Product catalogue 2023

Infrastructure

Valid from 01.11.2022

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 an extremely secure gas supply network that is particularly economical to operate. You also benefit from comprehensive 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 couplings 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, and this without leakage loss and groundwater pollution. A sustainable solution through reliable fusion results and long service life.

Tool service by manufacturer
Since more than 30 years we are offering complete range of tools and equipment suitable for construction sites. Our service offering around these tools is tailored to your requirements.

Table of content

WorkFlow 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

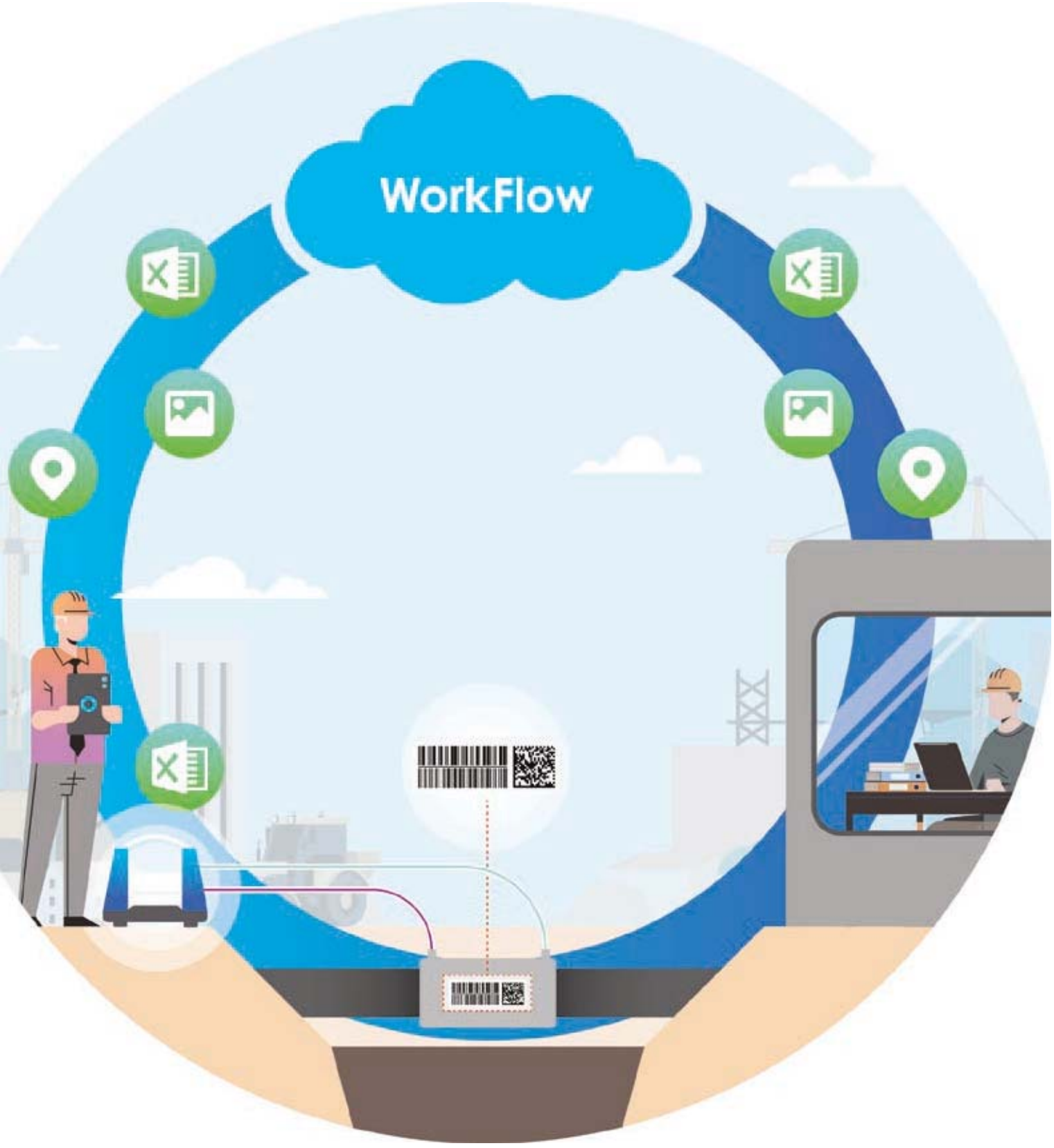
Scrape, clean, install the component, scan the barcode, fuse – so far the same. With WorkFlow Mobile support, important information is added to the fusion protocol during the fusion process, e.g. GPS data to record the component's location, or photos to document its proper installation.

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 protocolss 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.

FRIALEN safety fittings

UB SDR 11	Coupler without inner stop, SDR 11				
Status	**Version**	**Order No.**	**Available from/up to**	**Predecessor /Successor**	**Page**
New	d 250	617278	immediately	612675	20
Omitted	d 250	612675	immediately	617278	
New	d 280	617279	immediately	615073	
Omitted	d 280	615073	immediately	617279	

UB SDR 9	Coupler without inner stop, SDR 9				
Status	**Version**	**Order No.**	**Available from/up to**	**Predecessor /Successor**	**Page**
Omitted	d 400	616441	immediately	615075	22
Omitted	d 450	616447	immediately	615076	
Omitted	d 500	616445	immediately	615124	
Omitted	d 560	616446	immediately	616312	
Omitted	d 630	616439	immediately	616269	

REM SDR 17	Reducer, SDR 17 for Relining			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Discontinued part	d 110/DN100	615569	Q1 / 2023	24

WFGB	BAIO Elbow with base unit			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	d 110/DN 80	616150	immediately	

TGB	T-piece BAIO			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	d 110/DN 80	616147	immediately	
Omitted	d 125/DN 80	616148	immediately	
Omitted	d 160/DN 80	616149	immediately	

TA	T-piece with spigot			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 180/180	617175	Q1/2023	**29**
New	d 200/200	617179	Q2/2023	
New	d 225/225	617183	Q2/2023	

TA RED	T-piece with reduced spigot			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 180/125	617174	Q1/2023	30
New	d 200/90	617176	Q2/2023	
New	d 200/110	617177	Q2/2023	
New	d 200/160	617178	Q2/2023	
New	d 225/90	617180	Q2/2023	
New	d 225/110	617181	Q2/2023	
New	d 225/160	617182	Q2/2023	

FRIALEN safety fittings

FRIASTOP P	Gas-Stop by Pipelife			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 32, Typ SOU	617353	immediately	42
New	d 63, Typ SOU	617354	immediately	

VAM RG	Valve tapping saddle with transition HD-PE/gunmetal			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	d 180 x Rp 1 1/2	612774	immediately	
Omitted	d 180 x Rp 2	612776	immediately	

DAV	Tapping valve Classic, SDR 11				
Status	**Version**	**Order No.**	**Available from/up to**	**Predecessor /Successor**	**Page**
Omitted	d 90/32	615344	immediately	616960	35
Omitted	d 90/50	615346	immediately	616962	
Omitted	d 90/63	615347	immediately	616963	
Omitted	d 125/32	615352	immediately	616968	
Omitted	d 125/50	615354	immediately	616970	
Omitted	d 125/63	615355	immediately	616971	
Omitted	d 90/40	615617	immediately	616961	
Omitted	d 125/40	615625	immediately	616969	
Omitted	d 140/63	615930	immediately	616973	
Discontinued part	d 50/32	615955	Q1/2023	617024	
Discontinued part	d 63/32	615341	Q1/2023	617025	
Discontinued part	d 63/40	615342	Q1/2023	617026	
Discontinued part	d 75/32	615956	Q1/2023	617027	

DAV ACW	Tapping valve DAV RED SNAP, SDR 11 (closing in an anti-clockwise direction)			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 50/32 ACW	617127	Q1/2023	34
New	d 63/32 ACW	617128	Q1/2023	
New	d 63/63 ACW	617129	Q1/2023	
New	d 75/32 ACW	617130	Q1/2023	
New	d 90/32 ACW	617131	Q1/2023	
New	d 90/63 ACW	617132	Q1/2023	
New	d 110/32 ACW	617133	Q1/2023	
New	d 110/63 ACW	617134	Q1/2023	
New	d 125/32 ACW	617135	Q1/2023	
New	d 125/63 ACW	617136	Q1/2023	
New	d 140/32 ACW	617137	Q1/2023	
New	d 140/63 ACW	617138	Q1/2023	
New	d 160/32 ACW	617139	Q1/2023	
New	d 160/63 ACW	617140	Q1/2023	
New	d 180/32 ACW	617141	Q1/2023	
New	d 180/63 ACW	617142	Q1/2023	
New	d 200/32 ACW	617143	Q1/2023	
New	d 200/63 ACW	617144	Q1/2023	
New	d 225/32 ACW	617145	Q1/2023	
New	d 225/63 ACW	617146	Q1/2023	

2023 Product range amendments at a glance

FRIALEN safety fittings

FBS	Actuating linkage for FRIALOC PE shut-off valves			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	RD 2,4 - 3,5 stainless steel	616326	immediately	

KBS	Actuating linkage KBS for ball valves with adapter hexagon socket			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 20-50 RD 0,6-1,0 SW 14	615868	immediately	
New	d 20-50 RD 0,6-1,0 SW 30	615869	immediately	

USTR	Transition fitting, steel pipe			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	75/65	612789	immediately	

MUN	Transition fitting in HD-PE/brass with male thread			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
Omitted	d 75 x 2“	612694	immediately	
Omitted	d 75 x 2 1/2“	612695	immediately	

FRIATOOLS technical Equipment

WORKFLOW	WorkFlow - The digital assistant for construction project management			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	Package Test Key (runtime 3 months)	610001T	immediately	92
New	Package S Key (runtime 12 months)	610002S	immediately	
New	Package L Key (runtime 12 months)	610003L	immediately	

ALTK FMT	Transport boxes			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
On request	FRIAMAT Units up to model year 2018	627001	immediately	

ALTK FWSG		Transport boxes			
Status	**Version**	**Order No.**	**Available from/up to**	**Predecessor /Successor**	**Page**
Omitted	FWSG 225 from 2019	613406	immediately	613309	

FRIAFIT sewage system

ATSRS 45	Unequal branch 45° with off-center outlet (spigot fitting) in flow direction left			
Status	**Version**	**Order No.**	**Available from/up to**	**Page**
New	d 315 / d 160 left	682311	immediately	86
New	d 315 / d 225 left	682312	immediately	
New	d 355 / d 160 left	682313	immediately	
New	d 355 / d 225 left	682314	immediately	
New	d 450 / d 160 left	682315	immediately	
New	d 450 / d 225 left	682316	immediately	
New	d 560 / d 160 left	682317	immediately	
New	d 560 / d 225 left	682318	immediately	
New	d 630 / d 160 left	682319	immediately	
New	d 630 / d 225 left	682320	immediately	

ASA TL		Top-loading sewage saddle			
Status	**Version**	**Order No.**	**Available from/up to**	**Predecessor /Successor**	**Page**
Omitted	d 250/d 160	682619	immediately	682613	

Important information regarding safe pipe joints with Aliaxis Deutschland

Stocked status

Please note during your planning and scheduling:
- Items with an stocked status of 1 (MTS = Make to Stock) are usually available from stock.
- Items with an stocked status 3 (MTO = Make to Order) are manufactured to order. Delivery time on request. These articles are excluded from return and exchange.

Packaging units and pallet units

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

Returns

The total value of the accepted return / item must be at least € 100.

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

Inspection test certificates

For inspection test certificates according to DIN EN 10 204 - 3.1 we charge a fee of € 20.00 per order item. You can order an inspection test certificates when placing an order.

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

Product range

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

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.

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.

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.

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.

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®, FRIATOOLS®, FRIAMAT®, Sentry GS®, BAIO® as well as 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.

Important information regarding safe pipe joints with Aliaxis Deutschland

List of abbreviations

Abbreviation	Explanation
ABS	Acrylonitrile-Butadiene-Styrene
Art. No.	Article Number
BX	Sales Unit
CR	Chlorobutadiene rubber
CT	Cooling time
de	Pipe outside diameter
DIN	German Institute for Standardisation
DN	Nominal outside diameter
DN/OD	Nominal diameter relative to outside diameter
DVGW	Deutscher Verein des Gas- und Wasserfaches e. V.
DVS	Deutscher Verband für Schweißen und verwandte Verfahren (German Welding Society)
e	Wall thickness
EN	European standard
EPDM	Ethylene-propylene rubber
FKM	Fluororubber
GFK	Glass fibre reinforced plastic
HM	Electrofusion control units
HS	Butt-fusion
LS	Stock status
MOP	Maximum Operating Pressure
MTO	Make to Order
MTS	Make to Stock
NBR	Nitrile butadiene rubber
OP	Operating Pressure
Order No.	Order Number
PA	Polyamide
PE	Polyethylene
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	Polyvinylidenefluoride
RD	Pipe cover
RG	Discount group
RQ	On request
SBR	Styrene-butadiene rubber
SDR	Standard Dimension Ratio (diameter-wall thickness ratio)
STZ	Clay
SW	Wrench size
Z99, ZZ	Discount on request

Delivery and payment terms of Aliaxis Deutschland

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.

Delivery and payment terms of Aliaxis Deutschland

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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68229 Mannheim, Germany
Tel: +49 621 486-0
info.de@aliaxis.com
www.aliaxis.de

FRIALEN safety fittings

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

Product range ES 43/23

Things worth knowing about FRIALEN safety fittings

Product traceability

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

Product Certifications

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

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

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

H2 Test certificate

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

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

Fusibility

FRIALEN safety fittings can be fused with pipes with SDR levels 17.6 (e minimum = 3 mm) up to SDR 11. Deviations from these areas are mentioned in the product description. Other levels of SDR can be processed on request.

