	1	16
225	200	616646	300	259	610	145	6,30	45	18.000	1	16
250	250	616647	300	324	640	140	6,30	45	30.500	1	8
280	250	616648	300	324	640	160	6,30	45	31.000	1	8
315	300	616649	315	368	725	220	8,80	45	46.500	1	6
355	300	616650	315	368	735	260	8,80	45	48.000	1	6
400	400	616651	350	475	770	190	8,80	45	83.200	1	3
500	500	616652	350	590	1050	365	10,00	50	127.500	1	2
630	600	616653	360	735	1100	430	12,70	50	242.000	1	2



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-RC 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-RC SDR 11

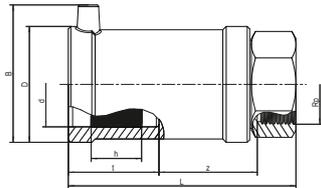
Maximum permissible working pressure 5 bar (gas)



d	R	Order No.	B	D	h	L	t	z	Weight [kg]	BX	PU
32	1"	612580	61	47	24	119	42	77	0.350	20	1080
40	1 1/4"	612582	70	58	30	131	46	86	0.530	20	800
50	1 1/2"	612584	80	70	30	146	53	93	0.700	15	600
63	2"	612586	94	84	35	152	53	99	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-RC 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-RC SDR 11

Maximum permissible working pressure 5 bar (gas)



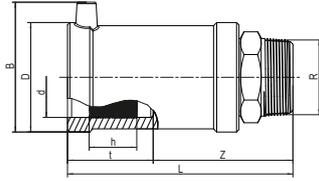
d	Rp	Order No.	B	D	h	L	t	z	Weight [kg]	BX	PU
32	1"	612570	61	47	24	112	42	49	0.350	20	1080
40	1 1/4"	612572	70	58	30	121	46	53	0.510	20	800
50	1 1/2"	612574	80	70	30	136	53	60	0.650	15	600
63	2"	612576	94	84	35	141	53	61	1.020	10	400



FRIALEN transition fittings

MUN

Transition fitting HD-PE/brass with male thread



Brass pipe transition fitting MUN

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100-RC 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-RC SDR 11

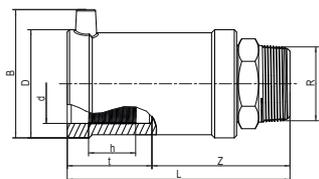
Maximum permissible working pressure 16 bar (water)



d	R	Order No.	B	D	h	L	t	z	Weight [kg]	BX	PU
32	1"	612712	61	47	24	112	42	70	0.320	20	1440
32	1 1/4"	612709	61	47	24	120	42	70	0.400	20	1080
32	1 1/2"	612698	61	47	24	121	42	70	0.450	15	810
40	1"	612721	70	58	30	123	46	75	0.460	20	800
40	1 1/4"	612713	70	58	30	126	46	77	0.490	20	800
40	1 1/2"	612718	70	58	30	127	46	78	0.520	20	800
40	2"	612725	70	58	30	132	46	86	0.680	20	600
50	1"	612719	80	70	30	134	53	81	0.620	15	600
50	1 1/4"	612716	80	70	30	136	53	83	0.620	15	600
50	1 1/2"	612714	80	70	30	137	53	84	0.620	15	600
50	2"	612706	80	70	30	147	53	94	0.760	15	600
63	1 1/4"	612722	94	84	35	138	53	84	0.920	10	400
63	1 1/2"	612717	94	84	35	137	53	84	0.910	10	400
63	2"	612715	94	84	35	142	53	89	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-RC 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-RC SDR 11

Maximum permissible working pressure 16 bar (water)

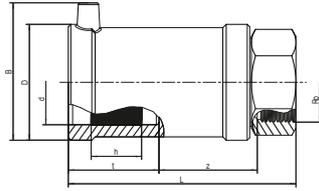


d	R	Order No.	B	D	h	L	t	z	Weight [kg]	BX	PU
40	1"	616516	70	58	30	123	46	75	0.470	20	800
40	1 1/2"	612727	70	58	30	127	46	78	0.500	20	800
50	1 1/2"	612726	80	70	30	137	53	84	0.600	15	600
63	1 1/2"	612705	94	84	35	137	53	84	0.870	10	400
63	2"	612899	94	84	35	142	53	89	0.910	10	400



MUM

Transition fitting HD-PE/gunmetal with female thread



Transition fitting gunmetal pipe MUM

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100-RC 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-RC SDR 11

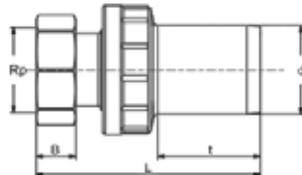
Maximum permissible working pressure 16 bar (water)



d	Rp	Order No.	B	D	h	L	t	z	Weight [kg]	BX	PU
32	1"	612595	61	47	24	112	42	49	0.360	20	1080
40	1 1/4"	612596	70	58	30	121	46	53	0.530	20	800
50	1 1/2"	612692	80	70	30	136	53	60	0.650	15	600
63	1 1/2"	612708	94	84	35	141	53	61	1.100	10	300
63	2"	612693	94	84	35	141	53	61	1.080	10	400

UAM ET

Transition fitting HD-PE spigot/brass with female threaded swivel nut



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)



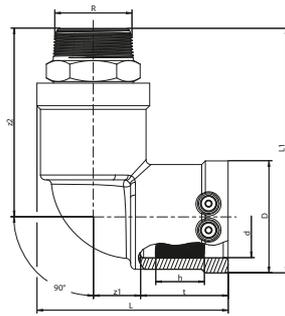
d	Rp	Order No.	B	L	WS [mm]	t	Weight [kg]	BX	PU
32	1"	616655	15	120	36	47	0.240	30	1080
50	1 1/2"	616627	22	150	58	57	0.640	16	576



FRIALEN transition fittings

WUN 90

Transition elbow 90° HD-PE/brass with male thread



Transition elbow brass pipe WUN 90

- Water
- Working pressure: PFA (water) 16 bar
- Material: PE 100-RC 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-RC SDR 11

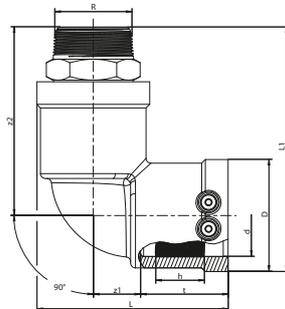
Maximum permissible working pressure 16 bar (water)



d	R	Order No.	D	h	L	t	z1	z2	Weight [kg]	BX	PU
32	1"	612120	47	24	85	42	21	89	0.350	20	1000
32	1 1/2"	612140	47	24	94	42	21	93	0.480	20	800
40	1"	612127	58	30	102	46	27	101	0.520	15	750
40	1 1/4"	612122	58	30	102	46	27	103	0.530	15	750
40	1 1/2"	612121	58	30	102	46	27	104	0.560	15	750
50	1"	612119	70	30	118	53	30	110	0.680	10	500
50	1 1/4"	612123	70	30	118	53	30	112	0.660	10	500
50	1 1/2"	612124	70	30	118	53	30	113	0.680	10	500
63	1 1/2"	612125	84	35	128	53	33	116	0.990	10	320
63	2"	612126	84	35	128	53	33	121	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-RC 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-RC SDR 11

Maximum permissible working pressure 16 bar (water)



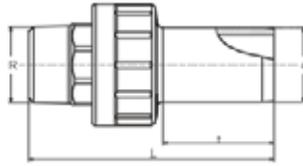
d	R	Order No.	D	h	L	t	z1	z2	Weight [kg]	BX	PU
40	1"	616514	58	30	102	45,5	27	101	0.540	15	750
40	1 1/2"	612148	58	30	102	45,5	27	104	0.540	15	750
50	1 1/2"	612118	70	29.8	118	53	30	113	0.650	10	600
63	1 1/2"	612186	84	35	128	53	33	116	0.990	10	320
63	2"	616515	84	35	128	53	33	121	0.950	10	320



FRIALEN transition fittings

UAN

Transition fitting HD-PE spigot/brass with male thread



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

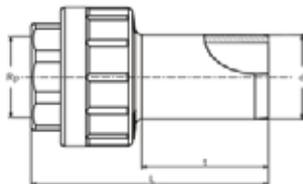
Maximum permissible working pressure 16 bar (water) / 5 bar (gas)



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

Transition fitting HD-PE spigot/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)



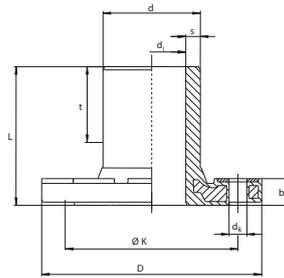
d	Rp	Order No.	L	WS [mm]	t	Weight [kg]	BX	PU
20	1/2"	616615	79	26	41	0.080	80	4800
25	3/4"	616616	77	32	44	0.120	60	3600
32	1"	616156	88	40	47	0.190	36	2160
40	1 1/4"	616157	100	49	56	0.290	20	1200
50	1 1/2"	616158	102	55	57	0.350	16	960
63	1 1/2"	616621	115	55	63	0.450	10	600
63	2"	616159	120	67	63	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-RC 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-RC SDR 11

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

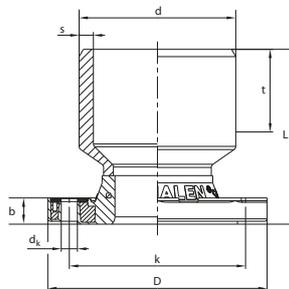


d	DN	Order No.	b	D	di_klein	dk	k	L	s	t	Screws	Weight [kg]	BX	PU
63	50	615417	23	169	51	17	125	105	5,8	53	4	1.510	5	250
90	80	615418	25	204	72	17	160	130	8,2	71	8	2.550	10	160
110	100	615419	27	224	87	17	180	150	10	83	8	3.310	3	96
125	100	615605	30	224	101	17	180	160	11,4	85	8	3.280	2	64
160	150	615421	29	288	127	21	240	190	14,6	120	8	5.950	2	36
180	150	615927	31	288	123	21	240	200	16,4	120	8	6.660	2	36
1) 225	200	615607	31	343	180	21	295	225	20,4	120	8	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-RC 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-RC SDR 11

Maximum permissible working pressure 16 bar (water)

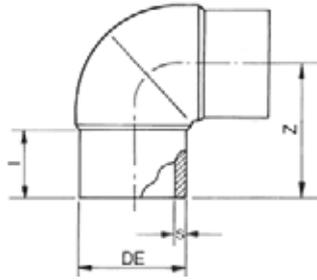


d	DN	Order No.	b	D	dk	k	L	s	t	Screws	Weight [kg]	BX	PU
110	80	616065	25	204	17	160	161	10	82	8	3.500	3	96
160	100	616241	27	224	17	180	180	14,6	85	8	4.060	2	64

FRIALEN Spigots

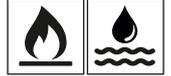
PE 34.010.36
GDE-SDR17

Elbow 90°, PE100, SDR17, injected, elongated



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

Note:
Suitable for use with FRIALEN coupler.



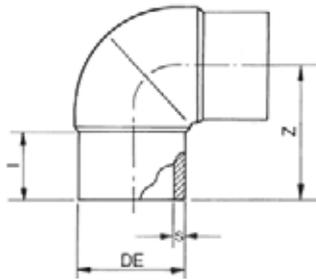
de	Order No.	l	s	Z	Weight [kg]	BX	PU
50	73401036050	80	3	108	0.140	40	
63	73401036063	67	3,8	130	0.190	24	432
75	73401036075	76	4,5	153	0.280	16	288
90	73401036090	83	5,4	173	0.450	12	216
110	73401036110	84	6,6	195	0.770	14	112
125	73401036125	92	7,4	216	1.000	6	108
140	73401036140	97	8,3	237	1.750	5	40
160	73401036160	103	9,5	262	2.300	4	32
180	73401036180	113	10,7	290	3.150	4	32
200	73401036200	122	11,9	317	4.230	5	20
225	73401036225	130	13,4	350	5.000	3	12
250	73401036250	134	14,8	382	7.800	2	30
280	73401036280	154	16,6	430	10.720	2	8
315	73401036315	153	18,7	465	15.810	1	



FRIALEN Spigots

PE 34.010.31
GDE-SDR11

Elbow 90°, PE100, SDR11, injected, elongated



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

Note:
Suitable for use with FRIALEN coupler.

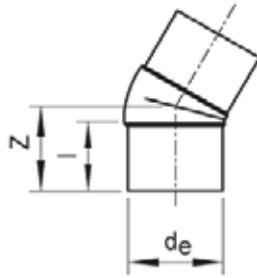


de	Order No.	l	s	Z	Weight [kg]	BX	PU
20	73401031020	52	1,9	73	0.030	60	
25	73401031025	56	2,3	80	0.070	50	5600
32	73401031032	48	2,9	79	0.070	20	1280
40	73401031040	52	3,7	92	0.060	14	896
50	73401031050	59	4,6	107	0.160	40	720
63	73401031063	69	5,8	131	0.270	24	432
75	73401031075	76	6,8	153	0.420	16	288
90	73401031090	83	8,2	173	0.640	12	216
110	73401031110	84	10	195	1.070	14	112
125	73401031125	92	11,4	216	1.450	6	108
140	73401031140	96	12,7	237	2.270	5	40
160	73401031160	103	14,6	262	3.360	4	32
180	73401031180	115	16,4	294	3.600	4	32
200	73401031200	122	18,2	317	5.000	5	
225	73401031225	131	20,5	351	8.030	3	12
250	73401031250	133	22,7	382	10.140	2	8
280	73401031280	153	25,4	432	16.290	2	8
315	73401031315	154	28,6	471	21.360	1	4

FRIALEN Spigots

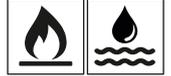
**PE 34.015.36
HDE-SDR17**

Elbow 45°, PE100, SDR17, injected, elongated



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

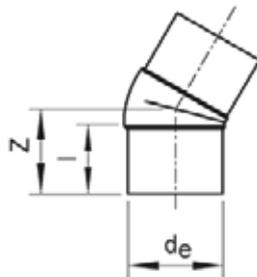
Note:
Suitable for use with FRIALEN coupler.



de	Order No.	l	Z	Weight [kg]	BX	PU
50	73401536050	61	76	0.090	10	640
63	73401536063	65	88	0.130	6	384
75	73401536075	71	90	0.200	24	432
90	73401536090	83	105	0.340	12	216
110	73401536110	91	121	0.580	8	144
125	73401536125	97	137	0.810	6	108
140	73401536140	120	168	1.280	8	64
160	73401536160	142	190	1.600	5	40
180	73401536180	141	196	2.450	4	32
200	73401536200	152	207	2.340	5	20
225	73401536225	153	210	4.100	4	16
250	73401536250	133	220	5.860	3	12
280	73401536280	142	227	7.650	2	8
315	73401536315	154	250	10.440	2	

**PE 34.015.31
HDE-SDR11**

Elbow 45°, PE100, SDR11, injected, elongated



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

Note:
Suitable for use with FRIALEN coupler.



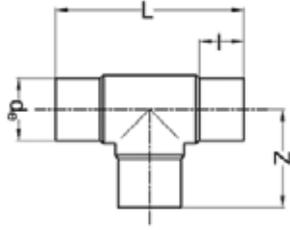
de	Order No.	l	Z	Weight [kg]	BX	PU
25	73401531025	57	75	0.030	40	4480
32	73401531032	71	90	0.060	30	1920
40	73401531040	74	95	0.090	16	1024
50	73401531050	62	76	0.110	60	1080
63	73401531063	66	88	0.240	30	540
75	73401531075	71	90	0.290	25	450
90	73401531090	83	105	0.480	12	216
110	73401531110	93	121	0.850	8	144
125	73401531125	99	137	1.090	6	108
140	73401531140	121	168	1.760	8	64
160	73401531160	142	190	2.720	5	40
180	73401531180	141	196	3.450	4	32
200	73401531200	153	207	4.750	5	20
225	73401531225	154	210	6.140	4	16
250	73401531250	133	220	8.300	3	12
280	73401531280	144	227	11.040	2	8
315	73401531315	155	250	14.670	2	8



FRIALEN Spigots

PE 34.020.36
TDE-SDR17

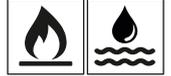
Equal tee, PE100, SDR17, injected, elongated



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

Note:

Suitable for use with FRIALEN coupler.