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

Please also note possible restrictions marked on the (bar) code label on the product regarding e.g. the pipe fusion range or for tapping / drilling of saddles the min pipe SDR / max wall thickness with respect to driller length.
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 100, PE 100-RC etc.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 pipes made of other PE material types, e.g. PE-Xa, PE-LD, PE-RT, PE-RD, PE-EL please request confirmation of processability.

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

FRIALEN safety fittings made of PE 100 fulfil the requirements of EN 1555-3, EN 12201-3, ISO 4427-3 and ISO 4437-3. The processing of the FRIALEN safety fittings is possible with FRIAMAT fusion units at ambient temperatures between - 10 °C and + 45 °C.

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

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

Pressure resistance

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

SDR = pipe outside Ø d / pipe wall thickness s

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

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

Things worth knowing about FRIALEN safety fittings

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 times (CT) indicated on the bar code labels are understood to be the times until the movement of the fused joint.

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 (CT) 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.

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.

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.

Sustainability

FRIALEN for hydrogen

The long term success of our company centres on the protection of the environment and the people living in it. Accordingly, Aliaxis feels its commitment to the United Nations' Sustainable Development Goals (SDGs) and configures its processes and initiatives to the measures these goals need. Our partners and suppliers too pledge their commitment when entering into business with us.

Our contribution to circular economy and CO_2 savings

We are currently working on increasing the recycled fractions we use in order to close the sustainability loop, yet without sacrificing our quality or performance. To this end, we signed the Circular Plastic Alliance Declaration. One of the measures derived from this is the use of recyclates in our wastewater product lines. The power supplied to our Mannheim location is generated by a fuel cell based on an energy concept of many years' standing.

Solutions for durable piping systems and less water loss

As has been proved, fused piping systems of polyethylene rank among the most durable solutions for the distribution of gas and drinking water. Reliable, homogeneous, and permanently tight connections safeguard a long service life in excess of fifty years. Their low weight and simple handling simplify the logistics and transport to the installation site, for less CO_2 emissions. The piping's smooth inner walls prevent deposits and so maintain their low resistance coefficients for the optimal pump performance and less energy consumption. Advanced leakage-locating solutions from Aliaxis Next simplify repair work on existing supply grids and help to plan and coordinate building measures to better effect.

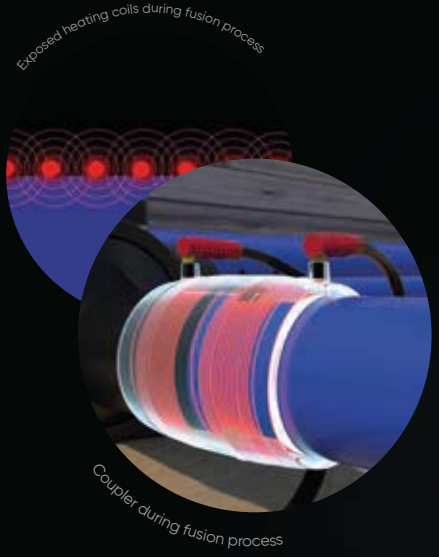
Our contribution to the thermal energy transition

More even than mobility and electric power, the generation of heat produces the most CO_2 emissions. Our product series FRIALEN and FRIAGRIP are the results of our active role in the transformation of Germany's natural gas grids for the advent of hydrogen. All of the affected products highlighted on the price list have been tested for mixing ratios of up to 100%. The permeation, function, and leak tests were all conducted by DBI Gas- und Umwelttechnik GmbH, which then issued the respective test certificates.

H2ready® GEPRÜFT / TESTED

FRIALEN Safety Technology

Open wire design



Optimum heat transfer

Immediate heat transfer within the contact area between the surfaces.

Energy-saving through effective energy utilisation.

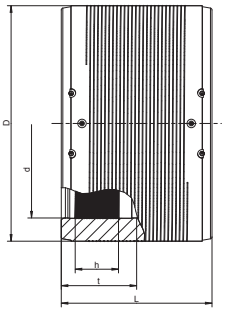
Exposed heating coils made of corrosion-resistant wire.

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

FRIATEC

aliaxis

UB SDR 11 Coupler without inner stop, SDR 11



Coupler UB SDR 11 without inner stop
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200
- FM Approvals Class: 1613 (d 63 - d 500)

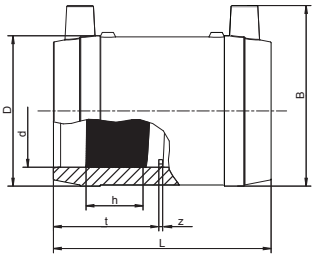
Note:
From nominal size 400 with separate fusion zone and preheating technology.

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

	d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status	
	16	**616577**	11	29	60	0.030	135	4320	3	
	32	**612662**	11 - 17,6	45	77	0.064	60	1920	1	
	40	**612663**	11 - 17,6	54	86	0.096	40	1280	1	
	50	**612664**	11 - 17,6	68	98	0.151	25	800	1	
	63	**612665**	11 - 17,6	82	112	0.225	15	480	1	
	75	**612666**	11 - 17,6	98	122	0.360	50	400	1	
	90	**612667**	11 - 17,6	114	157	0.510	30	240	1	
	110	**612668**	11 - 17,6	137	159	0.705	24	192	1	
	125	**612669**	11 - 17,6	156	172	0.946	16	128	1	
	140	**615001**	11 - 17,6	174	184	1.270	12	96	1	
	160	**612671**	11 - 17,6	199	190	1.772	8	64	1	
	180	**612672**	11 - 17,6	220	210	2.088	6	48	1	
	200	**612673**	11 - 17,6	247	220	2.798	1	56	1	
	225	**612674**	11 - 17,6	277	236	3.950	1	36	1	
	250	**617278**	11 - 17,6	309	247	5.418	1	24	1	**NEW**
	280	**617279**	11 - 17,6	344	269	7.068	1	18	1	**NEW**
1)	315	**612670**	11 - 17,6	390	300	10.040	18	18	1	
1)	355	**615074**	11 - 17,6	445	300	14.600	1	9	1	
	400	**615075**	9 - 17,6	500	320	20.800	1	4	1	
	450	**615076**	9 - 17,6	560	340	30.000	1	4	1	
	500	**615124**	9 - 17,6	630	360	40.000	1	2	1	
	560	**616312**	9 - 17,6	715	380	55.000	1	2	1	
	630	**616269**	9 - 17,6	810	420	79.600	1	2	1	
	710	**616313**	11 - 17,6	900	442	101.000	1	1	1	
	800	**616314**	11 - 17,6	1000	500	138.800	1	1	1	
	900	**616440**	11 - 17,6	1130	600	210.300	1	1	3	
	1000	**616989**	11	1200	680	223.600	1	1	3	

1) new design up to Q1/2023

MB SDR 11 Coupler with easily removable inner stop, SDR 11

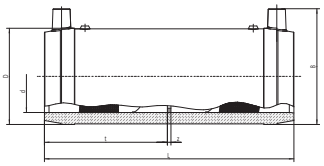


Coupler MB SDR 11 with inner stop
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Easily removable inner stop
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249

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

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
20	**612680**	11	33	60	0.040	110	3520	1
25	**612681**	11	38	66	0.047	90	2880	1
32	**612682**	11 - 17,6	45	78	0.064	60	1920	1
40	**612683**	11 - 17,6	54	86	0.100	40	1280	1
50	**612684**	11 - 17,6	68	98	0.150	25	800	1
63	**612685**	11 - 17,6	82	110	0.221	15	480	1
75	**612686**	11 - 17,6	98	122	0.360	50	400	1
90	**612687**	11 - 17,6	114	157	0.510	30	240	1
110	**612688**	11 - 17,6	137	159	0.710	24	192	1
125	**612689**	11 - 17,6	156	172	0.950	16	128	1
140	**612690**	11 - 17,6	174	184	1.270	12	96	1
160	**612691**	11 - 17,6	199	190	1.770	8	64	1

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

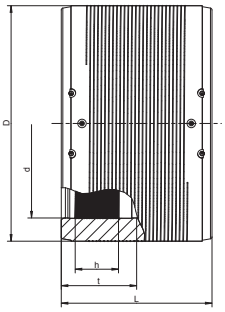


Long coupler FRIALONG SDR 11 with inner stop
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Easily removable inner stop
- Optimum pipe routing
- Tension-free fusing
- Safety technology
- DVGW test mark: DV-8601AU2248

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

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
32	**615736**	11 - 17,6	45	136	0.110	40	1280	1
40	**615737**	11 - 17,6	54	146	0.140	30	960	1
50	**615608**	11 - 17,6	68	175	0.250	16	512	1
63	**615738**	11 - 17,6	82	197	0.370	10	320	1

UB SDR 17 Coupler without inner stop, SDR 17



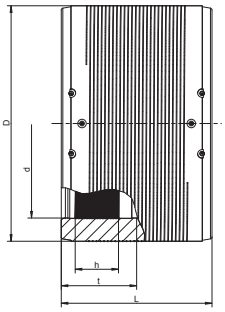
Coupler UB SDR 17 without inner stop
- Gas and water
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Safety technology
- Separate fusion zone
- DVGW test mark: DV-8611AU2250 and DW-8610CN0420

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

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
315	**616529**	17 - 26	356	280	5.880	1	18	1
355	**616530**	17 - 26	400	290	7.600	1	18	1
400	**616531**	17 - 26	450	300	10.100	1	9	1
450	**616532**	17 - 26	506	320	13.650	1	4	1
500	**616533**	17 - 26	562	350	18.250	1	4	1
560	**615706**	11-17,6	630	380	24.190	1	2	1
630	**615726**	11-17,6	710	420	34.870	1	2	1
710	**615994**	17-33	800	442	46.000	1	2	1
800	**616290**	17-33	900	500	65.900	1	1	1
900	**616345**	17	1024	500	91.500	1	1	1
1000	**616403**	17	1130	610	128.000	1	1	3
1200	**616416**	17	1356	670	205.000	1	1	3

UB SDR 9 Coupler without inner stop, SDR 9

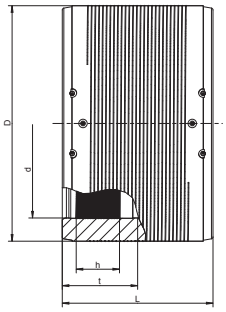


Coupler UB SDR 9 without inner stop
- Water
- Maximum pressure: Water 20 bar
- Material; PE 100
- Safety technology
- separate fusion zone and preheating technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249, DV-8611AU2250 and DW-8610CN04200

PE 100 SDR 9
Maximum permissible working pressure 20 bar (water)

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
400	**615075**	9 - 17,6	500	320	20.800	1	4	1
450	**615076**	9 - 17,6	560	340	30.000	1	4	1
500	**615124**	9 - 17,6	630	360	40.000	1	2	1
560	**616312**	9 - 17,6	715	380	55.000	1	2	1
630	**616269**	9 - 17,6	810	420	79.600	1	2	1

UB SDR 7,4 Coupler without inner stop, SDR 7.4



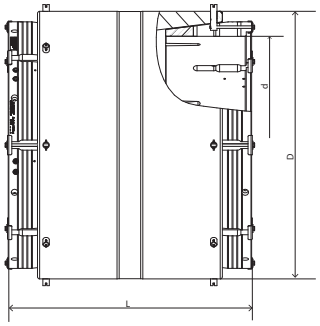
Coupler UB SDR 7.4 without inner stop
- Water
- Maximum pressure: 25 bar
- Material; PE 100
- Safety technology
- Separate fusion zone from d 280
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 90 - d 355)

Note:
From nominal size 280 with preheating technology and separate fusion zone.

PE 100 SDR 7.4
Maximum permissible working pressure 25 bar (water)

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
90	**616270**	7,4 - 11	117	138	0.530	30	240	1
110	**616271**	7,4 - 11	142	159	0.870	24	192	1
125	**616272**	7,4 - 11	160	172	1.230	16	128	1
140	**616273**	7,4 - 11	181	184	1.640	12	96	1
160	**616274**	7,4 - 11	206	203	2.360	8	64	1
180	**616282**	7,4 - 11	225	210	2.700	6	48	1
200	**616283**	7,4 - 11	250	224	3.610	2	36	1
225	**616284**	7,4 - 11	280	240	4.900	1	33	1
250	**616285**	7,4 - 11	315	246	6.700	1	24	1
280	**616286**	7,4 - 11	355	268	9.300	1	18	3
315	**616287**	7,4 - 11	400	285	12.100	1	18	1
355	**616288**	7,4 - 11	450	300	16.700	1	9	1

KM SDR 17 Conical ring coupler, SDR 17



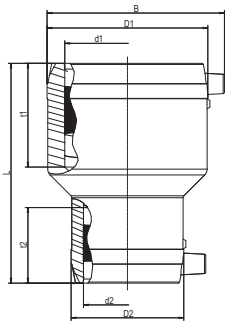
Conical ring coupler KM SDR 17
- Gas and water
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Combination of coupler and clamping coupler
- Problem solver (pipe ovally and different diameters)
- Safety technology
- Separate fusion zone

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

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
355	**616535**	17 - 26	497	705	36.500	1	1	3
400	**616536**	17 - 26	550	730	46.000	1	1	3
450	**616537**	17 - 26	602	750	54.000	1	1	3
560	**616539**	17 - 26	730	850	88.100	1	1	3
630	**616523**	17 - 26	805	940	135.000	1	1	3
800	**616541**	17 - 26	1005	1065	207.000	1	1	3
1000	**616434**	17 - 26	1245	1145	350.000	1	1	3
1200	**616435**	17 - 26	1450	1290	500.000	1	1	3

MR SDR 11 Reducer, SDR 11

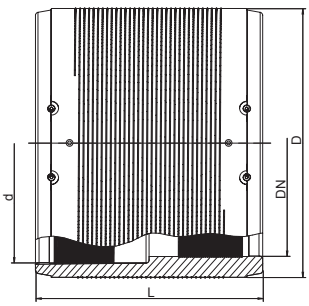


Reducer MR, SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249
- FM Approvals Class: 1613 (d 90/63 - d 110/63 + d 110/90 - d 125/90 + d 160/110 - d 225/110)

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

d_1	d_2	Order No.	SDR range	D_1/D_2	L	Weight [kg]	BX	PU	Stock status
20	16	**616824**	11 - 17,6	32/28	75	0.035	70	2240	1
32	16	**616452**	11 - 17,6	45/28	91	0.060	80	2560	1
32	20	**615386**	11 - 17,6	45/32	88	0.060	80	2560	1
32	25	**615502**	11 - 17,6	45/38	88	0.070	70	2240	1
40	20	**615387**	11 - 17,6	54/32	98	0.080	60	1920	1
40	25	**616751**	11 - 17,6	54/38	101	0.090	120	1280	1
40	32	**615388**	11 - 17,6	54/45	98	0.090	50	1600	1
50	25	**616752**	11 - 17,6	66/38	107	0.120	130	960	1
50	32	**612070**	11 - 17,6	68/45	110	0.140	32	1024	1
50	40	**612071**	11 - 17,6	68/54	110	0.140	25	800	1
63	32	**615389**	11 - 17,6	82/45	125	0.210	18	576	1
63	40	**615390**	11 - 17,6	82/54	125	0.220	16	512	1
63	50	**612072**	11 - 17,6	82/68	125	0.230	16	512	1
75	63	**616583**	11 - 17,6	94/79	143	0.325	15	270	1
90	50	**615391**	11 - 17,6	117/68	160	0.470	15	270	1
90	63	**615392**	11 - 17,6	117/82	160	0.510	15	270	1
90	75	**616582**	11 - 17,6	113/94	159	0.505	15	270	1
110	63	**615393**	11 - 17,6	142/82	160	0.730	10	180	1
110	90	**615693**	11 - 17,6	140/115	180	0.900	8	144	1
125	90	**615694**	11 - 17,6	155/115	200	0.980	8	144	1
125	110	**616510**	11 - 17,6	157/137	202	1.300	16	128	1
160	110	**615695**	11 - 17,6	201/140	230	1.990	8	64	1
180	125	**616511**	11 - 17,6	214/155	275	2.600	1	60	1
225	160	**616356**	11 - 17,6	282/203	270	4.860	1	36	1

REM SDR 17 Reducer, SDR 17 for Relining



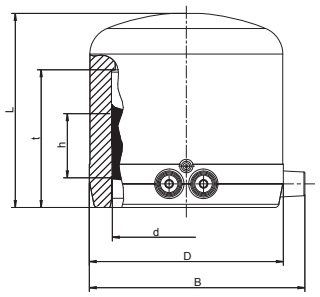
Reducer REM, SDR 17 for Relining
- Gas and water
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Problem solver for pipe refurbishment work (relining)
- Safety technology
- Separate fusion zone
- Preheating technology

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)

	d/DN	Order No.	SDR range	D	h1	L	Weight [kg]	BX	PU	Stock status
1)	110/100	**615569**	17 - 26	130	30	160	0.700	24	192	1
	160/150	**615571**	17 - 26	190	38	180	1.600	12	96	1
	315/300	**615576**	17 - 26	355	78	300	7.700	1	18	1

1) Discontinued article until Q1/2023

MV SDR 11 Cap, SDR 11

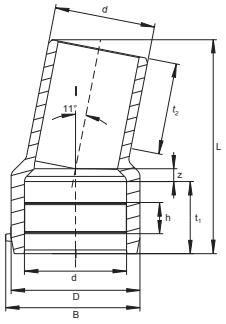


Cap MV SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249
- FM Approvals Class: 1613 (d 63 - d 225)

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

d	Order No.	SDR range	D	L	Weight [kg]	BX	PU	Stock status
20	**612025**	11 - 17,6	31	62	0.035	50	2500	1
25	**612026**	11 - 17,6	35	65	0.040	50	2500	1
32	**612027**	11 - 17,6	44	70	0.060	60	1920	1
40	**612028**	11 - 17,6	55	75	0.090	50	1600	1
50	**612029**	11 - 17,6	67	80	0.125	30	960	1
63	**612030**	11 - 17,6	84	88	0.210	20	640	1
75	**612031**	11 - 17,6	99	99	0.320	20	640	1
90	**612032**	11 - 17,6	118	114	0.500	16	288	1
110	**612033**	11 - 17,6	143	125	0.825	12	216	1
125	**612034**	11 - 17,6	163	135	1.160	8	144	1
160	**612035**	11 - 17,6	208	160	2.240	10	60	1
180	**616183**	11 - 17,6	224	157	2.180	6	48	1
200	**616184**	11 - 17,6	250,6	167	3.000	4	32	1
225	**616185**	11 - 17,6	279	184	3.970	4	32	1

WS11 Elbow 11° with spigot

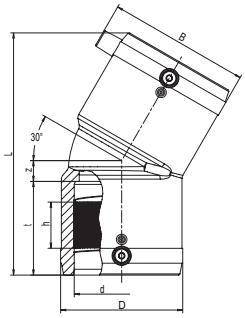


Elbow WS11 SDR 11 with spigot
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Angle 11 degrees
- Universal direction alteration
- Multiple combination = elbow 22 degrees and 33 degrees can be implemented
- Safety technology
- DVGW test mark: DV-8606AU2249

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

d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
110	**616139**	141	235	0.920	8	144	1
125	**616140**	160	250	1.250	5	90	1
160	**616141**	200	295	2.260	8	64	1
180	**616142**	226	310	3.050	4	32	1
225	**616143**	280	350	5.280	1	18	1

W30 Elbow 30°

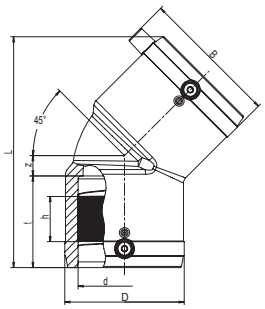


Elbow W30 SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Angle 30 degrees
- Safety technology
- DVGW test mark: DV-8606AU2249
- FM Approvals Class: 1613 (d 90 - d 225)

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

d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
90	**615272**	115	224	0.780	8	144	1
110	**615273**	142	252	1.260	6	108	1
125	**615274**	158	270	1.640	4	72	1
160	**615340**	199	350	3.870	5	40	1
180	**616261**	229	390	4.990	3	24	1
200	**616262**	254	412	6.350	1	18	1
225	**616263**	281	456	8.220	1	18	1

W45 Elbow 45°

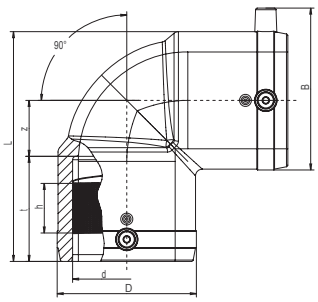


Elbow W45 SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Angle 45 degrees
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 63 - d 225)

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

d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
25	**616687**	35	89	0.050	150	2400	1
32	**612092**	43	102	0.070	50	1600	1
40	**612094**	54	120	0.110	30	960	1
50	**612096**	66	136	0.175	20	640	1
63	**612098**	82	158	0.295	10	320	1
75	**612100**	96	198	0.520	14	252	1
90	**612102**	115	232	0.810	8	144	1
110	**612104**	138	265	1.320	10	80	1
125	**612106**	157	279	1.770	10	80	1
160	**615275**	207	377	4.410	4	32	1
180	**615687**	228	382	4.610	3	24	1
200	**616264**	254	415	6.760	1	18	1
225	**615688**	280	450	8.290	1	8	1
250	**616404**	310	621	17.300	1	6	1
280	**616405**	350	702	25.600	1	4	1
315	**616406**	396	755	36.000	1	2	1

W90 Elbow 90°

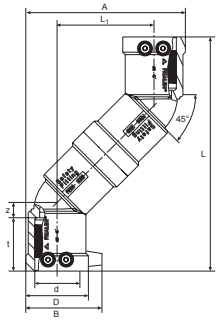


Elbow W90 SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Angle 90 degrees
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 63 - d 315)

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

d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
20	**616686**	28,5	71	0.040	200	3200	1
25	**612091**	37	73	0.060	60	1920	1
32	**612093**	43	82	0.070	50	1600	1
40	**612095**	53	96	0.110	30	960	1
50	**612097**	66	113	0.190	20	640	1
63	**612099**	83	136	0.340	10	320	1
75	**612101**	96	170	0.600	12	216	1
90	**612103**	115	202	0.950	6	108	1
110	**612105**	138	234	1.560	10	80	1
125	**612107**	157	254	2.030	8	64	1
160	**615276**	207	329	4.850	3	24	1
180	**615689**	228	354	5.760	3	24	1
200	**616265**	254	392	8.557	2	16	1
225	**615690**	280	430	10.220	1	8	1
250	**616408**	310	534	19.100	1	6	1
280	**616409**	350	621	27.500	1	2	1
315	**616410**	396	677	40.000	1	2	1

WET Misalignment bridge



Misalignment bridge WET, SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Bridging when the pipe alignment is offset
- Safety technology
- DVGW test mark: DV-8601AU2248

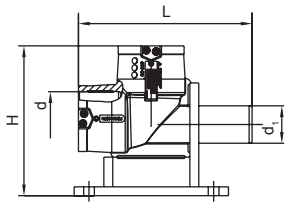
Note:
At the nominal size 63, 90 degree elbows are utilised.
Ideal for the parallel laying of two main pipes or for the house connection pipe to the tapping valve DAV or the tapping tees DAA.

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

d	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status
32	**616051**	49	177	74	0.220	15	750	1
40	**616052**	58	215	89	0.330	15	480	1
50	**616053**	70	242	101	0.510	15	270	1
63	**616699**	84	172	172	0.670	10	180	1

Successor product available from Q3 / 2023

WF Elbow with base unit



Elbow with base unit WF SDR 11
- Water
- Maximum pressure: 16 bar
- Material; PE 100
- Angle 90 degrees
- Assembly on the foundation possible
- Safety technology
- DVGW Registration No.: DV-8606AU2249

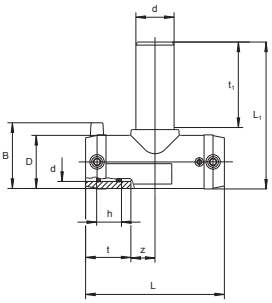
Note:
Ideal for the hydrant connection adjacent to main pipe. Extra spigot for connection to the house for continuous flow.

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

d	d_1	Order No.	H	L	Weight [kg]	BX	PU	Stock status
90	63	**615989**	253	293	2.250	3	54	1
110	63	**615998**	293	346	2.940	1	32	1

Successor product available from Q3 / 2023

TA T-piece with spigot



T-piece TA SDR 11 with spigot
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Spigot
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249

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

With extra long outlet spigot

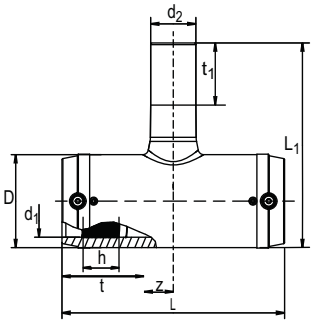
d	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status
20/20	**616685**	29	77	95	0.040	200	3200	1
25/25	**616338**	36	108	110	0.080	50	900	1
32/32	**615719**	44	116	131	0.120	35	630	1
40/40	**615720**	53	146	151	0.210	20	360	1
50/50	**615721**	67	175	186	0.358	10	180	1
63/63	**615722**	81	197	203	0.530	10	180	1

With standard outlet spigots

	d	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status	
	90/90	**616677**	116	280	219	1.250	12	96	1	
	110/110	**616680**	141	310	247	1.950	6	48	1	
	160/160	**616684**	203	390	326	4.950	3	24	1	
1)	180/180	**617175**	223	495	389	7.960	2	16	1	NEW
2)	200/200	**617179**	247	540	425	10.550	1	8	1	NEW
2)	225/225	**617183**	278	590	469	14.700	1	8	1	NEW

1) Available from Q1 / 2023
2) Available from Q2 / 2023

TA RED T-piece with reduced spigot



T-piece TA RED SDR 11 with reduced spigot
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Reduced spigots
- Safety technology
- DVGW test mark: DV-8601AU2248, DV-8606AU2249 and DV-8611AU2250

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

With long outlet spigot

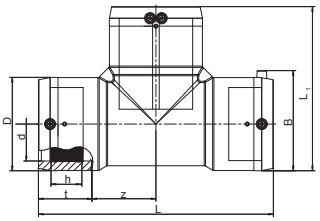
d_1	d_2	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status
32	20	**616417**	46	116	117	0.110	30	540	1
40	32	**616418**	55	146	148	0.170	20	360	1
50	32	**616419**	69	175	158	0.295	10	180	1
50	40	**616420**	69	175	167	0.315	10	180	1
63	32	**616421**	84	197	173	0.435	10	180	1
63	40	**616422**	84	197	182	0.450	10	180	1
63	50	**616423**	84	197	197	0.490	10	180	1

With standard outlet spigots

	d_1	d_2	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status	
	90	32	**616675**	116	280	172	1.050	17	136	1	
	90	63	**616676**	116	280	191	1.100	15	120	1	
	110	63	**616678**	141	310	216	1.700	8	64	1	
	110	90	**616679**	141	310	244	1.850	8	64	1	
	160	90	**616681**	203	390	305	4.400	4	32	1	
	160	110	**616682**	203	390	308	4.500	4	32	1	
	160	125	**616683**	203	390	313	4.600	3	24	1	
1)	180	125	**617174**	223	495	357	7.050	2	16	1	NEW
2)	200	90	**617176**	247	540	360	8.250	1	8	1	NEW
2)	200	110	**617177**	247	540	370	7.720	1	8	1	NEW
2)	200	160	**617178**	247	540	401	9.750	1	8	1	NEW
2)	225	90	**617180**	278	590	389	11.200	1	8	1	NEW
2)	225	110	**617181**	278	590	399	11.900	1	8	1	NEW
2)	225	160	**617182**	278	590	430	13.050	1	8	1	NEW
	250	225	**616427**	310	770	440	23.500	1	2	1	
	280	225	**616429**	350	905	475	35.500	1	2	3	
	315	225	**616431**	396	940	525	43.500	1	2	1	