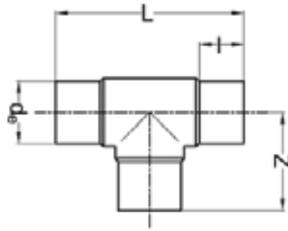
de	Order No.	L	I	Z	Weight [kg]	BX	PU
50	73402036050	184	57	90	0.130	6	384
63	73402036063	214	64	106	0.260	16	288
75	73402036075	246	72	122	0.400	12	216
90	73402036090	277	81	137	0.690	12	96
110	73402036110	321	84	161	1.140	10	80
125	73402036125	345	100	174	1.980	6	48
140	73402036140	395	104	197	2.330	4	32
160	73402036160	410	104	206	3.600	8	32
180	73402036180	525	141	260	4.880	4	16
200	73402036200	501	123	250	8.600	3	12
225	73402036225	555	129	276	8.260	2	8
250	73402036250	576	132	288	9.380	1	4
280	73402036280	617	132	309	12.980	1	4
315	73402036315	695	153	346	17.650	1	4



FRIALEN Spigots

PE 34.020.31
TDE-SDR11

Equal tee, PE100, SDR11, injected, elongated



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

Note:

Suitable for use with FRIALEN coupler.



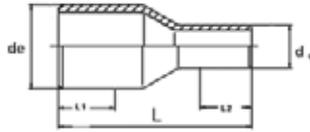
de	Order No.	L	I	Z	Weight [kg]	BX	PU
20	73402031020	108	41	54	0.030	10	
25	73402031025	120	41	60	0.040	30	1920
32	73402031032	139	46	67	0.060	20	1280
40	73402031040	165	52	82	0.130	10	640
50	73402031050	184	57	92	0.190	6	384
63	73402031063	216	65	105	0.040	16	288
75	73402031075	248	72	122	0.550	12	216
90	73402031090	277	80	137	0.940	12	72
110	73402031110	321	88	162	1.580	10	80
125	73402031125	350	98	176	2.240	6	48
140	73402031140	399	104	200	2.910	4	32
160	73402031160	413	104	206	4.290	8	32
180	73402031180	528	143	260	6.890	12	80
200	73402031200	505	124	253	8.330	3	12
225	73402031225	559	129	278	11.700	3	12
250	73402031250	582	132	291	13.900	1	4
280	73402031280	622	133	312	18.860	1	4
315	73402031315	690	153	351	26.150	1	4



FRIALEN Spigots

PE 34.091.36
RDE-SDR17

Reducer, PE100, SDR17, concentric, injected, elongated



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

Note:

Suitable for use with FRIALEN coupler.



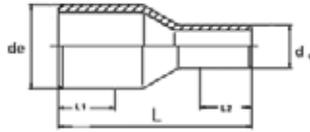
de	d1	Order No.	L	l1	l2	Weight [kg]	BX	PU
63	50	73409136063050	152	64	58	0.100	10	640
75	63	73409136075063	166	70	63	0.160	20	360
90	63	73409136090063	182	79	63	0.250	20	360
90	75	73409136090075	185	80	63	0.240	20	360
110	75	73409136110075	183	83	73	0.320	16	288
110	90	73409136110090	185	83	80	0.390	14	252
125	63	73409136125063	200	90	68	0.470	1	
125	90	73409136125090	200	90	81	0.460	9	162
125	110	73409136125110	200	91	90	0.500	9	162
140	90	73409136140090	235	112	86	0.630	12	96
140	110	73409136140110	237	114	91	0.690	12	96
140	125	73409136140125	235	117	96	0.740	14	112
160	90	73409136160090	254	109	84	0.820	10	80
160	110	73409136160110	254	110	89	0.890	10	80
160	125	73409136160125	254	110	95	0.960	10	
160	140	73409136160140	254	110	106	1.010	10	80
180	125	73409136180125	250	105	87	1.210	8	64
180	160	73409136180160	279	126	125	1.450	8	
200	140	73409136200140	279	123	114	1.590	6	
200	160	73409136200160	278	122	124	1.650	6	48
225	160	73409136225160	275	125	118	2.180	4	32
225	180	73409136225180	275	125	118	2.140	4	32
250	160	73409136250160	308	151	98	2.480	3	42
250	180	73409136250180	316	153	105	2.850	6	
250	200	73409136250200	325	154	113	3.970	2	16
250	225	73409136250225	330	155	122	4.370	2	16
280	200	73409136280200	330	142	116	3.880	2	16
280	225	73409136280225	335	140	124	4.100	2	16
280	250	73409136280250	340	139	134	4.420	2	16
315	225	73409136315225	371	152	125	5.290	2	16
315	250	73409136315250	367	151	133	5.640	2	16
315	280	73409136315280	369	150	140	5.950	4	16



FRIALEN Spigots

**PE 34.091.31
RDE-SDR11**

Reducer, PE100, SDR11, concentric, injected, elongated



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

Note:
Suitable for use with FRIALEN coupler.



de	d1	Order No.	L	l1	l2	Weight [kg]	BX	PU
25	20	73409131025020	90	41	41	0.020	90	4320
32	20	73409131032020	101	44	41	0.030	270	4320
32	25	73409131032025	100	44	41	0.030	60	4320
40	25	73409131040025	104	49	41	0.040	40	2880
40	32	73409131040032	105	49	44	0.040	120	2160
50	25	73409131050025	118	55	43	0.060	100	1800
50	32	73409131050032	132	57	47	0.070	20	1280
50	40	73409131050040	134	55	51	0.080	20	1280
63	32	73409131063032	144	63	44	0.110	60	1080
63	40	73409131063040	147	63	49	0.120	10	640
63	50	73409131063050	152	64	58	0.140	50	900
75	50	73409131075050	148	70	57	0.170	20	
75	63	73409131075063	171	70	65	0.210	30	540
90	50	73409131090050	174	79	57	0.280	20	360
90	63	73409131090063	182	79	70	0.300	20	360
90	75	73409131090075	180	79	70	0.350	20	360
110	63	73409131110063	185	84	69	0.450	16	288
110	75	73409131110075	185	84	74	0.480	16	288
110	90	73409131110090	186	84	81	0.550	16	288
125	63	73409131125063	200	91	69	0.640	10	180
125	90	73409131125090	200	87	79	0.660	9	162
125	110	73409131125110	200	87	82	0.760	9	162
140	90	73409131140090	237	112	86	0.900	12	168
140	110	73409131140110	230	116	90	1.040	12	96
140	125	73409131140125	235	117	96	0.980	12	96
160	90	73409131160090	254	109	84	1.100	10	80
160	110	73409131160110	254	110	89	1.300	10	80
160	125	73409131160125	254	110	95	1.300	10	80
160	140	73409131160140	254	110	106	1.580	10	80
180	125	73409131180125	245	105	87	1.730	8	112
180	160	73409131180160	279	126	125	2.100	8	64
200	160	73409131200160	277	122	122	2.200	1	
225	160	73409131225160	295	132	123	3.070	4	32
225	180	73409131225180	285	130	118	3.470	4	32
250	160	73409131250160	308	149	100	4.070	3	24
250	180	73409131250180	316	151	105	4.270	3	24
250	200	73409131250200	324	151	116	4.580	2	16
250	225	73409131250225	330	155	122	5.280	2	
280	200	73409131280200	345	140	116	6.700	2	28
280	225	73409131280225	335	142	122	6.090	2	16
280	250	73409131280250	340	139	135	6.700	2	16
315	225	73409131315225	365	150	125	7.960	4	16
315	250	73409131315250	365	150	134	8.470	4	
315	280	73409131315280	365	150	145	5.160	4	28

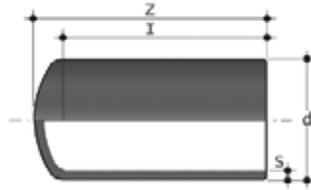


FRIALEN Spigots

PE 34.096.36
CDE-SDR17

End cap, PE100, SDR17, injected, elongated

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



Note:

Suitable for use with FRIALEN coupler.

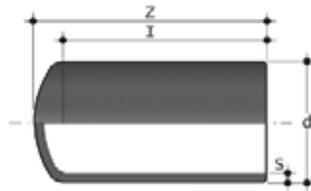


de	Order No.	l	s	Z	Weight [kg]	BX	PU
50	73409636050	59	3	70	0.040	40	2560
125	73409636125	92	7,4	127	0.630	18	324
140	73409636140	97	8,3	136	0.480	12	216
160	73409636160	107	9,5	155	0.740	6	108
180	73409636180	114	10,7	166	1.660	12	96
200	73409636200	117	11,9	179	1.490	10	80
225	73409636225	127	13,4	203	1.800	6	48
250	73409636250	140	14,8	216	4.760	4	32
280	73409636280	149	16,6	238	3.290	6	24
315	73409636315	158	18,7	258	4.560	2	16

PE 34.096.31
CDE-SDR11

End cap, PE100, SDR11, injected, elongated

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



Note:

Suitable for use with FRIALEN coupler.



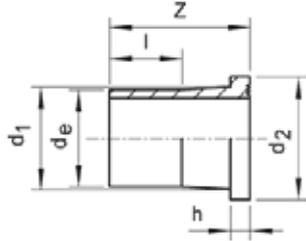
de	Order No.	l	s	Z	Weight [kg]	BX	PU
25	73409631025	40	2,3	52	0.010	180	
32	73409631032	44	2,9	58	0.020	100	6400
40	73409631040	50	3,7	67	0.030	50	3200
50	73409631050	55	4,6	75	0.050	20	1280
63	73409631063	62	5,8	85	0.100	15	960
75	73409631075	63	6,8	95	0.140	10	640
90	73409631090	79	8,2	110	0.230	36	648
110	73409631110	88	10	127	0.400	18	324
125	73409631125	93	11,4	128	0.530	18	324
140	73409631140	97	12,7	136	0.790	12	216
160	73409631160	108	14,6	156	2.250	6	
180	73409631180	113	16,4	167	1.430	12	96
200	73409631200	117	18,2	180	1.930	10	80
225	73409631225	127	20,5	203	2.250	6	
250	73409631250	138	22,7	217	5.250	4	32
280	73409631280	151	25,4	239	4.820	6	24
315	73409631315	158	28,6	256	6.860	2	16



FRIALEN Spigots

PE 34.079.36
QDE-SDR17

Stub end, PE 100, SDR 17, elongated, grooved sealing surface



- For resistance butt welding and resistance coil welding
- Injection moulded
- Dimensions > 500 mm on request (from 710 mm manufactured by machining)
- When using butterfly valves, check that the butterfly valve opens fully. The weld neck may need to be turned out.



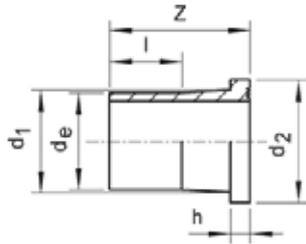
de	d1	d2	Order No.	h	l	Z	Weight [kg]	BX	PU
50	60	88	73407936050	12	62	90	0.120	10	640
63	75	102	73407936063	14	70	106	0.180	32	576
75	89	122	73407936075	16	90	125	0.270	24	432
90	105	138	73407936090	17	100	140	0.380	15	270
110	125	158	73407936110	18	113	158	0.580	20	160
125	132	158	73407936125	18	122	170	0.640	8	144
140	153	188	73407936140	18	130	173	0.860	12	96
160	175	212	73407936160	18	160	208	1.270	8	64
180	186	212	73407936180	20	140	200	1.300	8	64
200	232	268	73407936200	24	133	199	2.180	8	32
225	235	268	73407936225	24	135	201	2.260	7	28
250	285	320	73407936250	25	148	220	3.660	6	24
280	291	320	73407936280	25	154	230	3.810	5	20
315	335	370	73407936315	25	166	242	5.300	2	16



FRIALEN Spigots

PE 34.079.31
QDE-SDR11

Stub end, PE 100, SDR 11, elongated, grooved sealing surface



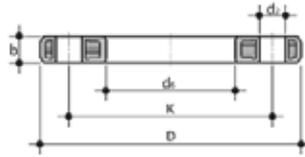
- For resistance butt welding and resistance coil welding
- Injection moulded
- Dimensions > 500 mm on request (from 710 mm manufactured by machining)
- When using butterfly valves, check that the butterfly valve opens fully. The weld neck may need to be turned out.



de	d1	d2	Order No.	h	l	Z	Weight [kg]	BX	PU
20	27	45	73407931020	7	64	88	0.070	1	
25	33	58	73407931025	9	62	90	0.040	180	
32	40	68	73407931032	10	62	86	0.070	25	
40	50	78	73407931040	11	62	89	0.080	16	1024
50	60	88	73407931050	12	62	90	0.140	50	900
63	75	102	73407931063	14	70	106	0.160	32	450
75	89	122	73407931075	16	90	125	0.320	24	432
90	105	138	73407931090	17	100	140	0.460	15	270
110	125	158	73407931110	18	113	160	0.720	20	160
125	132	158	73407931125	25	116	170	0.980	8	144
140	155	188	73407931140	25	128	182	1.280	12	96
160	175	212	73407931160	25	155	208	1.830	8	64
180	182	212	73407931180	30	168	202	1.960	8	64
200	232	268	73407931200	32	140	206	3.100	8	32
225	235	268	73407931225	32	135	201	3.260	7	28
250	285	320	73407931250	35	138	219	5.180	6	24
280	291	320	73407931280	35	152	231	4.700	5	
315	335	370	73407931315	35	158	239	7.580	2	16

FRIALEN Spigots

29.070.33 ODT Loose flange, PP/steel, for stub end

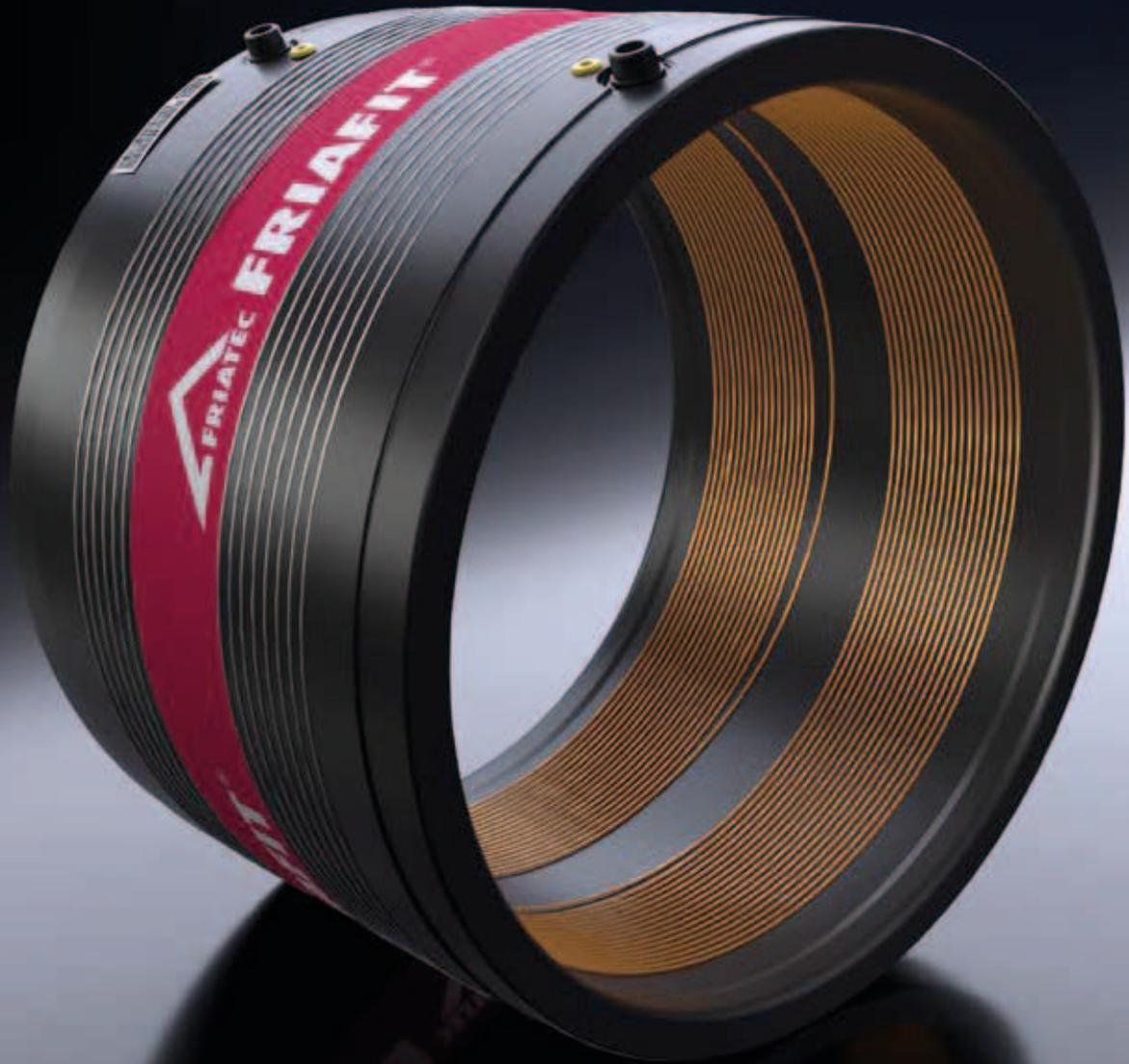


- Flange with steel core and PP glass fibre reinforced coating for weld neck
- d 20 to d 90 suitable for flange socket
- Flange connection dimensions according to DIN EN 1092-1:
 - PN 10/16 to d 180
 - PN 10 from d 200
- Loose flanges d 200 mm to d 630 mm with flange connection size PN 16 according to DIN EN 1092-1 on request
- Flange connection size ANSI and PN16 on request
- Bolt tightening torques according to DVS 2210-1

	d	d2	DN	Order No.	b	D	d6	K	PN	Screws	Weight [kg]	BX	PU
1)	20	14,6	15	72907033020	13	100	28	65	16	4 x M12	0.220	24	96
1)	25	14,6	20	72907033025	15	111	34	75	16	4 x M12	0.310	48	60
1)	32	14,6	25	72907033032	17	120,2	42	85	16	4 x M12	0.450	28	48
1)	40	18,6	32	72907033040	18	140	51	100	16	4 x M16	0.680	8	140
1)	50	18,6	40	72907033050	19	150	62	110	16	4 x M16	0.910	8	140
1)	63	18,6	50	72907033063	19	164	78	125	16	4 x M16	1.100	8	96
1)	75	18,6	65	72907033075	19	186	92	145	16	4 x M16	1.200	10	80
1)	90	18,6	80	72907033090	20	200,8	109	160	16	8 x M16	1.430	8	60
	110	18,6	100	72907033110	20	221	128	180	16	8 x M16	1.500	8	60
	125	18,6	100	72907033125	20	221	135	180	16	8 x M16	1.330	8	60
	140	18,6	125	72907033140	24	251	158	210	16	8 x M16	2.200	6	48
	160	22,6	150	72907033160	25	284	178	240	16	8 x M20	3.120	5	48
	180	22,6	150	72907033180	25	284	191	240	16	8 x M20	2.590	5	48
	200	22,6	200	72907033200	27	340	235	295	16	8 x M20	4.180	4	42
	225	22,6	200	72907033225	27	340	238	295	16	8 x M20	4.000	4	42
	250	22,6	250	72907033250	30	395,6	288	350	16	12 x M20	5.660	3	54
	280	22,6	250	72907033280	30	395,6	294	350	16	12 x M20	5.180	3	54
	315	22,6	300	72907033315	32	446	338	400	16	12 x M20	7.120	2	24

1) Suitable for flange socket





FRIAFIT Sewage system

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



FRIALOAD – it's so easy

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 considerably 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

For further information, please visit our Homepage:

www.aliaxis.de/en/friaload



Your contact

Kai Büssecker

kai.buessecker@aliaxis.com



Things worth knowing about FRIAFIT Sewage System

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	-

¹⁾ MOP wird individuell vom Netz-Betreiber vorgegeben und kann durch nationale Bestimmung reglementiert sein.

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.

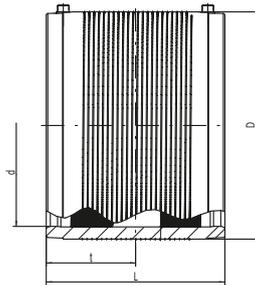
The annular stiffness of the pipe connection, which is fused with FRIAFIT couplers, is in any case higher than the annular stiffness of the pipe inserted.



FRIAFIT couplers

AM

Coupler without inner stop, SDR 17



Coupler without inner stop, SDR 17

- For connecting water and sewage pipes made of HD-PE
- Material: PE 100-RC up to d 225, PE 100 from d 250
- 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-RC / PE 100 SDR 17

Maximum permissible working pressure 10 bar (water / sewage)

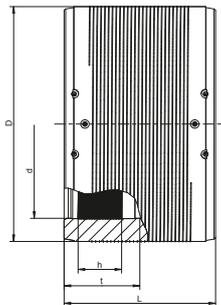


d	Order No.	SDR range	D	L	t	Weight [kg]	BX	PU
110	680001	17 - 33	130	160	80	0.540	24	192
125	680013	17 - 33	146	160	80	0.630	22	176
160	680002	17 - 33	184	180	90	1.100	12	96
180	680003	17 - 33	207	180	90	1.320	8	64
200	680004	17 - 33	236	180	90	2.070	1	75
225	680005	17 - 33	263	200	100	2.760	1	52
250	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)



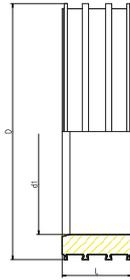
d	Order No.	SDR range	B	D	h	L	t	Weight [kg]	BX	PU
560	615706	17 - 33	632	630	77	380	190	24.800	1	2
630	615726	17 - 33	712	710	101	420	210	34.870	1	2
710	615994	17 - 33	802	800	112	442	221	47.500	1	2
800	616290	17 - 33	902	900	137	500	250	65.900	1	1
900	616345	17 - 33	1026	1024	110	500	250	91.500	1	1
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



FRIAFIT couplers

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

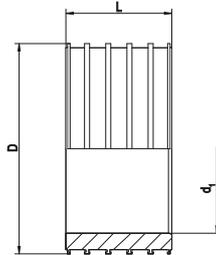
PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

Pipe diameter	d1	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 / 250	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

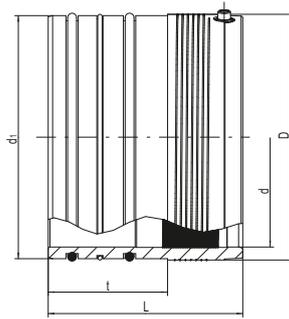
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

Pipe diameter	d1	Order No.	D	L	Weight [kg]	BX	PU
225 / 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 MTO.

PE 100

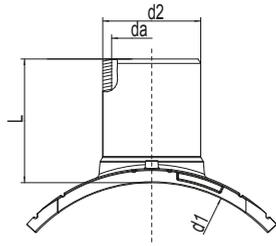
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d	d1	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

ASA UNI

Spigot sewage saddle, top loading, SDR 17



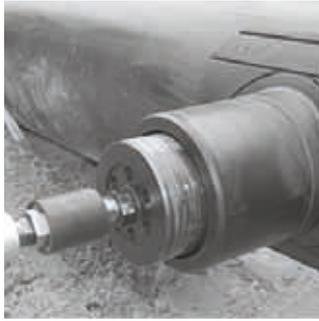
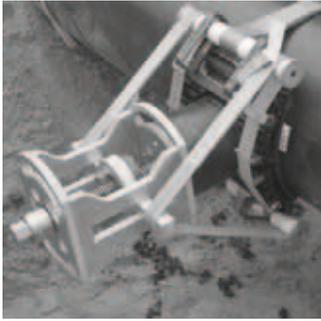
Spigot sewage saddle, top loading ASA UNI, SDR 17

- 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-RC

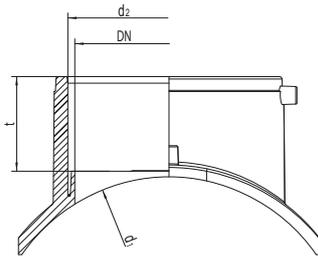
Maximum permissible working pressure 2.5 bar (sewage)

d1	d2	Order No.	Weight [kg]	BX	PU
630-900	160	682639	1.570	5	40



ASA VL 160

Sewage saddle, vacuum loading, SDR 17



Sewage saddle, vacuum loading ASA VL 160, SDR 17

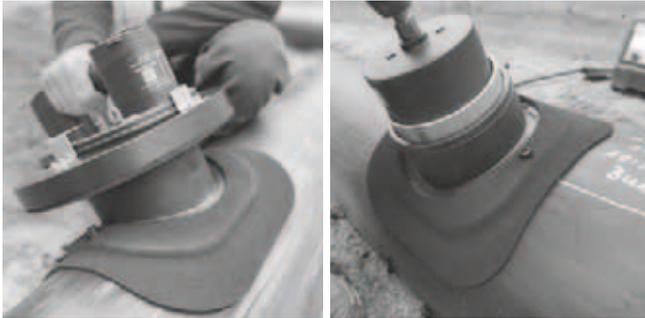
- Compact component made from HD-PE with integrated fusion coupler in the outlet (d 160)
- For a connection for connecting pipes to existing PE main channel
- Safety technology

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.



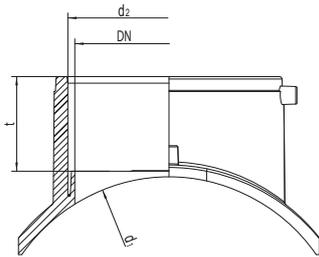
PE 100

Maximum permissible working pressure 2.5 bar

	d1	d2	DN	Order No.	B1	B2	H1	H2	t	Weight [kg]	BX	PU
	200	160	150	682644	270	210	163	92	76	0.990	10	80
	225	160	150	682645	270	230	165	94	76	0.950	10	80
	250 / 280	160	150	682614	270	240	143	72	76	0.810	10	80
	315	160	150	682649	270	250	139	68	76	0.990	10	80
	355	160	150	682620	270	255	129	58	76	0.960	10	80
	400	160	150	682621	270	255	123	52	76	0.900	10	80
	450	160	150	682656	270	255	117	46	76	0.890	10	80
	500/560/630	160	150	682622	270	255	117	46	76	0.900	10	80
	560	160	150	682659	270	273	113	42	76	1.020	10	80
1)	630	160	150	682667	270	273	110	39	76	1.020	10	80
1)	710	160	150	682664	270	275	107	36	76	1.020	10	80

1) Available from Q1 / 2026

ASA VL KG 160 Sewage transition saddle, vacuum loading, SDR 17



Sewage transition saddle, vacuum loading ASA VL KG 160, SDR 17

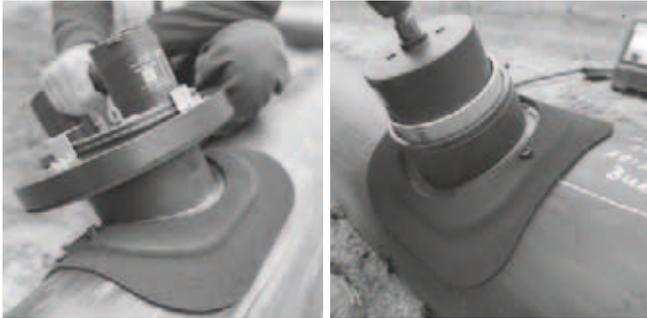
- Compact component made from HD-PE with integral socket in the outlet (d 160)
- For connecting connecting pipes made of PVC/PP DN 150 to existing PE main channel
- Safety technology

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

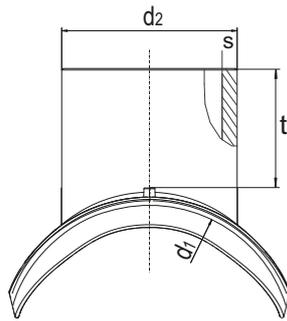
	d1	d2	DN	Order No.	B1	B2	H1	H2	t	Weight [kg]	BX	PU
	225	160	150	682646	270	210	163	92	76	1.060	10	80
	250 / 280	160	150	682625	270	240	143	72	76	1.040	10	80
	315	160	150	682652	270	240	143	72	76	1.060	10	80
	355	160	150	682627	270	255	129	58	76	1.060	10	80
	450	160	150	682657	270	255	129	58	76	0.990	10	80
	500/560/630	160	150	682629	270	255	117	46	76	0.940	10	80
	560	160	150	682666	270	273	113	42	76	1.120	10	80
1)	630	160	150	682668	270	273	110	39	76	1.120	10	80
1)	710	160	150	682665	270	275	107	36	76	1.120	10	80

1) Available from Q1 / 2026



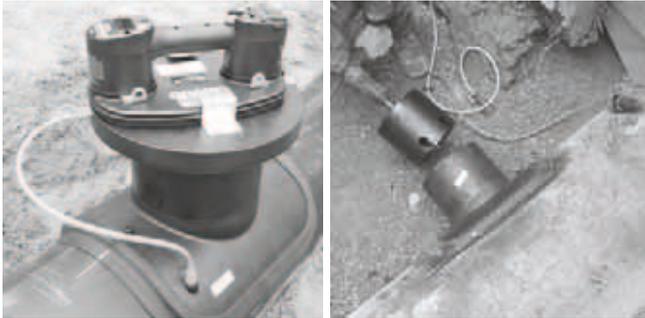
ASA VL 225

Sewage saddle, vacuum loading, SDR 17



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)

d1	d2	Order No.	B1	B2	H1	H2	s	t	Weight [kg]	BX	PU
355	225	682640	425	359	322	152	13,4	144	3.090	1	4
450	225	682641	425	376	287	117	13,4	144	3.090	1	6
560	225	682642	425	412	277	107	13,4	144	3.090	1	6
630	225	682643	425	416	263	96	13,4	144	3.090	1	6

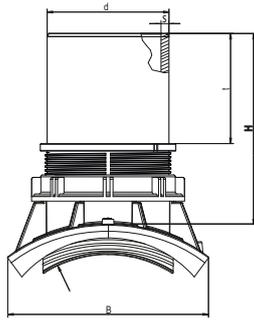
Cross-dimension processing

Ø pipe	d2	Order No.
315 400	225	682640
500	225	682641
710	225	682643

FRIAFIT saddles

ASA MULTI

Spigot sewage transition saddle



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	s	t	Weight [kg]	BX	PU
1)	160	682650	265	250	9,5	146	2.700	5	40
2)	160	682651	265	250	9,5	146	2.800	5	40
3)	160	682651	265	250	9,5	146	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



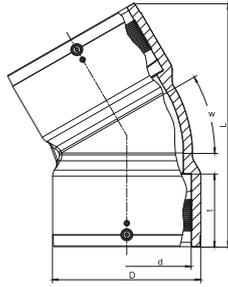
Order No.	Weight [kg]	BX	PU
682660	0.150	20	100



FRIAFIT shapes

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

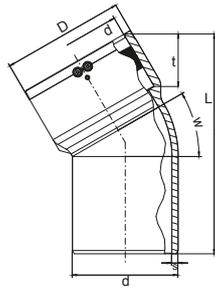
PE 100

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

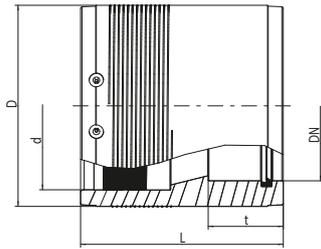
Maximum permissible working pressure 2.5 bar

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



FRIAFIT transition fittings

AMKG Transition coupler PE-PVC/PP



Transition coupler PE-PVC/PP AMKG

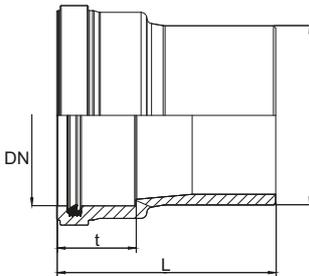
- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side with integrated coupler with safety technology
- PVC/PP side as coupler with SBR lip seal with large insertion depth