1) Available from Q1 / 2023
2) Available from Q2 / 2023

T T-piece

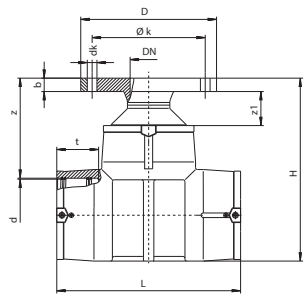


T-piece T SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250
- FM Approvals Class: 1613 (d 75 - d 315)

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

d	Order No.	D	L	L1	Weight [kg]	BX	PU	Stock status
75	**612165**	96	278	187	0.980	8	144	1
90	**612166**	117	305	211	1.650	10	80	1
110	**612167**	142	355	248	2.580	6	48	1
125	**612168**	160	384	272	3.520	5	40	1
160	**615277**	200	430	315	5.820	3	24	1
180	**615691**	228	480	354	7.900	2	16	1
200	**616266**	251	550	400	11.130	1	8	1
225	**615692**	284	580	432	13.900	1	8	1
250	**616412**	310	770	540	27.400	1	4	1
280	**616413**	350	905	630	42.200	1	2	1
315	**616414**	396	940	670	55.900	1	1	1

TFL Flange T-piece



Flange T-piece TFL
- Water
- Maximum pressure: Water 16 bar (SDR 11), 10 bar (SDR 17)
- Material; PE 100 and metal insert
- Safety technology

Note:
Reduction and fusion flange. Metal insert in flange in order to prevent cold flow.
We recommend GST seals.
Note the screw tightening torques after specifying the seal manufacturer or DVS.
Additional washers are required.

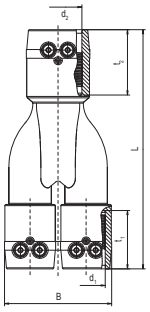
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water)

d/DN	Order No.	D	d_k	H	L	Ø k	Holes for screws	Weight [kg]	BX	PU	Stock status
110/80	**615590**	204	17	316	355	160	8	4.920	4	32	1
125/80	**615591**	204	17	343	384	160	8	5.480	3	24	1
160/80	**615592**	204	17	390	430	160	8	8.050	2	16	1
180/80	**615910**	204	17	416	480	160	8	10.000	1	8	1

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water)

d/DN	Order No.	D	d_k	H	L	Ø k	Holes for screws	Weight [kg]	BX	PU	Stock status
225/80	**616031**	204	17	465	580	160	8	15.420	2	4	1

Y Y-piece

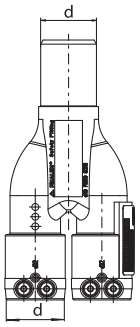


Y-piece Y SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

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

d	Order No.	L	Weight [kg]	BX	PU	Stock status
32-32-40	**640034**	205	0.230	28	504	1
40-40-50	**640036**	219	0.340	18	324	1

YS Y-piece with spigot



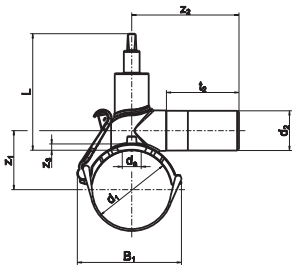
Y-piece YS SDR 11 with spigot
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

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

d	Order No.	Weight [kg]	BX	PU	Stock status
32-32-40	**640035**	0.190	28	504	1
40-40-50	**640037**	0.300	18	324	1

DAV Tapping valve RED SNAP, SDR 11

NEW



Tapping valve RED SNAP, SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Quick release mechanism (RED SNAP):
  - Simple and error-free assembly
  - More quality and high security
  - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

Note:
For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14.
The output nominal size 63 / 40 is a solution with reducing socket MR.

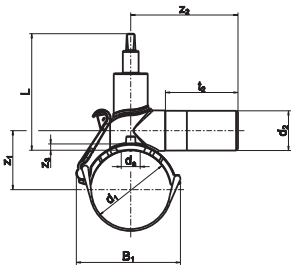
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

	d_1	d_2	Order No.	Drilling Ø d_a	L	WS [mm]	Weight [kg]	BX	PU	Stock status
1)	50	32	**617024**	30	177	14	1.060	16	288	1
1)	63	32	**617025**	30	177	14	1.100	24	192	1
1)	63	40	**617026**	30	177	14	1.430	20	160	1
1)	63	63	**616952**	30	177	14	1.210	20	160	1
1)	75	32	**617027**	30	177	14	1.120	20	160	1
	90	32	**616960**	30	183	14	1.230	12	96	1
	90	40	**616961**	30	183	14	1.240	12	96	1
	90	50	**616962**	30	183	14	1.280	12	96	1
	90	63	**616963**	30	183	14	1.350	12	96	1
	110	32	**616964**	30	183	14	1.229	12	96	1
	110	40	**616965**	30	183	14	1.239	12	96	1
	110	50	**616966**	30	183	14	1.284	12	96	1
	110	63	**616967**	30	183	14	1.356	12	96	1
	125	32	**616968**	30	183	14	1.270	12	80	1
	125	40	**616969**	30	183	14	1.280	12	80	1
	125	50	**616970**	30	183	14	1.330	12	80	1
	125	63	**616971**	30	183	14	1.400	12	80	1
	140	32	**616972**	30	183	14	1.300	12	96	1
	140	63	**616973**	30	183	14	1.430	12	96	1
	160	32	**616974**	30	208	14	1.440	10	80	1
	160	40	**616975**	30	208	14	1.450	10	80	1
	160	50	**616976**	30	208	14	1.490	10	80	1
	160	63	**616977**	30	208	14	1.570	10	80	1
	180	32	**616978**	30	208	14	1.440	10	80	1
	180	40	**616979**	30	208	14	1.450	10	80	1
	180	50	**616980**	30	208	14	1.500	10	80	1
	180	63	**616981**	30	208	14	1.570	10	80	1
	200	32	**616982**	30	208	14	1.450	8	64	1
	200	63	**616984**	30	208	14	1.590	8	64	1
	225	32	**616985**	30	208	14	1.470	8	64	1
	225	40	**616986**	30	208	14	1.490	8	64	1
	225	50	**616987**	30	208	14	1.540	8	64	1
	225	63	**616988**	30	208	14	1.620	8	64	1

1) New product design with red lever available from Q1/2023.

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

NEW



Tapping valve DAV RED SNAP ACW, SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Quick release mechanism (RED SNAP):
  - Simple and error-free assembly
  - More quality and high security
  - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

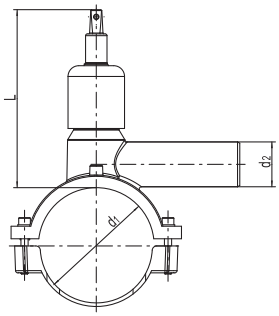
Note:
For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14.
The output nominal size 63 / 40 is a solution with reducing socket MR.

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

	d_1	d_2	Order No.	Drilling Ø d_a	L	WS [mm]	Weight [kg]	BX	PU	Stock status
1)	50	32	**617127**	30	177	14	1.210	16	288	1
1)	63	32	**617128**	30	177	14	1.210	24	192	1
1)	63	63	**617129**	30	177	14	1.330	20	160	1
1)	75	32	**617130**	30	177	14	1.040	20	160	1
1)	90	32	**617131**	30	183	14	1.210	12	112	1
1)	90	63	**617132**	30	183	14	1.330	12	112	1
1)	110	32	**617133**	30	183	14	1.230	12	112	1
1)	110	63	**617134**	30	183	14	1.360	12	96	1
1)	125	32	**617135**	30	183	14	1.260	12	112	1
1)	125	63	**617136**	30	183	14	1.380	12	112	1
1)	140	32	**617137**	30	183	14	1.230	12	96	1
1)	140	63	**617138**	30	183	14	1.360	12	96	1
1)	160	32	**617139**	30	208	14	1.410	10	80	1
1)	160	63	**617140**	30	208	14	1.550	10	80	1
1)	180	32	**617141**	30	208	14	1.440	10	112	1
1)	180	63	**617142**	30	208	14	1.570	10	112	1
1)	200	32	**617143**	30	208	14	1.440	8	112	1
1)	200	63	**617144**	30	208	14	1.590	8	112	1
1)	225	32	**617145**	30	208	14	1.470	8	112	1
1)	225	63	**617146**	30	208	14	1.620	8	112	1

1) available from Q1/2023

DAV Tapping valve Classic, SDR 11



Tapping valve Classic, SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Conventional clamping technology (brackets and screws)
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Maximum 10 turns for opening and closing
- Safety technology
- DVGW test mark: DV-6611AU2255

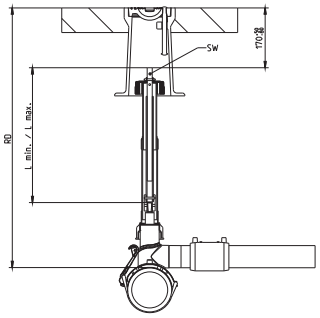
Note:
For this purpose, there is a suitable actuating linkage DBS with KlickFix and foam rubber for wrench size SW14.

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

	d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
1)	50	32	**615955**	20	164	1.310	16	288	1
1)	63	32	**615341**	20	164	0.950	16	288	1
1)	63	40	**615342**	20	164	0.970	16	288	1
1)	75	32	**615956**	20	164	1.390	12	216	1

1) Discontinued item, available until end of Q1/2023

DBS Installation kit for tapping valves

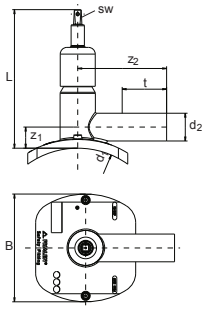


Installation kit DBS
- To operate the DAV RED SNAP from the road cap downwards
- KlickFix (tool-free) with foam rubber
- Wrench size SW14 (14 mm)
- Telescopic bar:
  - Length fitting
  - Continuously adjustable (without tools)
- Self-supporting
- Corrosion free

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

RD [m]	Order No.	WS [mm]	Weight [kg]	BX	PU	Stock status
0,7 - 1,0	**616999**	14	2.150	1	42	1
0,9 - 1,3	**617000**	14	2.650	1	42	1
1,2 - 1,8	**617001**	14	3.600	1	42	1
1,8 - 2,7	**617002**	14	3.600	1	42	3
2,6 - 3,5	**617003**	14	4.500	1	42	3

DAV TL Top-loading tapping valve, SDR 11



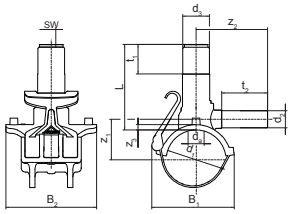
Top-loading tapping valve DAV TL SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Universal clamping option (top loading):
  - Safe clamping with FRIATOP
  - Universal adaptation to pipe diameter
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Maximum 10 turns for opening and closing
- Safety technology
- ÖVGW test mark: G2.318, GRISW1.256

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

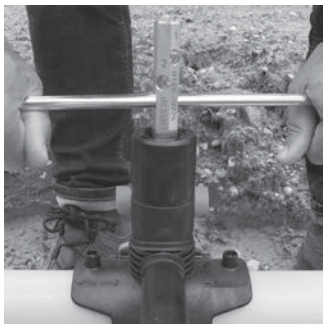
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
250-315	63	**616464**	30	251	2.455	7	56	1
355-400	63	**616465**	30	251	2.459	7	56	1

DAA Tapping tee RED SNAP, SDR 11



Tapping tee DAA SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Quick release mechanism (RED SNAP):
  - Simple and error-free assembly
  - Increased quality and safety
  - Save 50% of installation time
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-6611CS0007



Note:
Only utilise one actuating key FWSS SW 17 (Order No. 613246) for all dimensions.
There is a suitable pressure test adapter FWDPA for DAA RED SNAP (Order No. 613597).
All outlets d2 with nominal size 40 and 50 are always a solution with reducing socket MR.
When using hydrogen (H2), the tapping tees DAA must be fitted with a cap DK (Order No. 612310).

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

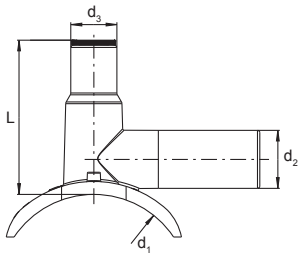
d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	WS [mm]	Weight [kg]	BX	PU	Stock status
40	20	**612630**	50	25	120	17	0.370	30	240	1
40	25	**616473**	50	25	120	17	0.380	30	240	1
40	32	**616474**	50	25	120	17	0.385	30	240	1
50	20	**616475**	50	25	120	17	0.385	28	224	1
50	25	**612702**	50	25	120	17	0.390	28	224	1
50	32	**615080**	50	25	120	17	0.400	28	224	1
63	20	**612631**	50	25	130	17	0.450	20	160	1
63	25	**612633**	50	25	130	17	0.460	20	160	1
63	32	**612632**	50	25	130	17	0.465	20	160	1
63	40	**616472**	50	30	160	17	0.855	16	128	1
63	63	**616334**	50	30	160	17	0.635	16	128	1
75	32	**616482**	50	25	130	17	0.485	24	192	1
90	20	**616483**	50	30	160	17	0.600	14	112	1
90	25	**616484**	50	30	160	17	0.610	14	112	1
90	32	**612634**	50	30	160	17	0.615	14	112	1
90	40	**615656**	50	30	160	17	0.950	14	112	1
90	50	**616476**	50	30	160	17	0.960	14	112	1
90	63	**612701**	50	30	160	17	0.730	14	112	1
110	20	**616487**	50	30	160	17	0.620	14	112	1
110	25	**616488**	50	30	160	17	0.625	14	112	1
110	32	**612637**	50	30	160	17	0.630	14	112	1
110	40	**615662**	50	30	160	17	1.000	14	112	1
110	50	**616477**	50	30	160	17	1.010	14	112	1
110	63	**612624**	50	30	160	17	0.780	14	112	1
125	20	**616491**	50	30	160	17	0.650	12	96	1
125	25	**616492**	50	30	160	17	0.655	12	96	1
125	32	**612649**	50	30	160	17	0.670	12	96	1
125	40	**615668**	50	30	160	17	1.020	12	96	1
125	50	**616478**	50	30	160	17	1.030	12	96	1
125	63	**612309**	50	30	160	17	0.800	12	96	1
140	32	**616495**	50	30	160	17	0.700	12	96	1
140	63	**616496**	50	30	160	17	0.830	12	96	1
160	20	**616497**	50	30	160	17	0.730	10	80	1
160	25	**616498**	50	30	160	17	0.735	10	80	1
160	32	**612641**	50	30	160	17	0.745	10	80	1
160	40	**615675**	50	30	160	17	1.095	10	80	1
160	50	**616480**	50	30	160	17	1.105	10	80	1
160	63	**612650**	50	30	160	17	0.875	10	80	1

DAA Tapping tee RED SNAP, SDR 11

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

d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	WS [mm]	Weight [kg]	BX	PU	Stock status
180	20	**616501**	50	30	190	17	0.785	10	80	3
180	25	**616502**	50	30	190	17	0.790	10	80	1
180	32	**612651**	50	30	190	17	0.790	10	80	1
180	50	**616481**	50	30	190	17	1.170	10	80	1
180	63	**612652**	50	30	190	17	0.940	10	80	1
200	32	**612654**	50	30	190	17	0.810	8	64	1
200	63	**612659**	50	30	190	17	0.950	8	64	1
225	32	**612657**	50	30	190	17	0.835	8	64	1
225	50	**616486**	50	30	190	17	1.210	8	64	1
225	63	**612655**	50	30	190	17	0.980	8	64	1

DAA TL Top-loading tapping tee, SDR 11



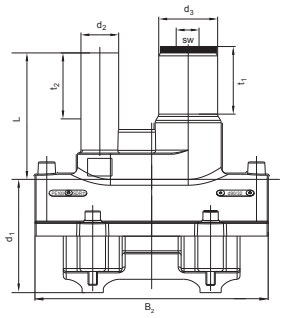
Top-loading tapping tee DAA TL SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Universal clamping option (top loading):
  - Safe clamping with FRIATOP
  - Universal adaptation to pipe diameter
- Leak test possible before drilling
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250

Note:
Can only be fused with the clamping device FRIATOP (Order No. 613350).
Only one actuating key FWSS SW 19 (Order No. 613250) for all dimensions.
There is a suitable pressure test adapter FWDPA for DAA TL (Order No. 613595).
When using hydrogen (H2), the tapping tees DAA must be fitted with a cap DK (Order No. 612310).
From nominal size 315 to 400, the DAA TL is only suitable for SDR 17 pipes.

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

d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
250-315 (- 400)	63	**615339**	50	30	167	1.360	4	72	1

DAP Vertical tapping tee, SDR 11



Vertical tapping tee DAP SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Conventional clamping technology (brackets and screws)
- Vertical outlet for special solutions:
  - Space-saving installation
  - With 90 degree elbow and ball valve = Rotatable dome 360 degrees
- Leak test possible before drilling.
- Integrated drill with upper and lower inner stop
- Sealing plug with internal sealing O-ring
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249

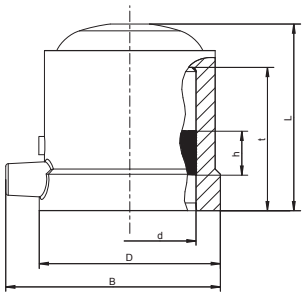
Note:
Utilise the operating key FWSS SW 17 for d 63 (Order No. 613246) or FWSS SW 19 from d 90 (Order No. 613250).
There is a suitable pressure test adapter FWDPA for DAP (Order No. 613595).
When using hydrogen (H2), the tapping tees DAA must be fitted with a cap DK (Order No. 612310).

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

	d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
	63	32	**616042**	40	21	125	0.630	16	288	1
	110	32	**615581**	50	30	158	1.280	12	96	1
	110	50	**615606**	50	30	158	1.380	12	96	1
	125	32	**615711**	50	30	158	1.310	12	96	1
	125	50	**615712**	50	30	158	1.360	12	96	1
	160	32	**615713**	50	30	170	1.540	8	64	1
	160	50	**615714**	50	30	170	1.560	8	64	1
	180	32	**615715**	50	30	170	1.540	6	48	1
	180	50	**615716**	50	30	170	1.560	6	48	1
1)	225	32	**615717**	50	30	170	1.570	6	48	3
	225	50	**615718**	50	30	170	1.590	6	48	1

1) Minimum purchase quantity is a complete packaging unit (BX).

DK Cap for tapping tees, SDR 11



Cap for tapping tees DK SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Safety technology
- DVGW test mark: DV-8601AU2248

Note:
When using hydrogen (H2), the tapping tees DAA, DAA TL and DAP must be fitted with a closure cap DK.

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

	d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
	50	**612310**	69	72	0.110	30	960	1

GAB Purge stack for venting gas pipes

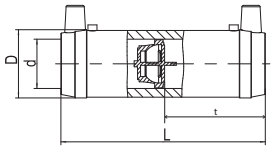
Purge stack GAB for venting PE gas pipes
- Gas and H2
- Maximum pressure: 10 bar
- Material; PE 100
- Blow-out aperture: 1” and 2”
- With DAV RED SNAP
- Telescopic bar:
  - Length adjustment
  - Continuously adjustable (without tools)
- Maximum 9 turns for opening and closing
- Safety technology
- DVGW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

Note:
The GAB is delivered without additional tools.

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

d_1	R	RD [m]	Order No.	Weight [kg]	BX	PU	Stock status
63	1”	0,7 - 1,0	**2006380**	4.440	1	1	1
63	2”	0,7 - 1,0	**2006383**	6.710	1	1	1
90	1”	0,7 - 1,0	**2009080**	5.240	1	1	3
90	2”	0,7 - 1,0	**2009083**	7.400	1	1	3
110	1”	0,7 - 1,0	**2011080**	4.740	1	1	3
110	2”	0,7 - 1,0	**2011083**	6.800	1	1	1
125	1”	0,7 - 1,0	**2012580**	5.700	1	1	3
125	2”	0,7 - 1,0	**2012583**	7.850	1	1	3
160	1”	0,7 - 1,0	**2016080**	6.200	1	1	3
160	2”	0,7 - 1,0	**2016083**	8.330	1	1	3
180	1”	0,7 - 1,0	**2018080**	6.200	1	1	3
180	2”	0,7 - 1,0	**2018083**	8.340	1	1	3
225	1”	0,7 - 1,0	**2022580**	6.300	1	1	3
225	2”	0,7 - 1,0	**2022583**	8.440	1	1	3

FRIASTOP M Gas-Stop SENTRI GS by Maxitrol



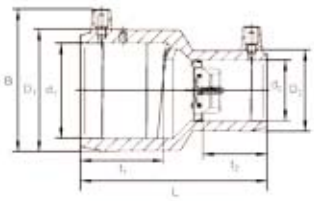
Gas-Stop FRIASTOP with SENTRI GS System by Maxitrol
- Gas and H2 (20 %)
- Maximum pressure:
  - Type Z and B 5 bar gas
  - Type D 1 bar gas
- Material; PE 100
- Overflow device for Type D and Z
- Function with admixture of 20 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BO0438

PE 100 SDR 11
Maximum permissible working pressure Type Z, B: 5 bar (gas), Type D: 1 bar (gas)

d	Operating pressure range p_{min} - p_{max}	Order No.	Type	D	L	VN	Weight [kg]	BX	PU	Stock status
32	35 mbar - 5 bar	**616187**	Z	45	136	17 - 40	0.140	40	1280	1
40	35 mbar - 5 bar	**616188**	Z	54	146	26 - 62	0.220	30	960	1
50	35 mbar - 5 bar	**616189**	Z	68	175	41 - 99	0.380	16	512	1
63	35 mbar - 5 bar	**616190**	Z	82	197	66 - 158	0.530	10	320	1
32	25 mbar - 1 bar	**616191**	D	45	136	11 - 16	0.140	40	1280	1
40	25 mbar - 1 bar	**616193**	D	54	146	19 - 27	0.220	30	960	3
50	25 mbar - 1 bar	**616195**	D	68	175	28 - 40	0.380	16	512	1
63	25 mbar - 1 bar	**616197**	D	82	197	51 - 72	0.530	10	320	1
32	100 mbar - 5 bar	**616192**	B	45	136	26 - 60	0.140	40	1280	1

Acceptance only in complete packaging units.

MR STOP Gas-Stop SENTRI GS by Maxitrol in Reducer



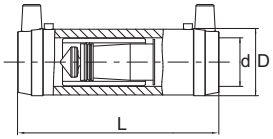
Gas-Stop MR STOP with SENTRI GS System by Maxitrol in Reducer
- Gas and H2 (20 %)
- Maximum pressure:
  - Type Z 5 bar gas
  - Type D 1 bar gas
- Material; PE 100
- Overflow device for Type Z and D
- Function with admixture of 20 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BO0438

PE 100 SDR 11
Maximum permissible working pressure Type Z: 5 bar (gas), Type D: 1 bar (gas)

d_1	d_2	Operating pressure range p_{min} - p_{max}	Order No.	Type	D_1/D_2	L	VN	Weight [kg]	BX	PU	Stock status
50	40	35 mbar - 5 bar	**616218**	Z	68/54	110	26 - 62	0.210	12	600	3
63	32	35 mbar - 5 bar	**616219**	Z	82/45	125	17 - 40	0.240	18	576	1
63	40	35 mbar - 5 bar	**616220**	Z	82/54	125	26 - 62	0.290	8	400	3
63	50	35 mbar - 5 bar	**616221**	Z	82/68	125	41 - 99	0.360	8	400	1
63	32	25 mbar - 1 bar	**616238**	D	82/45	125	11 – 16	0.240	10	500	1
63	50	25 mbar - 1 bar	**616240**	D	82/68	125	28 - 40	0.360	16	512	1

Acceptance only in complete packaging units.

FRIASTOP P Gas-Stop by Pipelife



Gas-Stop FRIASTOP with integrated Gas-Stop System by Pipelife
- Gas and H2 (30 %)
- Maximum pressure:
  - Type U, UUE and S, SOU 5 bar gas
  - Type A/D 1 bar gas
- Material; PE 100
- Overflow device for Type A/D, UUE and S
- Without overflow device for Type U and SOU
- Function to admixture of 30 % hydrogen
- Safety technology
- DVGW test mark: DV-8601AU2248 and DG-4360BP0060 (DVGW G 5305-2)

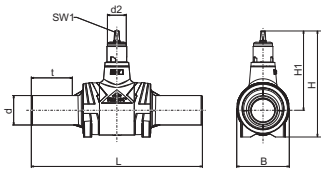
PE 100 SDR 11
Maximum permissible working pressure Type U, UUE, S, SOU: 5 bar (gas), Type A/D: 1 bar (gas)

H2 (30 %)

d	Operating pressure range p_{min} - p_{max}	Order No.	Type	D	L	VN	Weight [kg]	BX	PU	Stock status	
32	35 mbar - 5 bar	**616199**	U	45	136	16 - 38	0.140	40	1280	1	
50	35 mbar - 5 bar	**616201**	U	68	175	38 - 91	0.350	20	640	1	
63	35 mbar - 5 bar	**616203**	U	82	197	58 - 140	0.560	12	384	1	
32	35 mbar - 5 bar	**616200**	UUE	45	136	16 - 38	0.140	40	1280	1	
50	35 mbar - 5 bar	**616202**	UUE	68	175	38 - 91	0.350	20	640	1	
63	35 mbar - 5 bar	**616204**	UUE	82	197	58 - 140	0.560	12	384	1	
32	25 mbar - 1 bar	**616205**	A/D	45	136	10 - 14	0.140	40	1280	1	
50	25 mbar - 1 bar	**616207**	A/D	68	175	25 - 36	0.350	20	640	1	
63	25 mbar - 1 bar	**616209**	A/D	82	197	40 - 55	0.560	12	384	1	
32	200 mbar - 5 bar	**616339**	S	45	136	36 - 80	0.140	40	1280	1	
50	200 mbar - 5 bar	**616340**	S	68	175	110 - 240	0.350	20	640	3	
63	200 mbar - 5 bar	**616341**	S	82	197	180 - 400	0.560	12	384	3	
32	200 mbar - 5 bar	**617353**	SOU	45	136	36 - 80	0.140	40	1280	3	**NEW**
63	200 mbar - 5 bar	**617354**	SOU	82	197	180 - 400	0.560	12	384	3	**NEW**

Acceptance only in complete packaging units.

FRIALOC PE shut-off valve without flow losses



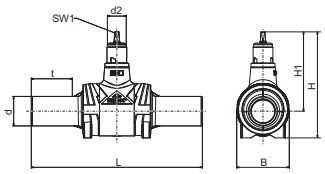
Shut-off valve FRIALOC
- Water
- Maximum pressure: 16 bar
- Material; PE 100
- Double shut-off function
- No cavities and stagnation
- No flow losses
- Maximum 14 turns for opening and closing
- DVGW test mark: DW-6210BT0171

Note:
The nominal sizes 200 to 250 have a restricted passage of d 180.
There is a suitable installation kit FBS with KlickFix for wrench size SW19 (19 mm).
Value da is the maximum tapping diameter of the external tapping device.