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 fitting PE - PVC/PP



Transition fitting PE - PVC/PP UKG

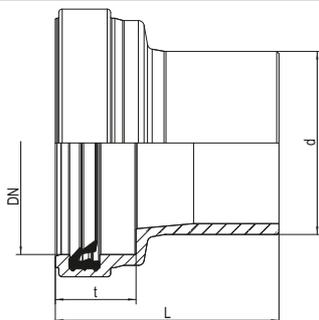
- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side can be fused with FRIAFIT AM coupler, bend ABM/ABMS or with FRIAFIT ASA VL sewage saddles
- PVC/PP side as coupler with SBR lip seal with large insertion depth

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 fitting 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

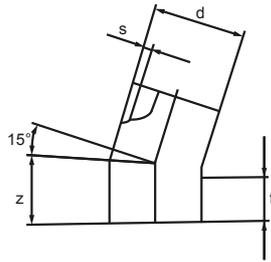
d	DN	Order No.	L	t	Weight [kg]	BX	PU
160	150	682623	194	70	1.210	2	36



FRIAFIT spigots

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

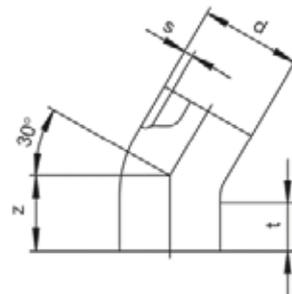
PE 100

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

d	Order No.	s	t	Z	Weight [kg]	BX	PU
160	681006	9,1	170	280	2.280	1	
225	681008	12,8	250	370	4.920	1	15
280	681023	15,9	300	438	12.500	1	
355	681020	20,1	300	528	24.300	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)

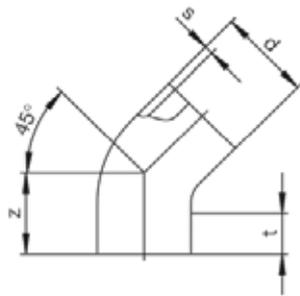
d	Order No.	s	t	Z	Weight [kg]	BX	PU
160	681001	9,1	170	280	2.280	1	
225	681003	12,8	250	371	4.920	1	15
280	681022	15,9	300	440	12.500	1	
315	681021	17,9	300	480	17.400	1	10
355	681019	20,1	300	520	24.300	1	



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

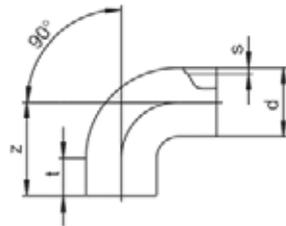
PE 100

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

d	Order No.	s	t	Z	Weight [kg]	BX	PU
160	681201	9,1	170	280	2.280	1	
200	681203	11,4	250	349	5.900	1	
225	681204	12,8	250	380	5.670	1	
250	681205	14,2	250	411	8.430	1	
280	681206	15,9	300	448	15.300	1	4
315	681207	17,9	300	491	22.500	1	
355	681208	20,1	300	541	24.300	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)

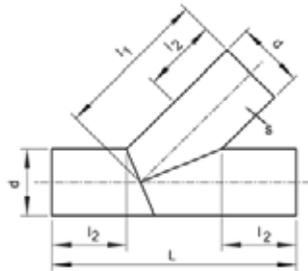
d	Order No.	s	t	Z	Weight [kg]	BX
160	681601	9,1	100	390	3.380	1
225	681603	12,8	150	488	7.100	1



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

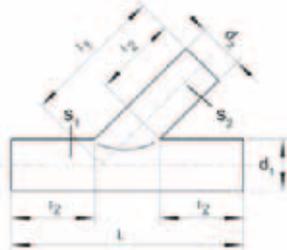
PE 100

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

Reduced branch 45° (spigot fitting)



Reduced branch 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

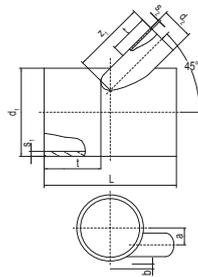
Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d1	d2	Order No.	L	l1	l2	s1_klein	s2_klein	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

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



Reduced 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

d1	d2	Order No.	a	b	L	s1_klein	s2_klein	t	z1	Weight [kg]	BX
315	160	682301	50	30	630	17,9	9,1	200	320	13.400	1
315	225	682302	20	25	720	17,9	12,8	200	320	17.000	1
355	160	682303	68	30	630	20,1	9,1	200	335	16.600	1
355	225	682304	40	25	720	20,1	12,8	200	335	20.900	1
450	160	682305	115	30	670	25,5	9,1	200	370	26.600	1
450	225	682306	87	25	760	25,5	12,8	200	370	32.300	1
560	160	682307	170	30	670	31,7	9,1	200	410	39.900	1
560	225	682308	142	25	760	31,7	12,8	200	410	47.600	1
630	160	682309	205	30	670	35,7	9,1	200	440	49.900	1
630	225	682310	177	25	760	35,7	12,8	200	440	59.100	1

PE 100

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

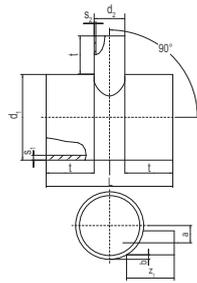
d1	d2	Order No.	a	b	L	s1_klein	s2_klein	t	z1	Weight [kg]	BX
315	160	682311	50	30	630	17,9	9,1	200	320	13.400	1
315	225	682312	20	25	720	17,9	12,8	200	320	17.400	1
355	160	682313	68	30	630	20,1	9,1	200	335	16.600	1
355	225	682314	40	25	720	20,1	12,8	200	335	20.900	1
450	160	682315	115	30	670	25,5	9,1	200	370	26.600	1
450	225	682316	87	25	760	25,5	12,8	200	370	32.300	1
560	160	682317	170	30	670	31,7	9,1	200	410	39.900	1
560	225	682318	142	25	760	31,7	12,8	200	410	47.600	1
630	160	682319	205	30	670	35,7	9,1	200	440	49.900	1
630	225	682320	177	25	760	35,7	12,8	200	440	59.100	1



FRIAFIT spigots

ATSRS 90

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



Reduced 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

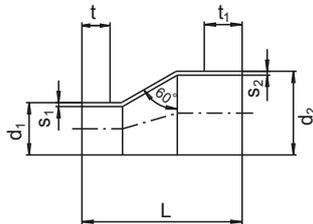
PE 100

Maximum permissible test pressure 0.5 bar according to DIN EN 1610

d1	d2	Order No.	a	b	L	s1_klein	s2_klein	t	z1	Weight [kg]	BX
315	160	682401	50	30	565	17,9	9,1	200	280	12.100	1
315	225	682402	20	25	630	17,9	12,8	200	280	15.300	1
355	160	682403	68	30	660	20,1	9,1	200	290	15.200	1
355	225	682404	40	25	730	20,1	12,8	200	290	20.700	1
450	160	682405	115	30	660	25,5	9,1	200	315	25.600	1
450	225	682406	87	25	730	25,5	12,8	200	315	30.700	1
560	160	682407	170	30	660	31,7	9,1	200	340	39.000	1
560	225	682408	142	25	730	31,7	12,8	200	340	45.300	1
630	160	682409	205	30	660	35,7	9,1	200	360	48.800	1
630	225	682410	177	25	730	35,7	12,8	200	360	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

d1	d2	Order No.	L	s1_klein	s2_klein	t	t1	Weight [kg]	BX
110	125	681018	264	6,6	7,4	85	85	0.700	1
110	160	681801	310	6,6	9,5	90	95	1.400	1
160	225	681802	404	9,5	13,4	100	150	3.200	1
200	225	681804	440	11,9	12,8	100	250	4.100	1
225	280	681810	540	13,4	16,6	150	250	11.500	1







FRIATOOLS Technical equipment

Convenient and durable devices and tools for pipe connections.

FRIAMAT area of application

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

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 7 prime or FRIAMAT prime eco 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)

Note:

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

Short text	Order No.	Weight [kg]
With mini scanner	611134	12.300
With 1D/2D scanner	614134	12.300

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)

Note:

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

Short text	Order No.	Weight [kg]
With mini scanner	611124	18.000
With 1D/2D scanner	614124	18.000



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)

Note:

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

Short text	Order No.	Weight [kg]
With mini scanner	611130	12.300
With 1D/2D scanner	614130	12.300

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)

Note:

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

Short text	Order No.	Weight [kg]
With mini scanner	611120	18.000
With 1D/2D scanner	614120	18.000

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)

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.	Weight [kg]
With UK mains plug	611129-UK0	18.950
With CAN mains plug	611129-UKC	18.950
With US mains plug and special transport case	611129-USI	18.950



FRIATOOLS fusion units

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

FRIATOOLS fusion units - accessories

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.	Weight [kg]
Mini scanner	624005	0.250

FWLESST

Reader wand



FRIAMAT reader wand

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

Short text	Order No.	Weight [kg]
Reader wand	623645	0.160



FRIATOOLS fusion units - accessories

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.	Weight [kg]
1D-2D scanner	624006	0.800

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.	Weight [kg]
624023	0.030

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.	Weight [kg]
623101	0.010

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.	Weight [kg]
623100	0.010



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.	Weight [kg]
624003	0.010

ALTK FMT

Transport boxes



For transporting and storing FRIAMAT fusion units.

Note:
Transport boxes for older FRIAMAT types available on request.

Short text	Order No.	Weight [kg]
FRIAMAT fusion units from model year 2018	627600	6.600

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	Order No.	Weight [kg]
Special case for FRIAMAT from model year 2018	627601	9.600

CONTACT4

Socket contacts 4.0 mm



- Socket contacts 4.0 mm
- For all FRIAMAT fusion units

Short text	Order No.	Weight [kg]
Contact 4 (pair) black	624529	0.030

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	Order No.	Weight [kg]
Adaptor bifilar (pair)	613236	0.020

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	Order No.	Weight [kg]
Adaptor 4.7 mm (pair)	613237	0.020





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.	Weight [kg]
FWSG RA 25 for d 25	11	613576	0.400
FWSG RA 32 for d 32	11	613580	0.400
FWSG RA 40 for d 40	11	613581	0.500
FWSG RA 50 for d 50	11	613582	0.600
FWSG RA 63 for d 63	11	613583	0.700
Crank handle for d 25 - d 63		613579	0.130
FWSG RA case for d 32 - d 63		613586	0.130

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.	Weight [kg]
FWSG 63 for d 20 - d 63	613408	2.500

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.	Weight [kg]
FWSG 225 for d 75 - d 225	613409	6.900

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.	Weight [kg]
FWSG 400 for d 75 - d 400	613410	4.840



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.	Weight [kg]
FWSG 710 L for d 250 - d 710	613642	11.300

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.	Weight [kg]
FWSG 710 S for d 250 - d 710	613639	7.230

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.	Weight [kg]
FWSG SE 63 for d 63	613562	4.100
FWSG SE 75 for d 75	613563	4.300
FWSG SE 90 for d 90	613564	4.600
FWSG SE 110 for d 110	613565	4.600
FWSG SE 125 for d 125	613566	4.600
FWSG SE 140 for d 140	613567	4.900
FWSG SE 160 for d 160	613568	4.900
FWSG SE 180 for d 180	613569	5.100
FWSG SE 200 for d 200	613570	5.600
FWSG SE 225 for d 225	613571	5.600
FWSG SE 250 for d 250	613572	8.200
FWSG SE 280 for d 280	613573	8.200
FWSG SE 315 for d 315	613574	8.200

FRIATOOLS scraper tools

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.	Weight [kg]
FWSG SE 2 IPS	613512	3.850
FWSG SE 3 IPS	613513	3.850
FWSG SE 4 IPS	613514	3.850
FWSG SE 6 IPS	613515	4.900
FWSG SE 8 IPS	613516	5.600
FWSG SE 12 IPS	613519	8.200

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.	Weight [kg]
FWSK for d 250 - 1000	613383	9.300

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.	Weight [kg]
FWSK 1200 for d 800 - 1200	613386	9.300



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

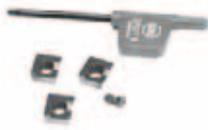


- Replacement blade made of hard metal FWSGE 3
- 3 pieces Replacement blade
 - 1 piece Torx screw
 - 1 piece Torx wrench.

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

Short text	Order No.	Weight [kg]
FWSGE 3, red coloured, for FWSG 225 / FWSG 315 (up to model year Q3/2019)	613322	0.020

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.	Weight [kg]
FWSGE 4, green coloured, for FWSG 63 (up to model year 2018)	613323	0.020

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.	Weight [kg]
FWSGE 5, blue coloured, for FWSG 710 L/S and FWSG 900 L	613324	0.020

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.	Weight [kg]
FWSGE 8, for FWSG SE (all types)	613327	0.020

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.	Weight [kg]
FWSGE 10, for FWSG RA 32 and 40	613329	0.020

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

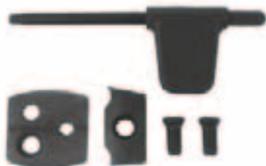


Short text	Order No.	Weight [kg]
FWSGE 11, for FWSG RA 50 and 63	613330	0.020

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.	Weight [kg]
FWSGE 12, for FWSG XL	613331	0.020

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.	Weight [kg]
FWSGE 13, for FWSG RA 25	613332	0.020



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.	Weight [kg]
FWSGE 14, white coloured, for FWSG 225/FWSG 400 (from model year 2019)	613335	0.020

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.	Weight [kg]
FWSGE 15, orange coloured, for FWSG 63 (from model year 2018)	613336	0.020

FWSGE K

Replacement blades for scraper chain FWSK

Replacement blades for scraper chain

Short text	Order No.	Weight [kg]
FWSGE K, for FWSK	613337	0.020



ALTK FWSG

Transport boxes

For transporting and storing scraper tools.

Note

Transport boxes for older scraper tools on request.



Short text	Order No.	Weight [kg]
Type of device: FWSG 63	613307	0.700
1) Type of device: FWSG 225 and FWSG 63/225	613309	2.000
Type of device: FWSG 400 (from model year 2019)	613407	0.700
Type of device: FWSG 710 S	613308	2.100
Type of device: FWSG 710 L	613314	3.700
Type of device: FWSG 900 L	613304	3.500
Type of device: FWSG SE 63	613303	1.000
Type of device: FWSG SE 75 - 140	613319	1.000
Type of device: FWSG SE 160 - 225	613318	1.000
Type of device: FWSG SE 250 - 315	613320	0.020

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.	Weight [kg]
Hand scraper	613300	0.110
Replacement blade	613270	0.020

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.	Weight [kg]
Hand scraper for large pipes	613299	0.600



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.	Weight [kg]
613350	16.900

UNITOP

Clamping unit for spigot saddles SA UNI / ASA UNI

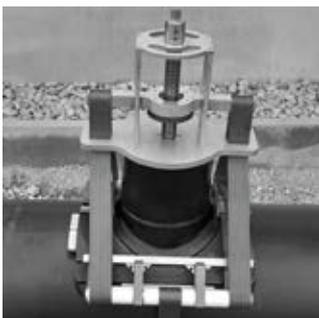


The UNITOP clamping unit is required for the assembly of:

- 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

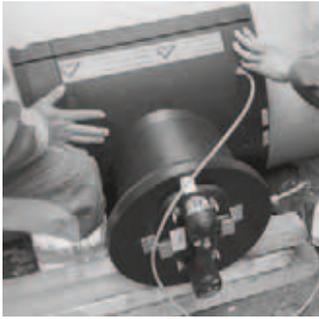


Short text	Order No.	Weight [kg]
UNITOP clamping device from d 250 - d 900 with outlet up to d 160	613385	24.800
UNITOP 250 clamping device from d 315 - d 1200 with outlet d 225/d 250	613387	24.800
ADWL elbow adaptor for socket contacts 4.0 mm	613241	0.200
Clamp adaptor for the outlet of the ASA UNI d 160 spigot saddles	613839	2.200



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.	Weight [kg]
PUMP	613810	1.500
PLATE	617372	6.050



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	Order No.	Weight [kg]
FWAB 90 for FRIALEN SA UNI for d 90	613832	6.400
FWAB 110 for FRIALEN SA UNI for d 110	613833	12.600
FWAB 125 for FRIALEN SA UNI for d 125	613834	4.600
FWAB 160 for FRIALEN SA UNI for d 160	613829	7.000
FWAB 225 for FRIALEN SA UNI for d 225	613830	13.200
FWAB 250 for FRIALEN SA UNI for d 250	613831	14.300
FWAB ASA 160/450 for FRIAFIT ASA VL 160 suitable for pipes up to d 450, SDR 17	613846	11.200
FWAB ASA 160/710 for FRIAFIT ASA VL 160 suitable for pipes up to d 710, SDR 17	613816	11.200
FWAB ASA 225 for FRIAFIT ASA VL 225 for d 225	613835	13.200



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.	Weight [kg]
Universal repair set for d 90 - d 900	613701	2.000
Extension kit for d 90 - d 900	613715	0.500
Repair balloon Type 1 for d 90 - d 180	613702	0.500
Repair balloon Type 2 for d 200 - d 315	613703	0.500
Repair balloon Type 3 for d 355 - d 450	613704	0.500
Repair balloon Type 4 for d 500 - d 560	613705	0.500
Repair balloon Type 5 for d 630	613706	0.500
Repair balloon Type 6 for d 710	613707	0.500
Repair balloon Type 7 for d 800	613708	0.500
Repair balloon Type 8 for d 900	613709	0.500
Transport box	613700	2.100

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

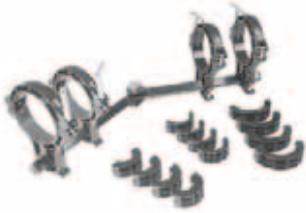
Note:

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

Short text	Order No.	Weight [kg]
CLAMP63	613020	1.500
CLAMP63L	613034	1.500

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.	Weight [kg]
Pipe retaining clamp with 2 clamping elements for d 63, d 90, d 125, d 180	613021	17.000
Additional clamping element (1 piece.) for d 63, d 90, d 125, d 180	613022	5.500
Reducer half-shell set (1 piece) for d 110, d 160	613023	3.000
T extension kit for d 63, d 90, d 125, d 180	613024	11.000

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 20 - d 125.

Short text	Order No.	Weight [kg]
SQM63 for d 20 - d 63 / SQM125 for „d 63 - d 90	613025	4.000
SQM125 for d 63 - d 90 SDR 11 and d 90 - d 125 SDR 17	613026	10.000

SQH

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



SHQ 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.	Weight [kg]
SQH180 for d 63 - d 180	11 / 17,6	613028	36.000



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.	Weight [kg]
RRC90 for d 63, d 75, d 90	613029	13.000
RRC110 for d 110	613030	5.000
RRC125 for d 125	613031	5.000
RRC160 for d 160	613032	7.500
RRC180 for d 180	613033	7.000

FWXR

Manual round clamp for pipes d 160



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

Note:

Manual round clamp for pipes d 180, d 200 (Order no. 613443) and d 225, d 250 (Order no. 613444) on request.

Short text	Order No.	Weight [kg]
FWXR-S1 for d 32, d 40, d 50, d 63	613416	0.810
FWXR-S2 for d 90, d 110	613431	1.780
FWXR-S3 for d 125, d 160	613439	3.500

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.	Weight [kg]
d 280	613452	24.000
d 315	613461	22.000
d 355	613462	23.000
d 400	613463	24.000
d 450	613464	25.000
d 500	613465	29.000
d 560	613467	56.300
d 630	613466	31.000
d 710	613468	43.600
d 800	613460	50.000
d 900	613458	130.000



FRIATOOLS other tools and installation aids

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.	Weight [kg]
d 800 - d 1200	613457	140.000

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.	Weight [kg]
Pipe cutter d 20 - d 63	613040	0.930
Pipe cutter d 50 - d 140	613041	1.530
Replacement cutting wheel d 20 - d 63	613042	0.010
Replacement cutting wheel d 50 - d 140	613043	0.030

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.	Weight [kg]
Pipe shears d 20 - d 40	613044	0.480
Pipe shears d 20 - d 63	613046	1.330
Replacement blade d 20 - d 40	613045	

FWPM

FRIALEN / FRIAFIT marker (silver)



For labelling HD-PE and PE-Xa pipes.

- Colour silver
- Content per pack: 10 pieces.

Order No.	Weight [kg]
613069	0.160

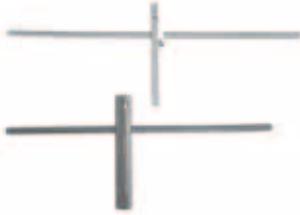


FWSS

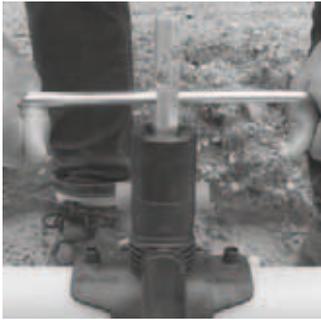
Operating key for tapping tees

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.



d1	Order No.	WS [mm]	Weight [kg]
40-225	613246	17	0.480
90-315	613250	19	0.360



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 operating key FWSS wrench size WS 17 mm is required (Order No. 613246).



Short text	Order No.	Weight [kg]
Ratchet 1/2" with socket wrench SW17 mm	613615	0.460



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.	Weight [kg]
Ratchet 1/2"	613610	0.460
Socket key SW 19 mm	613605	0.190
Socket key SW 17 mm	613606	0.300



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.	Weight [kg]
FWDPA for FRIALEN DAA RED SNAP	613597	0.440

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.	Weight [kg]
FWDPA for FRIAL DAP, DAA TL, DAA Classic from d 90	613595	0.440

FWDPA SA

Pressure test adapter

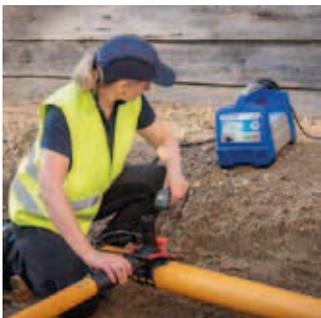


Pressure test adaptor for use with FRIALEN spigot saddles SA UNI, with connection nipple Ø 1/2".

Short text	Order No.	Weight [kg]
FWDPA SA for SA UNI	613596	0.440



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

For further information, please visit our Homepage:

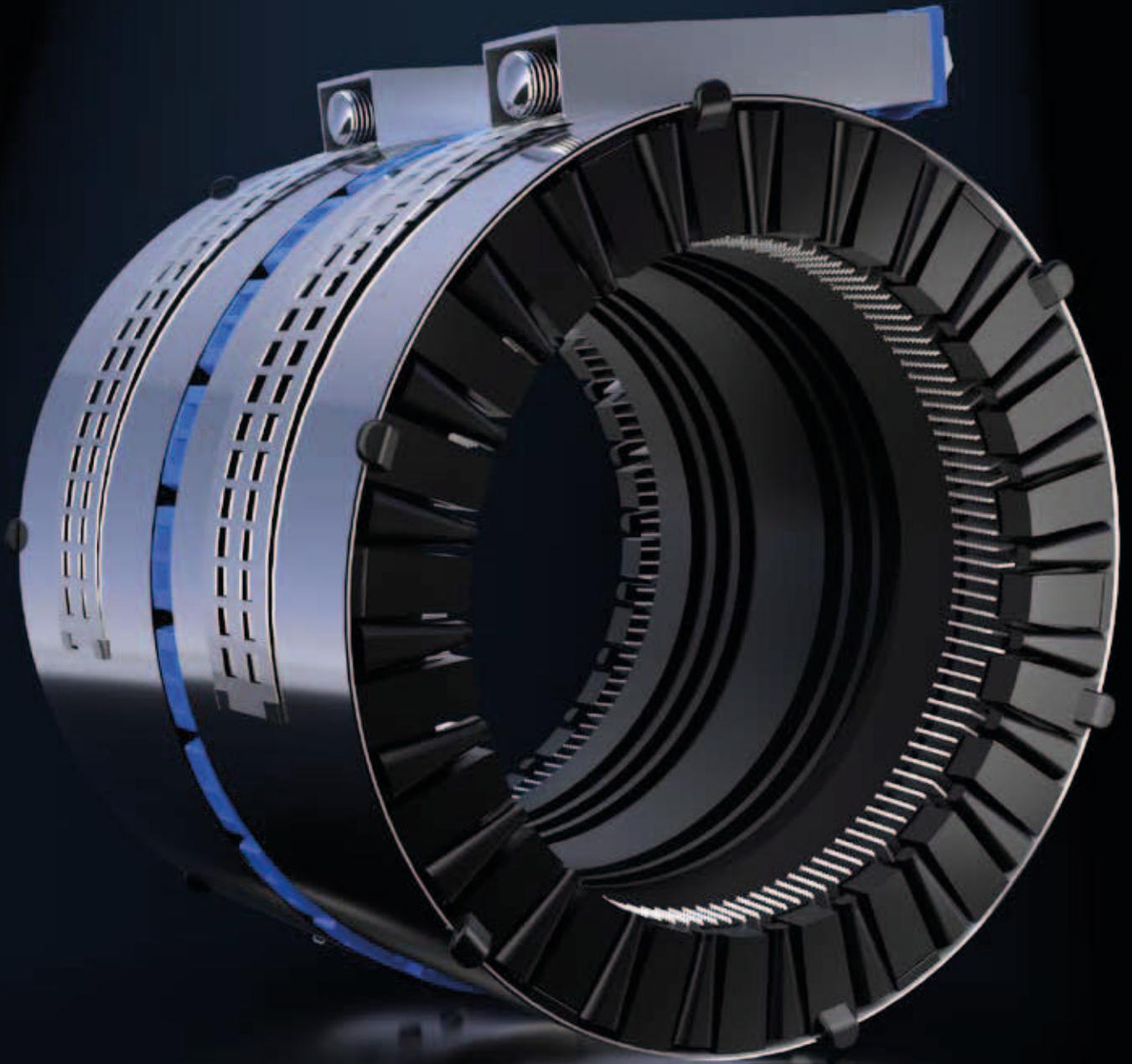
www.aliaxis.de/en/services/tools-service



Your contact

info-friatools@aliaxis.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.

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:

www.aliaxis.de/en/products/friacore



Your contact

Dennis Kamuf

dennis.kamuf@aliaxis.com



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 - Gastechnisches 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!

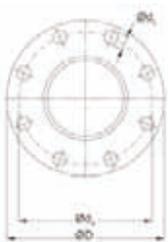
Please read our installation instructions for information on special conditions of use, restrictions on installation and the processing of FRIACORE products in general. Our customer service representatives will also be happy to answer any questions you may have.
We offer manufacturer-specific training 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 DIN 19800				
		PN 16	PN 25	PN 40		Threaded Pipe	Boiler Pipe	Plug Con- nector +4 mm PE			PN 10			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



End load resistant pipe connector to join water pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, HDPE)

- Quick and efficient installation
- Leaves no gap for water pooling
- One gripping system for all pipe materials
- Self-aligning design and installation
- One fitting per nominal width
- High-strength AISI 316 stainless steel housing and gripping band
- Flexible polypropylene rings
- WRAS Approved EPDM Gasket
- Pressure rating PN16
- Temperature range -20°C - +40°C
- Can accommodate pipe deflection up to 6°
- Pipe liner not required for HDPE pipes with a wall thickness \geq SDR17.6 and for PVC pipes with a wall thickness \geq SDR21.
- Requires additional restraint when used on asbestos cement pipes.

Note:

When used on asbestos cement pipes, restrained function cannot be ensured

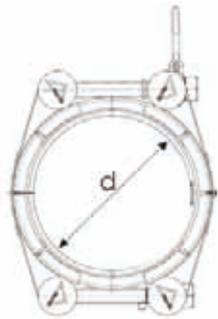


DN	d	Order No.	L	Weight [kg]	BX	PU
40	40-64	872101	200	3.400	1	240
50	46-72	872102	200	4.000	1	240
65	63-90	872103	200	4.400	1	144
80	78-105	872105	200	4.800	1	144
100	104-132	872107	240	6.800	1	75
125	130-161	872109	240	7.300	1	75
150	158-192	872111	240	9.400	1	60
200	218-256	872115	240	11.300	1	30



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. To connect PE pipes, we recommend restrained products such as FRIASAFE or FRIAGRIP

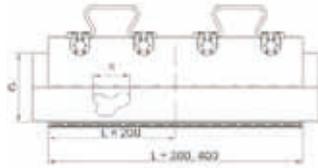
Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
 PFA/PN water maximum = 16 bar



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

FCE

FRIACLAMP stainless steel repair clamp, one-piece



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



DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
40	44-48	16	391-044-200	200	50	17	M10	1.750	10	320
40	44-48	16	391-044-300	300	150	17	M10	2.740	10	240
40	48-52	16	391-048-200	200	50	17	M10	1.410	10	320
40	48-52	16	391-048-300	300	150	17	M10	2.740	10	240
50	54-58	16	391-054-200	200	50	17	M10	1.410	10	320
50	54-58	16	391-054-300	300	150	17	M10	2.080	10	240
65	60-67	16	391-060-200	200	50	17	M10	1.410	10	320
65	60-67	16	391-060-300	300	150	17	M10	2.800	10	240
65	70-77	16	391-070-200	200	50	17	M10	2.800	9	288
65	70-77	16	391-070-300	300	150	17	M10	2.960	9	216
65	75-83	16	391-075-200	200	50	17	M10	1.500	9	288
65	75-83	16	391-075-300	300	150	17	M10	2.260	9	216
80	82-89	16	391-082-200	200	50	17	M10	1.540	9	288
80	82-89	16	391-082-300	300	150	17	M10	2.580	9	216
80	82-89	16	391-082-400	400	250	17	M10	4.000	9	96
80	87-95	16	391-087-200	200	50	17	M10	1.600	9	288
80	87-95	16	391-087-300	300	150	17	M10	2.440	9	216
80	87-95	16	391-087-400	400	250	17	M10	4.130	9	96
80	88-98	16	391-088-200	200	50	17	M10	2.020	8	256
80	88-98	16	391-088-300	300	150	17	M10	3.020	8	192
80	95-104	16	391-095-200	200	50	17	M10	1.780	6	192
80	95-104	16	391-095-300	300	150	17	M10	2.560	6	144
80	95-104	16	391-095-400	400	250	17	M10	1.780	6	96
100	108-118	16	391-108-200	200	50	17	M10	1.780	6	144
100	108-118	16	391-108-300	300	150	17	M10	2.730	6	144
100	108-118	16	391-108-400	400	250	17	M10	1.780	6	96
100	113-123	16	391-113-200	200	50	17	M10	2.280	5	160
100	113-123	16	391-113-300	300	150	17	M10	3.650	5	120
100	113-123	16	391-113-400	400	250	17	M10	3.650	5	80
100	118-128	16	391-118-200	200	50	17	M10	1.890	5	160
100	118-128	16	391-118-300	300	150	17	M10	2.860	5	120
100	118-128	16	391-118-400	400	250	17	M10	5.000	5	80
100	120-131	16	391-120-200	200	50	17	M10	2.390	5	160
100	120-131	16	391-120-300	300	150	17	M10	3.700	5	90
125	132-142	16	391-132-200	200	50	19	M12	2.320	4	128
125	132-142	16	391-132-300	300	150	19	M12	3.830	4	96
125	135-145	16	391-135-200	200	50	19	M12	2.320	4	128
125	135-145	16	391-135-300	300	150	19	M12	3.490	4	96
125	139-149	16	391-139-200	200	50	19	M12	2.370	4	128
125	139-149	16	391-139-300	300	150	19	M12	3.560	4	96
125	139-149	16	391-139-400	400	250	19	M12	3.560	1	64
125	145-155	16	391-145-200	200	50	19	M12	2.570	4	128
125	145-155	16	391-145-300	300	150	19	M12	3.660	4	96
150	159-170	16	391-159-200	200	50	19	M12	2.530	3	96
150	159-170	16	391-159-300	300	150	19	M12	3.730	3	72
150	159-170	16	391-159-400	400	250	19	M12	2.530	3	48
150	167-178	16	391-167-200	200	50	19	M12	2.580	3	96
150	167-178	16	391-167-300	300	150	19	M12	3.920	3	72
150	167-178	16	391-167-400	400	250	19	M12	5.170	3	48