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

d	d_2	Order No.	da_klein	H	L	WS1 [mm]	Weight [kg]	BX	PU	Stock status
90	80	**616293**	65	450	720	19	13.900	1	8	1
110	80	**616294**	84	450	720	19	14.200	1	8	1
125	80	**616295**	84	450	720	19	14.500	1	8	1
160	80	**616296**	123	608	1010	19	37.900	1	2	1
180	80	**616297**	123	608	1030	19	39.000	1	2	1
200	80	**616453**	123	608	1030	19	40.500		2	3
225	80	**616298**	123	608	1030	19	40.500	1	2	1
250	80	**616438**	123	608	1030	19	41.940		2	3

FRIALOC ACW PE shut-off valve without flow losses (closing in a clockwise direction)



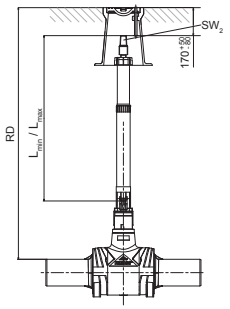
Shut-off valve FRIALOC ACW
- Water
- Maximum pressure: 16 bar
- Material; PE 100
- Double shut-off function
- No cavities and stagnation
- No flow losses
- Maximum 14 turns for opening and closing
- Closing operation, anti-clockwise
- DVGW test mark: DW-6210BT0171

Note:
The nominal sizes 200 to 225 have a limited passage of d 180.
There is a suitable installation kit FBS with KlickFix for wrench size SW19 (19 mm).
Value da is the maximum tapping diameter of the external tapping device.

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

d	d_2	Order No.	da_klein	H	L	WS1 [mm]	Weight [kg]	BX	PU	Stock status
90	80	**616991**	65	450	720	19	13.900	1	8	1
110	80	**616992**	84	450	720	19	14.200	1	8	1
125	80	**616993**	84	450	720	19	14.500	1	8	1
160	80	**616994**	123	608	1010	19	37.900	1	2	1
180	80	**616995**	123	608	1030	19	39.000	1	2	1
200	80	**616996**	123	608	1030	19	40.500	1	2	3
225	80	**616997**	123	608	1030	19	40.500	1	2	1

FBS Actuating linkage for FRIALOC PE shut-off valves



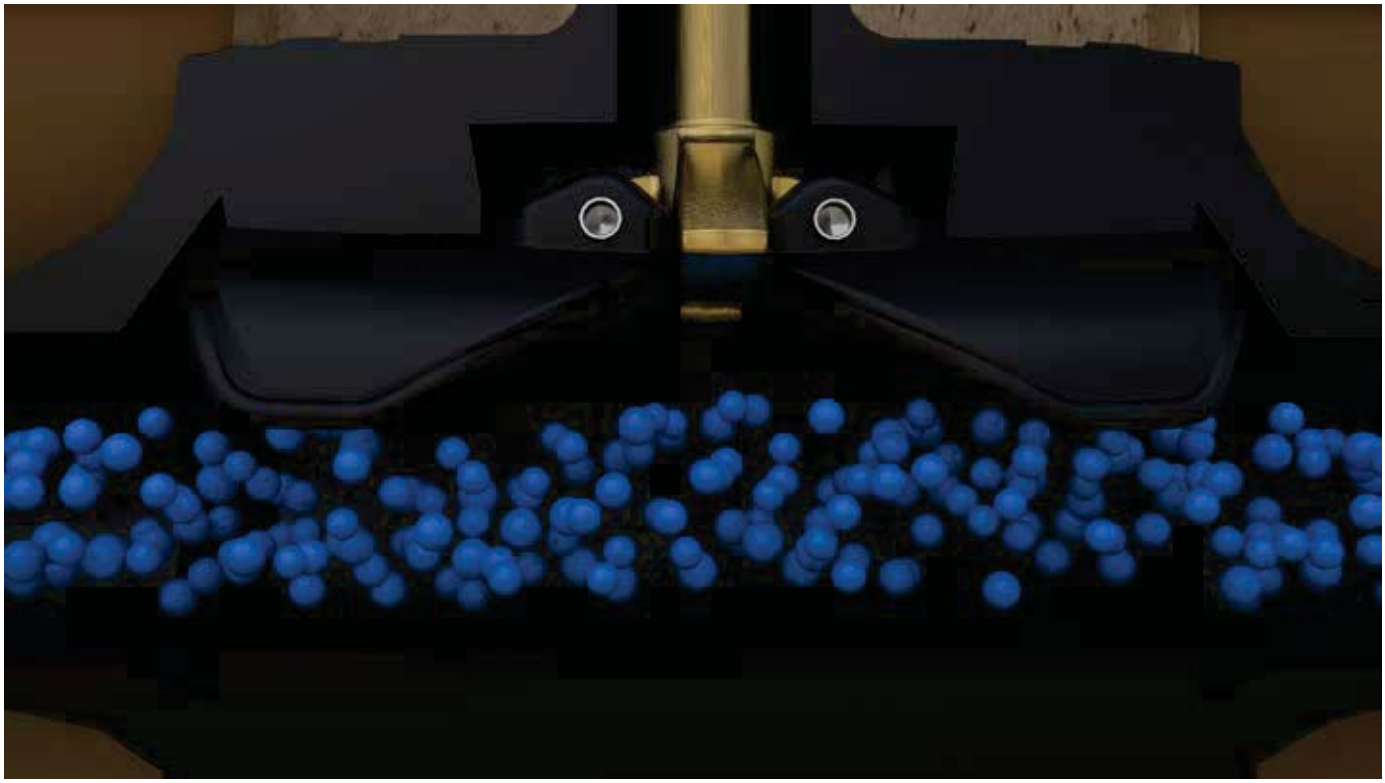
Actuating linkage FBS for FRIALOC
- To operate the FRIALOC from the road cap downwards
- ClickFix (tool-free)
- Wrench size SW19 (19 mm)
- Telescopic bar:
  - Length fitting
  - Continuously adjustable (without tools)
- Self-supporting
- Corrosion free

Steel linkage, hot-dipped galvanised

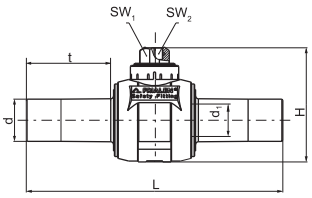
RD [m]	Order No.	WS2 [mm]	Weight [kg]	BX	PU	Stock status
0,75 - 1,0	**616308**	30	2.500	1	42	1
0,9 - 1,3	**616309**	30	2.950	1	42	1
1,2 - 1,8	**616310**	30	3.850	1	42	1
1,5 - 2,3	**616318**	30	4.400	1	42	1

Stainless steel linkage

RD [m]	Order No.	WS2 [mm]	Weight [kg]	BX	PU	Stock status
0,75 - 1,0	**616315**	30	2.400	1	42	3
0,9 - 1,3	**616316**	30	2.800	1	42	1
1,2 - 1,8	**616317**	30	3.450	1	42	1
1,5 - 2,3	**616319**	30	4.150	1	42	3



KHP Ball valve for gas



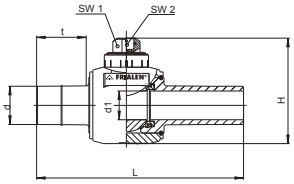
Ball valve for gas KHP
- Gas and H2
- Maximum pressure: 10 bar
- Material; PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- DVGW test mark: DG-8631AU2251, DG-8631AU2252 and DG-8631AU2253

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

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

d	d_1	Order No.	H	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU	Stock status
32	24	**612490**	136	310	50 x 50	20	0.540	1	170	1
40	24	**612497**	136	310	50 x 50	20	0.580	1	170	1
50	24	**612492**	136	310	50 x 50	20	0.680	1	170	1
63	43	**612494**	193	410	50 x 50	25	2.300	1	50	1
90	67	**612495**	241	553	50 x 50	25	4.200	1	24	1
110	67	**612493**	241	553	50 x 50	25	4.500	1	24	1
125	67	**612496**	241	553	50 x 50	25	5.200	1	24	1
160	98	**612483**	332	539	50 x 50	25	12.000	1	8	1
180	98	**615309**	332	539	50 x 50	25	12.500	1	8	1
200	98	**612480**	332	539	50 x 50	25	13.500	1	8	1
225	98	**616186**	332	539	50 x 50	25	14.500	1	8	1

KH Ball valve for gas without flow losses



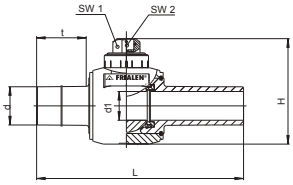
Ball valve for gas KH without flow losses
- Gas and H2
- Maximum pressure: 10 bar
- Material; PE 100
- Gasket: NBR
- No flow losses
- 1/4 turns for opening and closing
- DVGW test mark: DG-8631AU2251 and DG-8631AU2252

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

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

d	d_1	Order No.	H	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU	Stock status
20	24	**616470**	138	310	50 x 50	20	0.500	1	170	3
25	24	**616471**	138	310	50 x 50	20	0.550	1	170	1
32	34	**616176**	156	324	50 x 50	20	0.770	1	100	1
40	34	**616177**	156	324	50 x 50	20	0.800	1	100	1
50	51	**616178**	193	405	50 x 50	25	2.240	1	50	1
63	51	**616179**	206	410	50 x 50	25	2.420	1	50	1
90	98	**616180**	288	577	50 x 50	25	6.600	1	18	1
110	98	**616181**	288	577	50 x 50	25	6.750	1	18	1
125	98	**616182**	288	577	50 x 50	25	6.900	1	18	1

KHW Ball valve for water



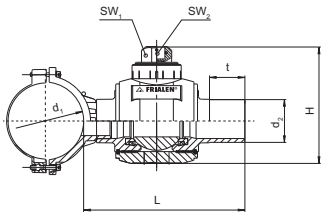
Ball valve KHW for water
- Water
- Maximum pressure: 16 bar
- Material; PE 100
- Gasket: EPDM
- 1/4 turns for opening and closing
- DVGW test mark: DW-6210CQ0059

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

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

d	d_1	Order No.	H	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU	Stock status
32	34	**616656**	156	324	50 x 50	20	0.770	1	100	1
40	34	**616657**	156	324	50 x 50	20	0.800	1	100	1
50	43	**616658**	193	405	50 x 50	25	2.240	1	50	1
63	51	**616659**	206	410	50 x 50	25	2.420	1	50	1

AKHP Tapping ball valve for side tapping gas under pressure



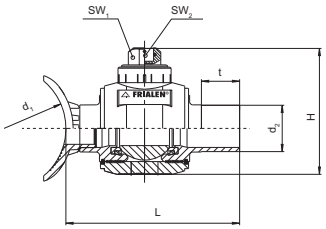
Tapping ball valve AKHP for gas
- Gas and H2
- Maximum pressure: 10 bar
- Material; PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- Saddle component with clamp
- Safety technology
- DVGW test mark: DG-8631AU2252 and DG-8631AU2253

Note:
For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).
For tapping under pressure, we recommend the tapping tool from Hütz & Baumgarten (www.huetz-baumgarten.de).

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

d_1	d_2	Order No.	Drilling Ø d_a	H	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU	Stock status
110	63	**615427**	42	180	330	50 x 50	25	3.070	6	48	1
110	90	**615428**	60	240	335	50 x 50	25	4.670	4	32	1
125	90	**615431**	60	240	335	50 x 50	25	4.790	4	32	1
160	63	**615433**	42	180	330	50 x 50	25	3.300	4	32	1
160	90	**615434**	60	240	335	50 x 50	25	5.000	4	32	1
180	90	**615437**	60	240	335	50 x 50	25	5.000	4	32	1
225	90	**615440**	60	240	335	50 x 50	25	5.000	4	32	1

AKHP TL Tapping ball valve Top loading for gas for side tapping under pressure



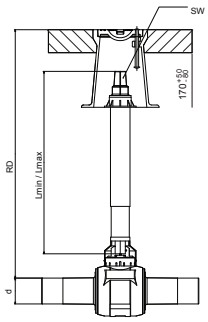
Tapping ball valve AKHP TL for gas
- Gas and H2
- Maximum pressure: 10 bar
- Material; PE 100
- Gasket: NBR
- 1/4 turns for opening and closing
- Top load saddle
- Safety technology
- DVGW test mark: DG-8631AU2252 and DG-8631AU2253

Note:
Can only be used with the clamping device FRIATOP (Order No. 613350).
For this purpose, there is a suitable actuating linkage KBS for wrench sizes SW14 (14 mm) and SW30 (30 mm).
For tapping under pressure, we recommend the drilling tool from Hütz & Baumgarten (www.huetz-baumgarten.de).
From nominal size 450 to 560 only suitable for SDR17.

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

d_1	d_2	Order No.	Drilling Ø d_a	H	L	WS1 [mm]	WS2 [mm]	Weight [kg]	BX	PU	Stock status
250-450 (- 560)	90	**615526**	60	240	335	50 x 50	25	4.470	4	32	1

KBS Actuating linkage for ball valves



Actuating linkage 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 free

Note:
Stable seating for the sleeve pipe bell at the nominal size of 20-50, by means of a design comprising a housing.