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



DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
150	176-187	16	391-176-200	200	50	19	M12	2.810	3	96
150	176-187	16	391-176-300	300	150	19	M12	3.150	3	72
150	176-187	16	391-176-400	400	250	19	M12	6.100	3	48
175	193-203	10	391-193-200	200	50	19	M12	4.520	1	36
175	193-203	10	391-193-300	300	150	19	M12	4.520	1	36
200	215-225	10	391-215-200	200	50	19	M12	3.150	1	32
200	215-225	10	391-215-300	300	150	19	M12	4.760	1	24
200	215-225	10	391-215-400	400	250	19	M12	3.150	1	16
200	228-239	10	391-228-300	300	150	19	M12	6.380	1	24
225	240-250	10	391-240-300	300	150	19	M12	5.400	1	24
250	261-271	10	391-261-300	300	150	19	M12	5.650	1	24
250	269-280	10	391-269-300	300	150	19	M12	5.750	1	24
250	280-291	10	391-280-300	300	150	19	M12	5.890	1	24
300	315-325	10	391-315-300	300	150	19	M12	6.320	1	24
300	320-330	10	391-320-300	300	150	19	M12	6.380	1	24

Gasket NBR, DIN-EN 682
MOP gas maximum = 5 bar

Other water qualities maximum = 16 bar

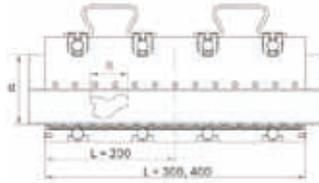


DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
40	44-48	5	381-044-200	200	50	17	M10	1.750	10	320
40	48-52	5	381-048-200	200	50	17	M10	1.330	10	320
40	48-52	5	381-048-300	300	150	17	M10	2.740	10	240
50	54-58	5	381-054-200	200	50	17	M10	1.380	10	320
50	54-58	5	381-054-300	300	150	17	M10	2.080	10	240
50	60-67	5	381-060-200	200	50	17	M10	1.410	10	320
50	60-67	5	381-060-300	300	150	17	M10	2.800	10	240
65	70-77	5	381-070-200	200	50	17	M10	1.470	9	288
65	75-83	5	381-075-200	200	50	17	M10	1.500	9	288
65	75-83	5	381-075-300	300	150	17	M10	2.260	9	216
80	82-89	5	381-082-200	200	50	17	M10	1.540	9	288
80	82-89	5	381-082-300	300	150	17	M10	2.320	9	216
80	87-95	5	381-087-200	200	50	17	M10	1.600	9	288
80	87-95	5	381-087-300	300	150	17	M10	2.440	9	216
80	88-98	5	381-088-200	200	50	17	M10	2.020	8	256
100	95-104	5	381-095-200	200	50	17	M10	1.710	6	192
100	95-104	5	381-095-300	300	150	17	M10	2.560	6	144
100	108-118	5	381-108-200	200	50	17	M10	1.780	6	144
100	108-118	5	381-108-300	300	150	17	M10	2.730	6	144
100	108-118	5	381-108-400	400	250	17	M10	3.600	6	96
100	113-123	5	381-113-200	200	50	17	M10	2.280	5	160
100	113-123	5	381-113-300	300	150	17	M10	2.740	5	120
100	113-123	5	381-113-400	400	250	17	M10	3.650	5	80
100	120-131	5	381-120-200	200	250	17	M10	2.390	5	160
125	132-142	5	381-132-200	200	50	19	M12	2.320	4	128
125	132-142	5	381-132-300	300	150	19	M12	3.830	4	96
125	135-145	5	381-135-300	300	150	19	M12	3.490	4	96
125	139-149	5	381-139-300	300	150	19	M12	3.560	4	96
150	159-170	5	381-159-200	200	50	19	M12	2.530	3	96
150	159-170	5	381-159-300	300	150	19	M12	3.730	3	72
150	159-170	5	381-159-400	400	250	19	M12	4.800	3	48
150	167-178	5	381-167-200	200	50	19	M12	2.580	3	96
150	167-178	5	381-167-300	300	150	19	M12	3.920	3	72
150	167-178	5	381-167-400	400	250	19	M12	5.170	3	48
200	215-225	5	381-215-200	200	50	19	M12	3.150	1	32
200	215-225	5	381-215-300	300	150	19	M12	4.760	1	24
200	215-225	5	381-215-400	400	250	19	M12	6.500	1	16
250	269-280	5	381-269-300	300	150	19	M12	5.750	1	24
300	320-330	5	381-320-300	300	150	19	M12	6.380	1	24



FCZ

FRIACLAMP stainless steel repair clamp, two-piece



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



DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
80	88-110	16	392-088-200	200	50	17	M10	2.620	6	192
80	88-110	16	392-088-300	300	150	17	M10	5.560	6	144
80	88-110	16	392-088-400	400	250	17	M10	7.490	6	96
100	100-120	16	392-100-200	200	50	17	M10	2.710	4	192
100	100-120	16	392-100-300	300	150	17	M10	5.740	4	144
100	100-120	16	392-100-400	400	250	17	M10	7.730	4	96
100	108-128	16	392-108-200	200	50	17	M10	2.740	4	128
100	108-128	16	392-108-300	300	150	17	M10	1.780	4	96
100	108-128	16	392-108-400	400	250	17	M10	5.460	4	64
100	114-134	16	392-114-200	200	50	17	M10	3.830	4	128
100	114-134	16	392-114-300	300	150	17	M10	4.270	4	96
100	114-134	16	392-114-400	400	250	17	M10	8.040	4	64
100	120-140	16	392-120-200	200	50	17	M10	2.970	4	128
100	120-140	16	392-120-300	300	150	17	M10	6.040	4	96
100	120-140	16	392-120-400	400	250	17	M10	8.120	4	64
125	130-150	16	392-130-200	200	50	19	M12	3.510	3	64
125	130-150	16	392-130-300	300	150	19	M12	5.350	3	48
125	130-150	16	392-130-400	400	250	19	M12	1.780	3	16
125	140-160	16	392-140-200	200	50	19	M12	3.610	3	64
125	140-160	16	392-140-300	300	150	19	M12	6.260	3	48
125	140-160	16	392-140-400	400	250	19	M12	8.410	3	16
150	159-180	16	392-159-200	200	50	19	M12	3.740	2	64
150	159-180	16	392-159-300	300	150	19	M12	6.520	2	48
150	159-180	16	392-159-400	400	250	19	M12	8.760	2	16
150	168-189	16	392-168-200	200	50	19	M12	4.260	2	64
150	168-189	16	392-168-300	300	150	19	M12	6.620	2	48
150	168-189	16	392-168-400	400	250	19	M12	8.890	2	16
175	190-210	16	392-190-200	200	50	19	M12	5.900	2	64
175	190-210	16	392-190-300	300	150	19	M12	6.860	2	48
175	190-210	16	392-190-400	400	250	19	M12	9.210	2	16
200	210-230	10	392-210-200	200	50	19	M12	6.600	1	32
200	210-230	10	392-210-300	300	150	19	M12	6.810	1	24
200	210-230	10	392-210-400	400	250	19	M12	9.930	1	16
200	218-238	10	392-218-200	200	50	19	M12	4.590	1	32
200	218-238	10	392-218-300	300	150	19	M12	6.970	1	24
200	218-238	10	392-218-400	400	250	19	M12	10.060	1	16
225	240-260	10	392-240-200	200	50	19	M12	7.000	1	32
225	240-260	10	392-240-300	300	150	19	M12	7.170	1	24
225	240-260	10	392-240-400	400	250	19	M12	10.420	1	16
250	269-289	10	392-269-200	200	50	19	M12	7.200	1	32
250	269-289	10	392-269-300	300	150	19	M12	7.570	1	24
250	269-289	10	392-269-400	400	250	19	M12	10.890	1	16
250	282-302	10	392-282-200	200	50	19	M12	5.440	1	32
250	282-302	10	392-282-300	300	150	19	M12	8.280	1	24
250	282-302	10	392-282-400	400	250	19	M12	11.110	1	16
300	315-335	10	392-315-200	200	50	19	M12	5.770	1	32
300	315-335	10	392-315-300	300	150	19	M12	11.650	1	24
300	315-335	10	392-315-400	400	250	19	M12	11.650	1	16



FRIACLAMP

FCZ

FRIACLAMP stainless steel repair clamp, two-piece

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270

PFA/PN water, maximum = 16 bar



DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
300	322-344	10	392-322-300	300	150	19	M12	8.770	1	24
300	322-344	10	392-322-400	400	250	19	M12	12.000	1	16
300	337-358	6	392-337-300	300	150	19	M12	11.650	1	24
300	337-358	6	392-337-400	400	250	19	M12	11.760	1	36
350	347-367	6	392-347-300	300	150	19	M12	6.090	1	36
350	347-367	6	392-347-400	400	250	19	M12	6.090	1	16
350	365-385	5	392-365-400	400	250	19	M12	12.460	1	32
400	410-430	5	392-410-400	400	250	19	M12	13.360	1	24
400	420-440	5	392-420-400	400	250	19	M12	11.650	1	16

Gasket NBR, DIN-EN 682

MOP gas according to table, maximum = 5 bar

Other water qualities maximum = 16 bar



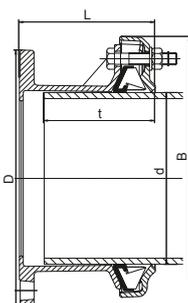
DN	d	PN	Order No.	L	R	WS [mm]	Screws	Weight [kg]	BX	PU
80	88-110	5	382-088-200	200	50	17	M10	2.620	6	192
80	88-110	5	382-088-300	300	150	17	M10	4.000	6	144
80	88-110	5	382-088-400	400	250	17	M10	7.490	6	96
100	100-120	5	382-100-300	300	150	17	M10	5.740	4	144
100	108-128	5	382-108-200	200	50	17	M10	2.740	4	128
100	108-128	5	382-108-300	300	150	17	M10	4.170	4	96
100	108-128	5	382-108-400	400	250	17	M10	5.460	4	64
100	114-134	5	382-114-300	300	150	17	M10	4.270	4	96
125	120-140	5	382-120-200	200	50	17	M10	2.970	4	128
125	130-150	5	382-130-200	200	50	19	M12	3.510	3	64
125	130-150	5	382-130-300	300	150	19	M12	5.350	3	48
125	140-160	5	382-140-200	200	50	19	M12	3.610	3	64
125	140-160	5	382-140-300	300	150	19	M12	6.260	3	48
150	159-180	5	382-159-200	200	50	19	M12	3.740	2	64
150	159-180	5	382-159-300	300	150	19	M12	6.520	2	48
150	159-180	5	382-159-400	400	250	19	M12	8.760	2	16
150	168-189	5	382-168-300	300	150	19	M12	6.620	2	48
175	190-210	5	382-190-200	200	50	19	M12	5.900	2	64
200	210-230	5	382-210-200	200	50	19	M12	6.600	1	32
200	210-230	5	382-210-300	300	150	19	M12	6.810	1	24
200	218-238	5	382-218-300	300	150	19	M12	6.970	1	24
200	218-238	5	382-218-400	400	250	19	M12	10.060	1	16
250	269-289	5	382-269-300	300	150	19	M12	7.570	1	24
250	269-289	5	382-269-400	400	250	19	M12	10.890	1	16
300	315-335	5	382-315-300	300	150	19	M12	8.080	1	24

FRIACORE



FGFA

FRIAGRIP flange adaptor



Restrained flange adapter for connecting pipes made of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE-HD/PEX) in civil engineering.

- Housing and bonnet-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 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 asbestos cement pipes, restrained function 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	Flange DN	Flange PN	PN	Order No.	B	D	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	40	10/16	16	672000	168	150	148	65	110	3 x 670601	4.200	4	96
40	43,5-63,5	50	10/16	16	672001	168	165	144	65	110	3 x 670601	4.200	4	96
50	48,0-71,0	50	10/16	16	672002	178	165	153	65	110	3 x 670603	5.200	1	96
65	63,0-83,7	65	10/16	16	672003	189	185	144	65	110	3 x 670601	5.200	4	96
80	85,7-107,0	80	10/16	16	672005	212	200	144	65	110	3 x 670601	6.200	2	60
100	107,2-133,2	100	10/16	16	672007	280	220	192	90	125	3 x 670707	10.000	2	36
125	132,2-160,2	125	10/16	16	672009	305	252	173	90	135	3 x 670707	11.600	2	24
150	158,2-192,2	150	10/16	16	672011	339	285	212	90	125	4 x 670707	14.750	1	18
175	192,2-226,9	200	10/16	16	672013	403	340	240	125	165	5 x 670707	25.000	1	18
200	218,1-256,0	200	10/16	16	672015	432	340	240	125	165	5 x 670707	22.600	1	12
250	266,2-310,2	250	10/16	16	672017	476	400	303	125	165	6 x 670609	38.000	1	4
300	315,0-356,0	300	10/16	16	672019	522	470	304	125	200	8 x 670609	42.500	1	4
350	352,2-396,0	350	10/16	10	672021	577	520	313	125	200	9 x 670717	50.000	1	
400	398,2-442,0	400	10/16	10	672023	623	580	313	125	200	10 x 670717	60.000	1	
400+	448,0-492,0	400	10/16	10	672025	713	580	413	125	200	12 x 670619	135.000	1	
500	498,0-552,0	500	10/16	10	672027	803	715	398	140	215	9 x 670719	109.000	1	
500+	558,0-608,0	500	10/16	10	672029	860	715	448	140	215	10 x 670719	125.000	1	
600	604,0-648,0	600	10/16	10	672031	900	840	410	195	255	12 x 670719	101.000	1	
600+	676,0-726,0	600	10/16	10	672033	975	840	470	195	255	14 x 670719	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

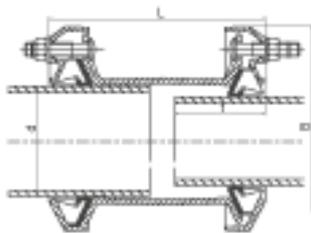


DN	d	Flange DN	Flange PN	PN	Order No.	B	D	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	40	10/16	16	670000	168	150	148	65	110	3 x 670601	4.200	4	96
40	43,5-63,5	50	10/16	16	670001	168	165	144	65	110	3 x 670601	4.200	4	96
50	48,0-71,0	50	10/16	16	670002	178	165	153	65	110	3 x 670603	4.820	4	96
65	63,0-83,7	65	10/16	16	670003	189	185	144	65	110	3 x 670601	5.840	4	96
80	85,7-107,0	80	10/16	16	670005	212	200	144	65	110	3 x 670601	6.200	2	60
100	107,2-133,2	100	10/16	16	670007	280	220	192	90	125	3 x 670707	10.000	2	36
125	132,2-160,2	125	10/16	16	670009	305	252	173	90	135	3 x 670707	11.600	2	24
150	158,2-192,2	150	10/16	16	670011	339	285	212	90	125	4 x 670707	16.050	1	18
175	192,2-226,9	200	10/16	16	670013	403	340	240	125	165	5 x 670707	16.600	1	18
200	218,1-256,0	200	10/16	16	670015	432	340	240	125	165	5 x 670707	22.600	1	12
250	266,2-310,2	250	10/16	16	670017	476	400	303	125	165	6 x 670609	33.800	1	4
300	315,0-356,0	300	10/16	16	670019	522	470	304	125	200	8 x 670609	42.500	1	4
350	352,2-396,0	350	10/16	10	670021	577	520	313	125	200	9 x 670717	50.000	1	1
400	398,2-442,0	400	10/16	10	670023	623	580	313	125	200	10 x 670717	60.000	1	1