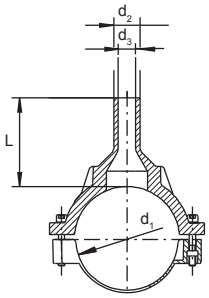
d	RD [m]	Order No.	WS [mm]	Weight [kg]	BX	PU	Stock status
20-50	0,45 - 0,7	**615741**	30	1.800	1	42	1
20-50	0,6 - 1,0	**615957**	14	2.700	1	42	1
20-50	0,6 - 1,0	**615328**	30	2.000	1	42	1
20-50	1,0 - 1,5	**616466**	14	3.400	1	42	1
20-50	1,0 - 1,5	**615330**	30	3.400	1	42	1
20-50	1,2 - 2,0	**616068**	14	3.450	1	42	1
20-50	1,2 - 2,0	**615329**	30	3.650	1	42	1
63-225	0,6 - 1,0	**615958**	14	2.050	1	42	1
63-225	0,6 - 1,0	**615310**	30	3.050	1	42	1
63-225	1,0 - 1,5	**616467**	14	4.150	1	42	1
63-225	1,0 - 1,5	**615331**	30	4.150	1	42	1
63-225	1,2 - 2,0	**616069**	14	3.600	1	42	1
63-225	1,2 - 2,0	**615311**	30	5.250	1	42	1

KBS Actuating linkage KBS for ball valves with adapter hexagon socket

Actuating linkage KBS for ball valves with adapter hexagon socket
- Long dome plus coupling sleeve for external hexagon of the ball valve (KH, KHP, KHW)

d	RD [m]	Order No.	WS [mm]	Weight [kg]	BX	PU	Stock status
20-50	0,6 - 1,0	**615868**	14	1.490	1	42	3
20-50	0,6 - 1,0	**615869**	30	1.600	1	42	1

SA Saddle with spigot, SDR 11



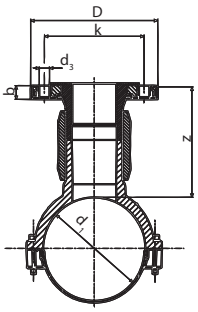
Saddle with spigot SA SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Saddle component with clamp
- Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8601AU2248 and DV-8606AU2249.

Note:
For the pressure-free tapping, there is our drilling device FWAB.
For tapping under pressure, we recommend the drilling tool from Hütz & Baumgarten (www.huetz-baumgarten.de).
If required, please contact our hotline: +49 621 486-2325.

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

d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
63	32	**612757**	22	20	100	0.330	20	360	1
63	50	**612759**	37	36	113	0.370	20	360	1
75	50	**615020**	38	36	82	0.430	15	270	1
90	32	**615285**	21	20	103	0.700	20	160	1
90	63	**612819**	50	46	103	0.720	20	160	1
110	32	**615334**	24	20	125	0.788	12	96	1
110	50	**615031**	39	36	132	0.816	12	96	1
110	63	**612760**	49	46	150	0.868	12	96	1
110	90	**615411**	70	65	115	0.960	12	96	1
125	32	**615087**	21	20	109	0.945	12	96	1
125	63	**612761**	47	46	109	0.990	12	96	1
125	90	**615412**	70	65	116	1.080	12	96	1
125	110	**615584**	86	84	116	1.150	10	80	1
160	32	**612886**	21	20	126	1.440	8	64	1
160	63	**612762**	47	46	140	1.520	6	48	1
160	90	**615413**	70	65	140	1.640	2	36	1
160	110	**615739**	86	84	140	1.765	2	36	1
160	125	**615585**	98	95	140	1.880	2	36	1
180	63	**612763**	47	46	109	1.190	6	48	1
180	90	**615414**	70	65	116	1.820	2	36	1
180	110	**615948**	86	84	136	1.960	2	36	1
180	125	**615740**	98	95	141	2.110	2	36	1
200	63	**612764**	47	46	109	1.260	5	40	1
225	63	**612765**	47	46	109	1.210	5	40	1
225	90	**615415**	70	65	130	1.950	5	40	1
225	110	**616044**	86	84	140	1.960	5	40	1
225	125	**616045**	97	95	146	2.240	4	32	1
225	160	**616046**	125	123	157	2.580	4	32	1

SAFL Spigot saddle with flange outlet, SDR 11



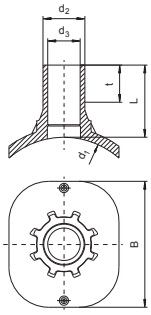
Spigot saddle with flange outlet SAFL SDR 11
- Gas and water
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Saddle component with clamp and flange
- Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8606AU2249

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

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

d_1/DN	Order No.	D	d_k	Drilling Ø d_a	H	L	Ø k	Holes for screws	Weight [kg]	BX	PU	Stock status
110/80	**616016**	204	16.5	65	296	190	160	8	3.700	3	54	1
125/80	**616017**	204	16.5	65	311	205	160	8	3.940	2	36	1
160/80	**616018**	204	16.5	65	346	245	160	8	4.320	2	36	1
180/80	**616019**	204	16.5	65	366	285	160	8	4.610	2	36	1
225/80	**616020**	204	16.5	65	411	284	160	8	4.720	2	16	1
160/100	**616022**	224	16.5	84	346	245	180	8	5.270	2	36	1
225/100	**616024**	224	16.5	84	411	284	180	8	5.635	2	16	1

SA TL Top-loading spigot saddle, SDR 11



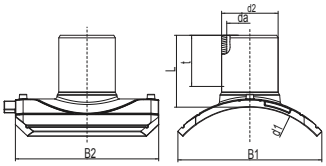
Top-loading spigot saddle SA TL SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Universal clamping option (top loading):
  - Safe clamping with FRIATOP
  - Universal adaptation to pipe diameter
  - Tapping under pressure possible
- Safety technology
- DVGW test mark: DV-8606AU2249 and DV-8611AU2250

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

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

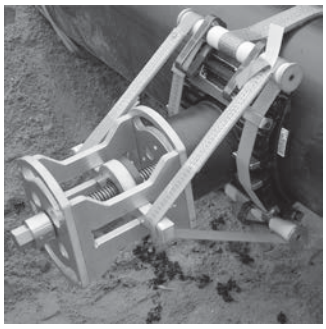
d_1	d_2	Order No.	d_3	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
250-560	32	**615465**	21	20	109	0.621	5	90	1
250-560	63	**615466**	47	46	109	0.676	5	90	1

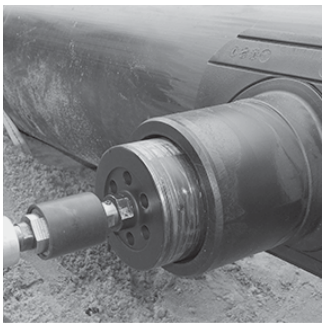
SA UNI Saddle with outlet spigot Universal SDR 11

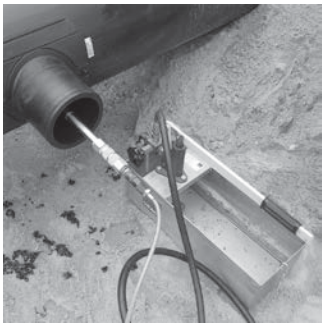


Saddle with outlet spigot Universal SA UNI SDR 11
Gas, water and H2

- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Universal clamping option (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
- DVGW test mark: DV-8611AU2250





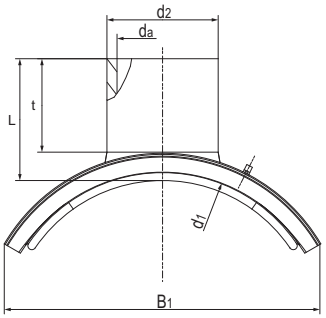


Note:
Can only be used with the clamping device UNITOP (Order No. 613385).
For pressure-free tapping, we recommend our FWAB drilling device.
Pressure test of the fusing before tapping with pressure test adapter FWDPA (Order No. 613596).
For tapping under pressure, please contact our hotline: +49 621 486-2325.
Also suitable for all special dimensions in relining application. For intermediate sizes in the diameter range d 280 - < d 315, please use SA UNI d 250 - 280.

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

d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
250-280	90	**616553**	65	130	1.465	5	40	1
250-280	110	**616554**	84	140	1.610	5	40	1
250-280	125	**616555**	95	146	1.790	5	40	1
250-280	160	**616556**	123	158	2.180	5	40	1
315-400	90	**616557**	65	130	1.485	5	40	1
315-400	110	**616558**	84	140	1.630	5	40	1
315-400	125	**616559**	95	146	1.810	5	40	1
315-400	160	**616560**	123	158	2.190	5	40	1
450-900	90	**616561**	65	130	1.500	5	40	1
450-900	110	**616562**	84	140	1.645	5	40	1
450-900	125	**616563**	95	146	1.820	5	40	1
450-900	160	**616564**	123	158	2.200	5	40	1

SA VL Vacuum-loading spigot saddle, SDR 11



Vacuum-loading spigot saddle SA VL SDR 11 (and SDR 17)
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Vacuum clamping option (vacuum-loading):
  - Safe clamping with vacuum technology
  - Ideal contact with the pipe
  - Without wrapping around the pipe
- Tapping under pressure possible
- Safety technology

Note:
Can only be used with the vacuum pump VACUPUMP only (Order No. 613827) and the corresponding plunger PRESSKO (Order No. 613823).
For pressure-free tapping, we recommend our FWAB drilling device.
For proper use and tapping under pressure, please contact our hotline: +49 621 486-2325

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

d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
400	225	**616469**	172	263	14.700	1	4	3
400	250	**616779**	187	261	15.200	1	4	3
450	225	**616780**	172	267	17.500	1	4	3
450	250	**616781**	187	272	18.000	1	4	3
500	225	**616391**	172	265	14.500	1	4	3
500	250	**616782**	187	263	15.500	1	4	3
500	280	**616783**	225	265	15.600	1	4	3
500	315	**616784**	254	268	21.600	1	4	3
560	225	**616392**	172	263	15.700	1	4	3
560	250	**616785**	187	263	17.000	1	4	3
560	280	**616786**	225	265	17.000	1	4	3
560	315	**616787**	254	268	19.800	1	4	3
560	355	**616788**	286	260	26.000	1	4	3
560	400	**616789**	322	260	27.200	1	4	3
630	225	**616393**	172	265	17.000	1	4	3
630	250	**616790**	187	267	17.500	1	4	3
630	280	**616791**	225	263	18.000	1	4	3
630	315	**616792**	254	265	20.900	1	4	3
630	355	**616793**	286	269	23.800	1	4	3
630	400	**616794**	322	267	25.000	1	4	3
710	225	**616394**	172	270	20.500	1	4	3
710	250	**616795**	187	265	22.100	1	4	3
710	280	**616796**	225	268	21.500	1	4	3
710	315	**616797**	254	268	23.800	1	4	3
710	355	**616798**	286	285	28.500	1	4	3
710	400	**616762**	322	275	29.500	1	4	3
800	225	**616395**	172	270	17.300	1	4	3
800	250	**616799**	187	275	18.600	1	4	3
800	280	**616800**	225	268	18.600	1	4	3
800	315	**616801**	254	268	20.500	1	4	3
800	355	**616802**	286	290	31.200	1	4	3
800	400	**616803**	322	275	31.600	1	4	3

SA VL Vacuum-loading spigot saddle, SDR 11

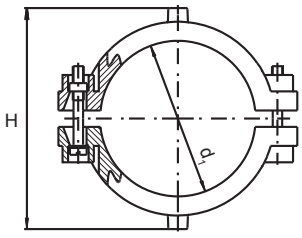
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
900	225	**616396**	172	268	19.000	1	4	3
900	250	**616804**	187	278	20.700	1	4	3
900	280	**616805**	225	268	20.300	1	4	3
900	315	**616806**	254	269	23.000	1	4	3
900	355	**616807**	286	305	27.300	1	4	3
900	400	**616808**	322	275	28.000	1	4	3
1000	225	**616397**	172	270	18.000	1	4	3
1000	250	**616809**	187	280	19.300	1	4	3
1000	280	**616810**	225	270	19.000	1	4	3
1000	315	**616811**	254	270	21.000	1	4	3
1000	355	**616812**	286	305	30.800	1	4	3
1000	400	**616813**	322	278	31.300	1	4	3
1200	225	**616384**	172	270	17.500	1	4	3
1200	250	**616814**	187	284	19.200	1	4	3
1200	280	**616815**	225	270	18.600	1	4	3
1200	315	**616816**	254	270	20.800	1	4	3
1200	355	**616817**	286	305	29.600	1	4	3
1200	400	**616818**	322	278	30.300	1	4	3

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)

d_1	d_2	Order No.	Drilling Ø d_a	L	Weight [kg]	BX	PU	Stock status
1000	160	**616378**	123	300	17.350	1	4	3
1200	160	**616383**	123	300	17.200	1	4	3

RS Repair Saddle, SDR 11



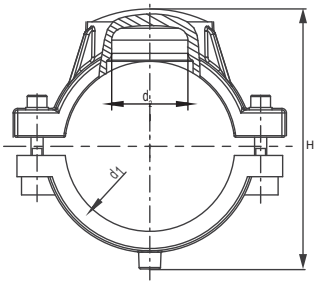
Repair saddle RS SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Saddle component with clamp
- Safety technology

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

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

d_1	Order No.	H	Weight [kg]	BX	PU	Stock status
63	**612519**	106	0.260	20	360	1

RSV Repair and reinforcement saddle, SDR11



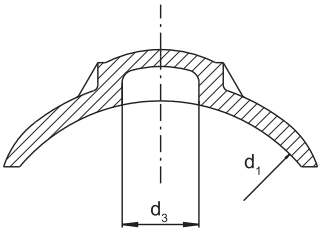
Repair and reinforcement saddle RSV SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- 2 combined saddle components
- Safety technology

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

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

d_1	d_2	Order No.	H	Weight [kg]	BX	PU	Stock status
90	50	**615164**	148	0.920	24	192	1
110	50	**615165**	170	1.162	16	128	1
125	50	**615166**	183	1.360	15	120	1
160	50	**615168**	218	1.670	10	80	1
180	50	**615169**	238	1.810	6	48	1
200	50	**615170**	258	1.820	5	40	1
225	50	**615171**	283	1.900	5	40	1

RS TL Repair saddle for top loading, SDR11



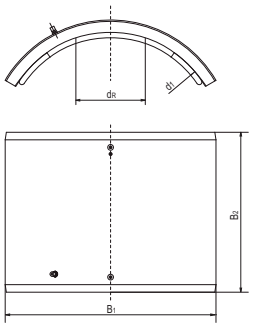
Repair saddle Top-Loading RS TL SDR 11
- Gas, water and H2
- Maximum pressure: Gas 10 bar; Water 16 bar
- Material; PE 100
- Universal clamping option (top loading):
  - Safe clamping with FRIATOP
  - Universal adaptation to pipe diameter
- Safety technology
- DVGW test mark: DV-8611AU2250

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

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

d_1	Order No.	d_3	Weight [kg]	BX	PU	Stock status
250-560	**615397**	50	0.570	10	180	1

RS VL Vacuum-loading repair saddle SDR 17



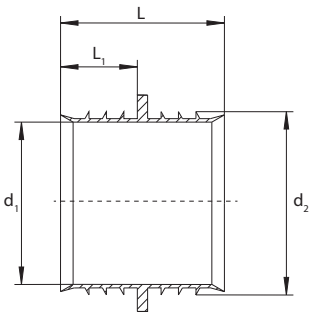
Vacuum-loading repair saddle RS VL SDR 17
- Gas, water and H2
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Vacuum clamping option (vacuum-loading):
  - Safe clamping with vacuum technology
  - Ideal contact with the pipe
  - Without wrapping around the pipe
- Safety technology

Note:
Can only be used with the vacuum pump VACUPUMP (Order No. 613827). Only apply to minor pipe damage. The damage must be located within the repair area and not in the fusion zone.