FGK

FRIAGRIP coupling



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

- Body and bonnet are made of ductile 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:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required. When used on asbestos cement pipes, restrained function 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	PN	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	16	672101	168	222	65	95	3 x 670601 / 3 x 670601	5.760	5	90
50	48,0-71,0	16	672102	178	256	65	110	3 x 670603 / 3 x 670603	4.700	1	72
65	63,0-83,7	16	672103	189	222	65	95	3 x 670601 / 3 x 670601	5.100	4	72
80	85,7-107,0	16	672105	212	248	65	110	3 x 670601 / 3 x 670601	7.400	1	30
100	107,2-133,2	16	672107	280	296	90	125	3 x 670707 / 3 x 670707	12.600	1	24
125	132,2-160,2	16	672109	305	296	90	125	3 x 670707 / 3 x 670707	14.100	1	12
150	158,2-192,2	16	672111	339	340	90	135	4 x 670707 / 4 x 670707	17.600	1	12
175	192,2-226,9	16	672113	403	347	125	165	5 x 670707 / 5 x 670707	33.220	1	12
200	218,1-256,0	16	672115	432	347	125	165	5 x 670707 / 5 x 670707	34.900	1	8
250	266,2-310,2	16	672117	476	484	125	165	6 x 670717 / 6 x 670717	51.800	1	2
300	315,0-356,0	16	672119	522	484	125	200	8 x 670717 / 8 x 670717	58.900	1	2
350	352,2-396,0	10	672121	577	485	125	200	9 x 670717 / 9 x 670717	60.000	1	1
400	398,2-442,0	10	672123	623	485	125	200	10 x 670717 / 10 x 670717	70.000	1	1
400+	448,0-492,0	10	672125	713	545	125	200	12 x 670619 / 12 x 670619	135.000	1	1
500	498,0-552,0	10	672127	803	565	140	215	9 x 670719 / 9 x 670719	142.000	1	1
500+	558,0-608,0	10	672129	860	565	140	215	10 x 670719 / 10 x 670719	162.000	1	1
600	604,0-648,0	10	672131	900	605	195	255	12 x 670719 / 12 x 670719	181.000	1	1
600+	676,0-726,0	10	672133	975	605	195	255	14 x 670719 / 14 x 670719	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

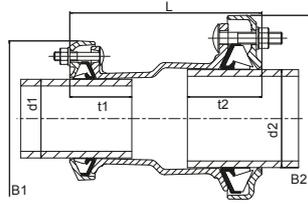


DN	d	PN	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	5	670101	168	222	65	95	3 x 670601 / 3 x 670601	5.760	5	90
50	48,0-71,0	5	670102	178	256	65	110	3 x 670603 / 3 x 670603	4.700	1	72
65	63,0-83,7	5	670103	189	222	65	95	3 x 670601 / 3 x 670601	6.860	4	72
80	85,7-107,0	5	670105	212	248	65	110	3 x 670601 / 3 x 670601	7.400	1	30
100	107,2-133,2	5	670107	280	296	90	125	3 x 670707 / 3 x 670707	12.600	1	24
125	132,2-160,2	5	670109	305	296	90	125	3 x 670707 / 3 x 670707	14.100	1	12
150	158,2-192,2	5	670111	339	340	90	135	4 x 670707 / 4 x 670707	17.600	1	12
175	192,2-226,9	5	670113	403	347	125	165	5 x 670707 / 5 x 670707	21.800	1	12
200	218,1-256,0	5	670115	432	347	125	165	5 x 670707 / 5 x 670707	37.500	1	8
250	266,2-310,2	5	670117	476	484	125	165	6 x 670717 / 6 x 670717	51.800	1	2
300	315,0-356,0	5	670119	522	484	125	200	8 x 670717 / 8 x 670717	58.900	1	2
350	352,2-396,0	5	670121	577	485	125	200	9 x 670717 / 9 x 670717	60.000	1	1
400	398,2-442,0	5	670123	623	485	125	200	10 x 670717 / 10 x 670717	70.000	1	1



FGR

FRIAGRIP reducer



- Restrained Reducer-coupling for connecting pipes of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE-HD/PEX).
- Body and bonnet are made of ductile 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:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required. When used on asbestos cement pipes, restrained function 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	d1	d2	PN	Order No.	B1	B2	L	t _{1 min}	t _{1 max}	t _{2 min}	t _{2 max}	Screws	Weight [kg]	BX	PU
32/40	36,0-46,0	43,5-63,5	16	672401	153	168	226	65	95	65	95	3 x 670603 / 3 x 670603	4.640	5	90
80/100	85,7-107,0	107,2-133,2	16	672405	212	280	282	65	95	65	95	3 x 670603 / 3 x 670707	10.300	1	24
100/125	107,2-133,2	132,2-160,2	16	672407	280	305	306	90	125	90	115	3 x 670707 / 3 x 670707	14.200	1	12
100/150	107,2-133,2	158,2-192,2	16	672408	280	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17.000	1	12
125/150	132,2-160,2	158,2-192,2	16	672409	305	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17.500	1	12
150/175	158,2-192,2	192,2-226,9	16	672411	339	403	347	90	125	90	135	4 x 670707 / 5 x 670707	24.800	1	12
175/200	192,2-226,9	218,1-256,0	16	672413	403	432	347	125	155	125	165	5 x 670707 / 5 x 670707	34.200	1	8
200/250	218,1-256,0	266,2-310,2	16	672415	432	476	436	125	165	125	165	5 x 670707 / 6 x 670717	42.600	1	8
250/300	266,2-310,2	315,0-356,0	16	672417	476	524	524	125	165	125	200	6 x 670717 / 8 x 670717	42.600	1	4
400/400+	398,0-442,0	448,0-492,0	16	672423	623	713	575	125	200	125	200	10 x 670717 / 12 x 670619	122.000	1	1
500/500+	498,0-552,0	558,0-608,0	16	672427	803	860	595	140	215	140	215	9 x 670619 / 10 x 670619	156.000	1	1
600/600+	604,0-648,0	676,0-726,0	16	672431	900	975	635	195	255	195	255	12 x 670619 / 14 x 670619	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

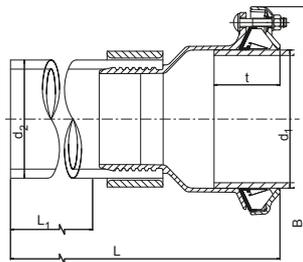


DN	d1	d2	PN	Order No.	B1	B2	L	t _{1 min}	t _{1 max}	t _{2 min}	t _{2 max}	Screws	Weight [kg]	BX	PU
32/40	36,0-46,0	43,5-63,5	5	670401	153	168	226	65	95	65	95	3 x 670603 / 3 x 670603	4.640	5	90
80/100	85,7-107,0	107,2-133,2	5	670405	212	280	282	65	95	65	95	3 x 670603 / 3 x 670707	10.300	1	24
100/125	107,2-133,2	132,2-160,2	5	670407	280	305	306	90	125	90	115	3 x 670707 / 3 x 670707	14.200	1	12
100/150	107,2-133,2	158,2-192,2	5	670408	280	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17.000	1	12
125/150	132,2-160,2	158,2-192,2	5	670409	305	339	319	90	115	90	135	3 x 670707 / 4 x 670707	17.500	1	12
150/175	158,2-192,2	192,2-226,9	5	670411	339	403	347	90	125	90	135	4 x 670707 / 5 x 670707	24.800	1	12
175/200	192,2-226,9	218,1-256,0	5	670413	403	432	347	125	155	125	165	5 x 670707 / 5 x 670707	37.200	1	8
200/250	218,1-256,0	266,2-310,2	5	670415	432	476	436	125	165	125	165	5 x 670707 / 6 x 670717	42.600	1	8
250/300	266,2-310,2	315,0-356,0	5	670417	476	524	524	125	165	125	200	6 x 670717 / 8 x 670717	42.600	1	4



FGPA

FRIAGRIP PE adaptor



Restrained transition-coupling made of PE100 SDR11 for connecting pipes of different materials (steel, cast iron, ductile iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and bonnet are made of ductile 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:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required. When used on asbestos cement pipes, restrained function 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	d1	d2	PN	Order No.	B	L	L1	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
80	85,7-107,0	90	16	673005	212	662	496	65	95	3 x 670601	6.800	1	24
100	107,2-133,2	110	16	673007	280	685	496	90	115	3 x 670707	12.000	1	12
100	107,2-133,2	125	16	673008	280	678	496	90	115	3 x 670707	12.700	1	12
125	132,2-160,2	110	16	673009	305	704	496	90	115	3 x 670707	13.500	1	12
125	132,2-160,2	125	16	673010	305	698	496	90	115	3 x 670707	14.200	1	12
150	158,2-192,2	160	16	673011	339	707	496	90	125	4 x 670707	16.000	1	8
150	158,2-192,2	180	16	673012	339	704	496	90	125	4 x 670707	23.800	1	6
200	218,1-256,0	225	16	673015	432	728	496	125	165	5 x 670707	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



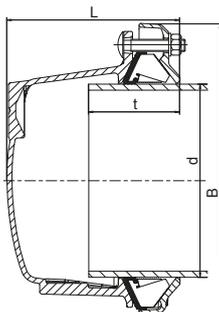
DN	d1	d2	PN	Order No.	B	L	L1	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
80	85,7-107,0	90	5	671005	212	662	496	65	95	3 x 670601	6.800	1	24
100	107,2-133,2	110	5	671007	280	685	496	90	115	3 x 670707	12.000	1	12
100	107,2-133,2	125	5	671008	280	678	496	90	115	3 x 670707	12.700	1	12
125	132,2-160,2	110	5	671009	305	704	496	90	115	3 x 670707	13.500	1	12
125	132,2-160,2	125	5	671010	305	698	496	90	115	3 x 670707	14.200	1	12
150	158,2-192,2	160	5	671011	339	707	496	90	125	4 x 670707	20.600	1	8
150	158,2-192,2	180	5	671012	339	704	496	90	125	4 x 670707	23.800	1	6
200	218,1-256,0	225	5	671015	432	728	496	125	165	5 x 670707	37.000	1	4

FRIACORE



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 iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and bonnet are made of ductile 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:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required. When used on asbestos cement pipes, restrained function 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	PN	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	16	672201	168	140	65	95	3 x 670603	2.800	4	96
65	63,0-83,7	16	672203	189	140	65	95	3 x 670603	3.300	4	96
80	85,7-107,0	16	672205	212	156	65	110	3 x 670603	4.200	4	96
100	107,2-133,2	16	672207	280	184	90	125	3 x 670707	8.050	2	48
125	132,2-160,2	16	672209	305	202	90	135	3 x 670707	9.600	1	18
150	158,2-192,2	16	672211	339	206	90	135	4 x 670707	11.800	1	18
175	192,2-226,9	16	672213	403	222	125	165	5 x 670707	13.800	1	8
200	218,1-256,0	16	672215	432	224	125	165	5 x 670707	18.800	1	4
250	266,2-310,2	16	672217	476	299	125	165	6 x 670717	32.200	1	4
300	315,0-356,0	16	672219	522	300	125	200	8 x 670717	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

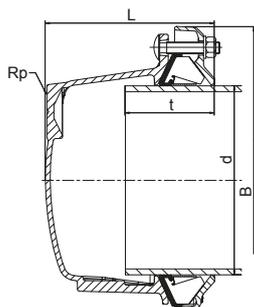


DN	d	PN	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	5	670201	168	140	65	95	3 x 670603	2.800	4	96
65	63,0-83,7	5	670203	189	140	65	95	3 x 670603	3.300	4	96
80	85,7-107,0	5	670205	212	156	65	110	3 x 670603	4.200	4	96
100	107,2-133,2	5	670207	280	184	90	125	3 x 670707	8.050	2	48
125	132,2-160,2	5	670209	305	202	90	135	3 x 670707	9.600	1	18
150	158,2-192,2	5	670211	339	206	90	135	4 x 670707	11.800	1	18
175	192,2-226,9	5	670213	403	222	125	165	5 x 670707	13.800	1	8
200	218,1-256,0	5	670215	432	224	125	165	5 x 670707	18.800	1	4
250	266,2-310,2	5	670217	476	299	125	165	6 x 670717	32.200	1	4
300	315,0-356,0	5	670219	522	300	125	200	8 x 670717	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 iron, asbestos cement, PVC, PE-HD/PEX) to PE

- Body and bonnet are made of ductile 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:

When used on PE-HD/PEX pipes, our inner support liner SHVA is required.
When used on asbestos cement pipes, restrained function 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	PN	Rp	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	16	2"	672301	168	140	65	95	3 x 670603	2.800	4	96
40	43,5-63,5	16	1 1/4"	672302	168	140	65	95	3 x 670603	2.800	4	96
65	63,0-83,7	16	2"	672303	189	140	65	95	3 x 670603	3.300	4	96
65	63,0-83,7	16	1 1/2"	672304	189	140	65	95	3 x 670603	3.300	4	96
80	85,7-107,0	16	2"	672305	212	156	65	110	3 x 670603	4.200	4	96
100	107,2-133,2	16	2"	672307	280	184	90	125	3 x 670707	7.600	2	48
125	132,2-160,2	16	2"	672309	305	202	90	135	3 x 670707	9.600	1	18
150	158,2-192,2	16	2"	672311	339	206	90	135	4 x 670707	11.800	1	18
175	192,2-226,9	16	2"	672313	403	222	125	165	5 x 670707	18.800	1	8
200	218,1-256,0	16	2"	672315	432	224	125	165	5 x 670707	18.800	1	4
250	266,2-310,2	16	2"	672317	476	299	125	165	6 x 670717	32.200	1	4
300	315,0-356,0	16	2"	672319	522	300	125	200	8 x 670717	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	PN	Rp	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	16	2"	670301	168	140	65	95	3 x 670603	2.800	4	96
40	43,5-63,5	16	1 1/4"	670302	168	140	65	95	3 x 670603	2.800	4	96
65	63,0-83,7	16	2"	670303	189	140	65	95	3 x 670603	3.300	4	96
80	85,7-107,0	16	2"	670305	212	156	65	110	3 x 670603	4.200	4	96
100	107,2-133,2	16	2"	670307	280	184	90	125	3 x 670707	7.600	2	48
125	132,2-160,2	16	2"	670309	305	202	90	135	3 x 670707	9.600	1	18
150	158,2-192,2	16	2"	670311	339	206	90	135	4 x 670707	12.750	1	18
175	192,2-226,9	16	2"	670313	403	222	125	165	5 x 670707	18.800	1	8
200	218,1-256,0	16	2"	670315	432	224	125	165	5 x 670707	18.800	1	4
250	266,2-310,2	16	2"	670317	476	299	125	165	6 x 670717	32.200	1	4
300	315,0-356,0	16	2"	670319	522	300	125	200	8 x 670717	38.600	1	4

FGEG

FRIAGRIP end-cap with internal thread

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	PN	Rp	Order No.	B	L	t _{min}	t _{max}	Screws	Weight [kg]	BX	PU
40	43,5-63,5	16	2"	672351	168	140	65	95	3 x 670603	3.000	1	96
40	43,5-63,5	16	1 1/4"	672352	168	140	65	95	3 x 670603	3.000	1	96
65	63,0-83,7	16	2"	672353	189	140	65	95	3 x 670603	4.000	1	96
65	63,0-83,7	16	1 1/2"	672354	189	140	65	95	3 x 670603	4.000	1	96
80	85,7-107,0	16	2"	672355	212	156	65	110	3 x 670603	4.000	1	96
100	107,2-133,2	16	2"	672357	280	184	90	125	3 x 670707	8.000	1	48
125	132,2-160,2	16	2"	672359	305	202	90	135	3 x 670707	10.000	1	18
150	158,2-192,2	16	2"	672361	339	206	90	135	4 x 670707	13.000	1	18
175	192,2-226,9	16	2"	672363	403	222	125	165	5 x 670707	19.000	1	8
200	218,1-256,0	16	2"	672365	432	224	125	165	5 x 670707	21.000	1	4
250	266,2-310,2	16	2"	672367	476	299	125	165	6 x 670717	32.000	1	4
300	315,0-356,0	16	2"	672369	522	300	125	200	8 x 670717	39.000	1	4



UltraGrip Amplified

UGFA

UltraGrip Amplified Flange Adaptor

NEW



Restrained flange adapter for connecting pipes made of different materials (steel, cast iron, ductile 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
- 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 asbestos cement pipes, restrained function 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

FRIACORE



UltraGrip Amplified

UGK

UltraGrip Amplified Coupling

NEW



Restrained coupling for connecting pipes made of different materials (steel, cast iron, ductile 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
- 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 asbestos cement pipes, restrained function 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

NEW



Restrained reducer-coupling for connecting pipes made of different materials (steel, cast iron, ductile 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
- 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 asbestos cement pipes, restrained function cannot be ensured

Gasket EPDM, DIN-EN 681-1 / KTW / UBA / DVGW-W270
PFA /PN Water: 16 bars



DN	d1	d2	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	WS [mm]	Screws	Weight [kg]	BX	PU
HRH/Hexagonal	670601	70	19	M12	0.800	1	500
CSX/Half-round head	670603	70	19	M12	0.200	1	500
HRH/Hexagonal	670607	90	24	M16	0.180	1	500
HRH/Hexagonal	670609	120	24	M16	0.220	1	500
HRH/Hexagonal	670619	140	24	M16	0.220	1	500
CSX/Half-round head	670707	93	24	M16	0.140	1	500
CSX/Half-round head	670717	120	24	M16	0.250	1	500
HRH/Hexagonal	670719	150	30	M20	0.220	1	500

LSN

Extra Long socket for FRIAGRIP Products

Extra long 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 Sub-Assembly



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 component 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	PN	Order No.	Weight [kg]	BX
32	36,0-46,0	16	672900	0.500	1
40	43,5-63,5	16	672901	0.500	24
50	48,0-71,0	16	672902	0.500	1
65	63,0-83,7	16	672903	0.500	1
80	85,7-107,0	16	672905	0.500	60
100	107,2-133,2	16	672907	1.100	1
125	132,2-160,2	16	672909	1.300	1
150	158,2-192,2	16	672911	1.500	1
175	192,2-226,9	16	672913	1.800	1
200	218,1-256,0	16	672915	2.050	1
250	266,2-310,2	16	672917	2.350	1
300	315,0-356,0	16	672919	2.700	1
350	352,2-396,0	10	672921	2.700	1
400	398,2-442,0	10	672923	3.000	1
400+	448,0-492,0	10	672925	3.500	1
500	498,0-552,0	10	672927	6.000	1
500+	558,0-608,0	10	672929	6.000	1
600	604,0-648,0	10	672931	9.000	1
600+	676,0-726,0	10	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	PN	Order No.	Weight [kg]	BX
32	36,0-46,0	5	670900	0.500	1
40	43,5-63,5	5	670901	0.500	1
50	48,0-71,0	5	670902	0.500	1
65	63,0-83,7	5	670903	0.500	1
80	85,7-107,0	5	670905	0.500	1
100	107,2-133,2	5	670907	1.100	1
125	132,2-160,2	5	670909	1.300	1
150	158,2-192,2	5	670911	1.500	1
175	192,2-226,9	5	670913	1.700	1
200	218,1-256,0	5	670915	2.050	1
250	266,2-310,2	5	670917	2.350	1
300	315,0-356,0	5	670919	2.700	1
350	352,2-396,0	5	670921	2.700	1
400	398,2-442,0	5	670923	3.000	1



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 < SDR 21 on request.

SHVA wall thickness ≤ d 180: 1 mm, ≥ d 200: 2 mm.

The support liner d 40 and d 50 are flanged bushes without cotter.

The support liner from d 450 consist of 2 half shells and 2 clamping wedges (L1 = wedge length).

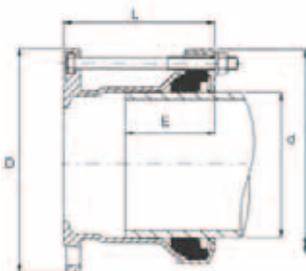


d	SDR	Order No.	L	L1	Weight [kg]	BX	PU
40	11	670501	110		0.200	20	500
50	11	670502	110		0.200	20	500
63	17	670503	130	220	0.150	40	500
63	11	670504	130	220	0.150	40	500
75	17	670505	130	220	0.200	6	500
75	11	670506	130	220	0.200	6	500
90	17	670507	130	220	0.300	40	500
90	11	670508	130	220	0.240	40	500
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
- Temperature-Range: -20°C - +30°C

Note:

When used on PEHD/PEX pipes, our SHVA support liner is required. Alternatively, we recommend restrained products such as FRIASAFE or 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.	B	D	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R9-043-05	151	167	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R9-063-06	171	185	120	80	90	4.950	4	96
80	85,7-107,0	80	10/16	UR-14R9-085-08	192	200	140	80	110	5.850	2	60
100	107,2-133,2	100	10/16	UR-14R9-107-10	231	234	170	85	110	8.900	2	48
125	132,2-160,2	125	10/16	UR-14R9-132-12	265	268	150	90	120	10.700	2	48
150	158,2-192,2	150	10/16	UR-14R9-158-15	303	317	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	369	374	230	100	150	20.950	1	18
250	266,2-300,2	250	10/16	UR-14R9-266-25	417	424	285	100	180	32.200	1	4
300	315,0-349,0	300	10/16	UR-14R9-315-30	466	472	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.	B	D	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R9X043-05	151	167	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R9X063-06	171	185	120	80	90	4.800	4	96
80	85,7-107,0	80	10/16	UR-14R9X085-08	192	200	140	80	110	5.830	2	60
100	107,2-133,2	100	10/16	UR-14R9X107-10	231	234	170	85	110	9.100	2	48
125	132,2-160,2	125	10/16	UR-14R9X132-12	265	268	150	90	120	10.500	2	48
150	158,2-192,2	150	10/16	UR-14R9X158-15	303	317	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	369	374	230	100	150	22.400	1	18
250	266,2-300,2	250	10/16	UR-14R9X266-25	417	424	285	100	180	32.800	1	4
300	315,0-349,0	300	10/16	UR-14R9X315-30	466	472	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.	B	D	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R2-043-05	151	167	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R2-063-06	171	185	120	80	90	4.950	4	96
80	85,7-107,0	80	10/16	UR-14R2-085-08	192	200	140	80	110	5.850	2	60
100	107,2-133,2	100	10/16	UR-14R2-107-10	231	234	170	85	110	8.900	2	48
125	132,2-160,2	125	10/16	UR-14R2-132-12	265	268	150	90	120	10.700	2	48
150	158,2-192,2	150	10/16	UR-14R2-158-15	303	317	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	369	374	230	100	150	20.950	1	18
250	266,2-300,2	250	10/16	UR-14R2-266-25	417	424	285	100	180	32.200	1	4
300	315,0-349,0	300	10/16	UR-14R2-315-30	466	472	285	100	180	39.200	1	4

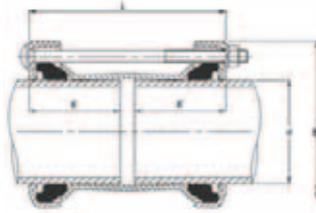
Nuts and bolts Stainless Steel, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar /
other water qualities = 16 bar



DN	d	Flange DN	Flange PN	Order No.	B	D	L	t _{min}	t _{max}	Weight [kg]	BX	PU
40/50	43,5-63,5	50	10/16	UR-14R2X043-05	151	167	115	80	90	4.100	4	96
65	63,0-83,7	65	10/16	UR-14R2X063-06	171	185	120	80	90	4.800	4	96
80	85,7-107,0	80	10/16	UR-14R2X085-08	192	200	140	80	110	5.830	2	60
100	107,2-133,2	100	10/16	UR-14R2X107-10	231	234	170	85	110	9.100	2	48
125	132,2-160,2	125	10/16	UR-14R2X132-12	265	268	150	90	120	10.500	2	48
150	158,2-192,2	150	10/16	UR-14R2X158-15	303	317	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	369	374	230	100	150	22.400	1	18
250	266,2-300,2	250	10/16	UR-14R2X266-25	417	424	285	100	180	32.800	1	4
300	315,0-349,0	300	10/16	UR-14R2X315-30	466	472	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/sheraplex-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 PEHD/PEX pipes, our SHVA support liner is required. o Alternatively, we recommend restrained products such as FRIASAFE or 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

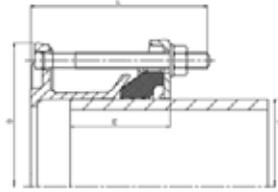
**Nuts and bolts Stainless Steel, Gasket NBR, DIN-EN 682 MOP Gas = 5 bar /
other water qualities = 16 bar**



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:

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

Nuts and bolts galvanized and theraplex 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



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

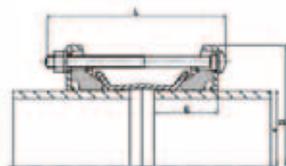
DN	d	Flange DN	Flange PN	Order No.	L	Weight [kg]	BX	PU
300	351,0-368,0	300	10	GB-14R9X351-30	345	32.800	1	4
300	351,0-368,0	300	16	GB-16R9X351-30	345	42.000	1	4
350	374,5-391,5	350	10	GB-14R9X374-35	180	38.100	1	2
350	374,5-391,5	350	16	GB-16R9X374-35	180	38.100	1	2
350	394,3-411,3	350	10	GB-14R9X394-35	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

FRIACORE



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/sheraplex-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:

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

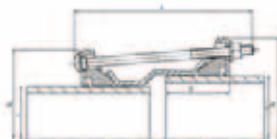
PFA /PN Water: up to DN 300 = 16 bar



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



WRKR Wide-Range Reducer



Reducer to connect 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:

When used on PEHD/PEX pipes, our SHVA support liner is required. o Alternatively, we recommend restrained products such as FRIASAFE or 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	d1	d2	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-99R9-527540	300	47.400	1
500	527,0-544,0	555,3-572,3	GB-99R9-527555	300	47.600	1
500	527,0-544,0	566,5-583,5	GB-99R9-527566	300	47.800	1
500	527,0-544,0	582,2-599,2	GB-99R9-527582	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	d1	d2	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



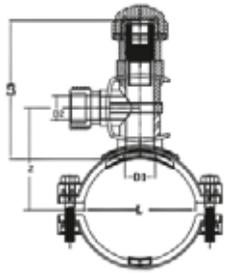
Mechanical PE/PVC Connectors

Mechanical tapping tees and saddles for water networks made of PE or PVC.

Tapping tees and saddles

HNMB

Hotneck Monobloc



Hotneck monobloc mechanical tapping tee for PE and PVC pipes in water application

- Main Pipe dimension: d 40 - d 125
- Outlet dimension: d 20 - d 25
- Pressure rating: PN10
- Suitable for PEHD and PVC pressure pipes
- Flat, WRAS-certified EPDM Gasket for increased sealing surface
- Integrated stainless steel cutter for ease of installation
- Anti-rotation system for extra safety

Order No.	D1	D2	L	L1	PN	Weight [kg]	BX
HNMB4020	20.5	20	40	94.4	10	0.320	10
HNMB4025	20.5	25	40	94.4	10	0.350	10
HNMB5020	20.5	20	50	94.4	10	0.350	10
HNMB5025	20.5	25	50	94.4	10	0.380	10
HNMB6320	20.5	20	63	98.5	10	0.460	30
HNMB6325	20.5	25	63	98	10	0.480	30
HNMB7520	20.5	20	75	98	10	0.510	30
HNMB7525	20.5	25	75	100	10	0.530	30
HNMB9020	20.5	20	90	100	10	0.560	25
HNMB9025	20.5	25	90	100	10	0.580	25
HNMB11020	20.5	20	110	100	10	0.590	600
HNMB11025	20.5	25	110	100	10	0.610	600
HNMB12520	20.5	20	125	100	10	0.610	450
HNMB12525	20.5	25	125	100	10	0.990	450

HNK

Hotneck mechanical tapping tee



Hotneck mechanical tapping tee for assembly with female threaded saddles

- Dimensions: 1" male thread BSP x d25 compression outlet
- Suitable for PEHD and PVC pressure pipes PN10 and PN16
- Integrated stainless steel cutter for ease of installation

Order No.	d1	d2	L	Weight [kg]	BX
HNK10025	1"	25	200	0.500	1

HNTK

Hotneck tapping key

Tapping Key for Hotneck



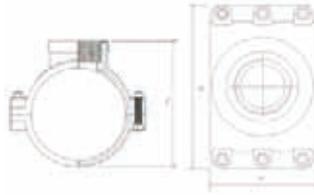
Order No.	Weight [kg]	BX
HNTK1	0.250	1



Tapping tees and saddles

MSAD

Philmac S-Saddle



- Material: Polypropylene PP-B
- Range: d25 - d315
- ISO by BSP
- NBR flat and profiled gasket with maximized sealing surface
- Up to 3 times larger sealing surface than traditional O-ring gaskets
- Long Reinforcement ring made of Stainless steel to secure threads shape
- Galvanized, zinc plated nuts and bolts
- Innovative Anti-Rotation System avoids rotation of pipes during installation
- Captive Bolts preventing screws from falling out
- Accommodates pipe ovalities
- Ability to be used as repair clamp for holes
- Applications: Potable water, irrigation

Palette size (l/w/h): 114x76x120

d	R	Order No.	A	B	C	PN	Weight [kg]	BX
32	1/2"	S160032120	55	50	85	16	0.070	150
32	3/4"	S160032340	55	50	85	16	0.070	150
40	1/2"	S160040120	63	50	85	16	0.090	100
40	3/4"	S160040340	63	50	85	16	0.090	100
50	1/2"	S160050120	74	50	90	16	0.150	80
50	3/4"	S160050340	75	50	90	16	0.150	80
50	1"	S160050100	77	55	90	16	0.160	80
63	1/2"	S160063120	90	55	90	16	0.210	50
63	3/4"	S160063340	93	55	90	16	0.220	50
63	1"	S160063100	95	75	150	16	0.220	50
63	1 1/4"	S160063114	95	75	150	16	0.230	50
63	1 1/2"	S160063112	101	75	150	16	0.240	40
75	3/4"	S160075340	102	75	150	16	0.380	40
75	1"	S160075100	108	75	150	16	0.390	40
90	1/2"	S160090120	122	75	115	16	0.400	30
90	3/4"	S160090340	124	75	115	16	0.410	30
90	1"	S160090100	126	95	135	16	0.420	30
90	1 1/4"	S160090114	127	95	135	16	0.420	30
90	1 1/2"	S160090112	130	95	135	16	0.430	25
90	2"	S160090200	130	95	135	16	0.450	25
110	1/2"	S160110120	130	95	135	16	0.640	20
110	3/4"	S160110340	145	95	135	16	0.650	20
110	1"	S160110100	148	95	135	16	0.660	20
110	1 1/4"	S160110114	149	105	115	16	0.670	20
110	1 1/2"	S160110112	150	105	115	16	0.680	15
110	2"	S160110200	151	105	115	16	0.710	15
125	3/4"	S160125340	170	105	115	16	0.720	18
125	1"	S160125100	170	105	115	16	0.720	18
160	3/4"	S160160340	204	120	115	16	1.070	10
160	1"	S160160100	210	120	175	16	1.070	10
160	1 1/2"	S160160112	213	120	225	16	1.100	10
160	2"	S160160200	213	120	225	16	1.110	10
200	1"	S160200100	282	120	225	10	1.640	4
200	1 1/2"	S160200112	273	120	225	10	1.650	4
200	2"	S160200200	277	120	260	10	1.670	4





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At Aliaxis Deutschland, we provide you with relevant content for gas and water supply, as well as sewage systems using polyethylene as a material.

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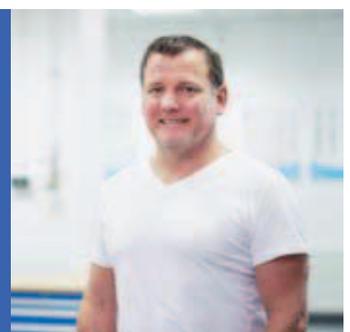
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Your contact

Mathias Baier

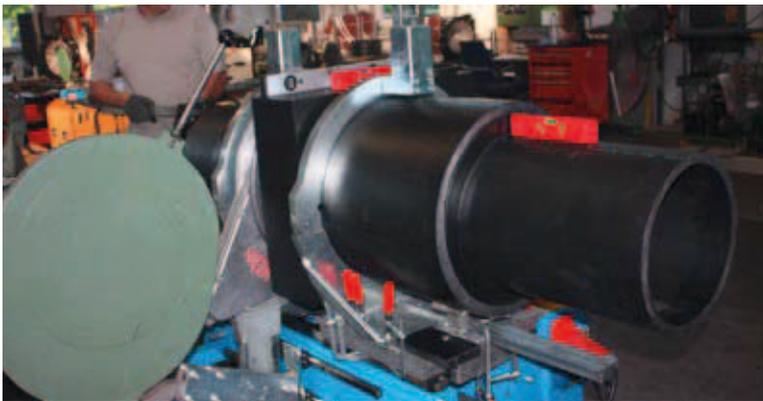
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