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water) / 5 bar (gas)

d_1	Order No.	Repair area d_R	Weight [kg]	BX	PU	Stock status
500	**616366**	230	13.600	1	4	3
560	**616367**	230	14.300	1	4	3
630	**616368**	230	15.000	1	4	3
710	**616369**	230	18.900	1	4	3
800	**616370**	230	15.800	1	4	3
900	**616371**	230	17.600	1	4	3
1000	**616372**	230	16.400	1	4	3
1200	**616379**	230	16.250	1	2	3

RW Repair sleeve



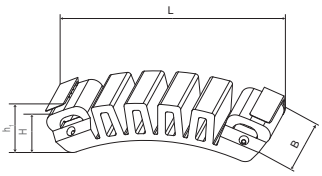
Repair sleeve RW
- For the repair of water-house connection pipes in a pressure-free condition.
- Prevents water from entering the fusion zone of the FRIALEN couplers MB or UB.

Note:
Dimension d means: Repair sleeve for pipe d xy.

Only suitable for pipe SDR 11

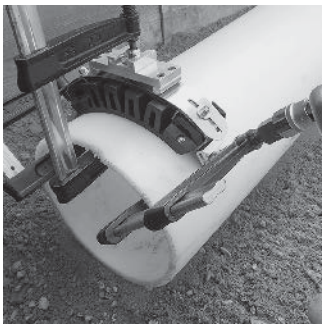
d	d_1	d_2	Order No.	L	L1	Weight [kg]	BX	PU	Stock status
32	21	27	**615127**	35	16	0.004	50	4500	1
40	28	34	**615128**	35	16	0.005	50	2500	1
50	36	42	**615129**	35	16	0.007	50	2500	1
63	46	53	**615130**	47	22	0.012	40	2000	1

FIXBLOC Fixation for absorbing axial thrust and tensile forces



Fixation for absorbing axial thrust and tensile forces FIXBLOC

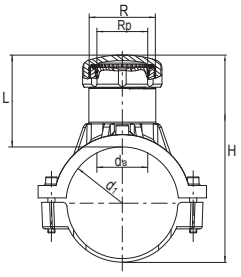
- For the production of a fixed point on a PE pipeline, as a pull-out fuse, installation aid or fixing to pipe supports
- Strength per fixed point up to 40 kN
- Multiple applications possible around the pipe circumference
- Processing is carried out with commercially available tensioning straps with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



PE 100
Maximum shear load per FIXBLOC: 40 kN

d_1	Order No.	H	h1	L	Weight [kg]	BX	PU	Stock status
160 - 1600	**680600**	40	45	220	0.310	15	750	1

SPA Balloon shut off saddle



Balloon shut off saddle SPA
- Gas, water and H2
- Maximum pressure: Water 16 bar; Gas 10 bar
- Material; PE 100 and brass
- Saddle component with clamp
- Safety technology

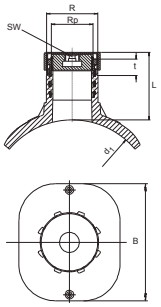
Note:
Brass female and male threads are anchored in the HD-PE in a non-detachable and non-rotatable manner.
Including brass plug with recessed square. For the accommodation of commercially available balloon setting devices.
Access protection for the dome by means of the supplied screw cap or by fusion on a FRIALEN SPAK (for d 63 by cap DK, Order No. 612310).
When using hydrogen, the SPA Balloon shut off saddle is only in conjunction with the cap SPAK (Order No. 612311).

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

	d_1	R	Rp	Order No.	Drilling Ø d_a	H	L	Weight [kg]	BX	PU	Stock status
1)	63	1 1/2”	1 1/8”	**612753**	31	151	80	0.610	20	360	1
	90	2 1/2”	2”	**612677**	56,5	197	104	1.380	16	128	1
	110	2 1/2”	2”	**612750**	56,5	217	104	1.540	12	96	1
	125	2 1/2”	2”	**612751**	56,5	232	104	1.710	12	96	1
	160	2 1/2”	2”	**612752**	56,5	267	104	1.823	8	64	1
	180	2 1/2”	2”	**612754**	56,5	287	104	1.860	7	56	1
	200	2 1/2”	2”	**612755**	56,5	307	104	1.830	6	48	1
	225	2 1/2”	2”	**612756**	56,5	332	104	1.850	5	40	1

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

SPA TL Balloon shut off saddle top-loading



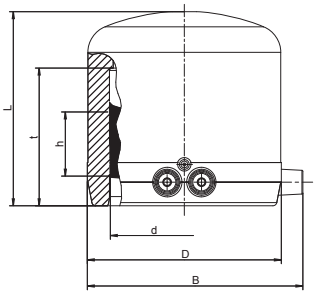
Balloon shut off saddle top-loading SPA TL
- Gas, water and H2
- Maximum pressure: Water 16 bar; Gas 10 bar
- Material; PE 100 and brass
  - Universal clamping option (top loading):
  - Safe clamping with FRIATOP
- Safety technology

Note:
Can only be used with the clamping device FRIATOP (Order No. 613350).
Brass female and male threads are anchored in the HD-PE in a non-detachable and non-rotatable manner.
Including brass plug with recessed square. For the accommodation of commercially available bubble setting devices.
Access protection for the dome by means of the supplied screw cap or by fusion on a FRIALEN SPAK.
When using hydrogen, the SPA balloon shut off saddle is only available in conjunction with the closure cap SPAK (Order No. 612311).

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

d_1	R	Rp	Order No.	Drilling Ø d_a	L	WS [mm]	Weight [kg]	BX	PU	Stock status
250-355 (560)	2 1/2”	2”	**615395**	56,5	115	19	1.358	18	144	1

SPAK Cap for balloon shut off saddles

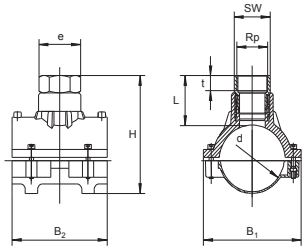


Cap for balloon shut off saddles SPAK
With open-wire technology for optimal heat transfer, large insertion depths, wide fusion zone and cold zone preventing the flow of melt.
When using hydrogen, the cap SPAK with the balloon shut off saddle SPA must be used.

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

d	Order No.	D	L	Weight [kg]	BX	PU	Stock status
75	**612311**	99	99	0.280	20	640	1

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



Valve tapping saddle with transition HD-PE/gunmetal VAM RG
- Gas, water
- Maximum pressure: Water 16 bar; Gas 10 bar
- Material; PE 100 and gunmetal (female thread)
- Saddle component with clamp
- Safety technology
- Metals in contact with water according to UBA recommendation

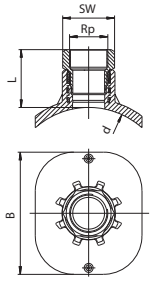
Note:
For accommodating commercially available brass valves.
As a complete solution, we recommend our DAV tapping valve.

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

	d	Rp	Order No.	H	L	Weight [kg]	BX	PU	Stock status
1)	63	1 1/4"	**612794**	146	75	0.730	20	360	3
	63	1 1/2"	**612743**	149	78	0.780	20	360	1
	75	1 1/4"	**615213**	161	76	0.850	15	270	1
	90	1 1/2"	**612798**	172	68	1.370	16	128	1
1)	90	2"	**612778**	199	95	1.560	16	128	3
	110	1 1/2"	**612732**	182	70	1.488	12	96	1
	110	2"	**612733**	205	92	1.684	12	96	1
1)	125	1 1/2"	**612734**	207	68	1.610	12	96	3
	125	2"	**612735**	234	95	1.850	12	96	1
1)	160	1 1/2"	**612728**	242	68	1.800	8	64	3
	160	2"	**612729**	269	95	2.040	8	64	1
	225	2"	**612827**	322	95	1.990	5	40	1

1) Minimum purchase quantity is a packaging unit (BX).

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



Valve tapping saddle with HD-PE/gunmetal adapter VAM RG TL
- Gas, water
- Maximum pressure: Water 16 bar; Gas 10 bar
- Material; PE 100 and gunmetal (female thread)
  - Universal clamping option (top loading):
  - Safe clamping with FRIATOP
- Safety technology
- Metals in contact with water according to UBA (Federal Einviroment Agency, Germany) recommendation

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

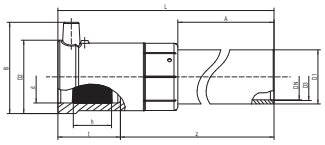
PE 100 SDR 11
Maximum permissible working pressure 16 bar (water) / 10 bar (gas)

d	Rp	Order No.	L	Weight [kg]	BX	PU	Stock status
250 - 560	2"	**615470**	90	1.505	8	144	1

Fusion-capable main pipe dimension up to d 560. Observe the notes on the boarding equipment.
DIN EN 10226-1, ISO 7-1

USTR Transition fitting, steel pipe

d/DN 25/20-75/65



Transition fitting, steel pipe USTR
- Gas and H2
- Maximum pressure: Gas 10 bar
- Material; PE 100 and steel [EN 10220 / EN 10216-1 - P235TR2]
- Safety technology

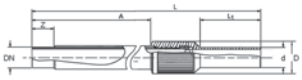
Note:
Anchored the steel side non-detachable and non-rotatable in the PE.
Self-sealing, patented sealing geometry without elastomeric gasket for use in gas applications.
Steel pipe batch characterised by re-stamping of the pipe connection.

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

	d/DN	Order No.	D1	L	Weight [kg]	BX	PU	Stock status
1)	32/25	**612780**	34	387	0.820	15	360	1
1)	40/32	**612781**	42	393	1.070	10	240	1
1)	50/40	**612782**	48	409	1.320	8	192	1
1)	63/50	**612783**	60	410	1.880	6	144	1
1)	90/80	**612784**	89	405	5.350	1	77	1
1)	110/100	**612785**	114	420	8.380	1	54	1
1)	125/100	**612786**	114	425	8.870	1	45	1
	160/150	**612787**	168	484	17.000	1	24	1
	180/150	**615030**	171	500	21.250	1	18	1
	200/200	**612795**	219	480	27.020	1	12	1
	225/200	**612370**	219	505	27.350	1	11	1

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

USTRS Transition fitting, steel pipe, spigot



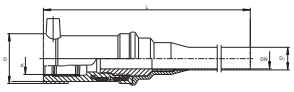
Transition fitting for steel pipe, spigot USTRS
- Gas
- Maximum pressure: Gas 10 bar
- Material; PE 100 and steel [ISO 3183 / API5L]

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

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

d/DN	Order No.	D	L	L1	w	Weight [kg]	BX	PU	Stock status
20/15	**616632**	45	425	80	2,60	0.450	21	630	3
25/20	**616633**	45	460	90	2,60	0.650	21	630	1
32/25	**616634**	51	460	95	3,20	0.950	18	540	1
40/32	**616635**	63	470	100	3,20	1.250	12	360	3
50/40	**616636**	70	480	110	3,20	1.450	8	240	1
63/50	**616637**	89	480	110	3,60	2.150	6	216	1
75/65	**616638**	95	540	130	3,60	2.950	2	98	3
90/80	**616639**	117	580	140	4,00	3.950	2	98	1
110/100	**616640**	150	585	145	5,40	7.050	2	50	1
125/100	**616641**	150	585	150	5,40	7.300	2	50	1
140/125	**616642**	163	580	155	5,00	8.000	1	25	3
160/150	**616643**	210	610	160	5,00	10.500	1	25	1
180/150	**616644**	210	610	170	5,00	11.000	1	25	1
200/200	**616645**	259	630	155	6,30	17.500	1	16	1
225/200	**616646**	259	610	145	6,30	18.000	1	16	1
250/250	**616647**	324	640	140	6,30	30.500	1	8	3
280/250	**616648**	324	640	160	6,30	31.000	1	8	3
315/300	**616649**	368	725	220	8,80	46.500	1	6	1
355/300	**616650**	368	735	260	8,80	48.000	1	6	3
400/400	**616651**	475	770	190	8,80	83.200	1	3	3
500/500	**616652**	590	1050	365	10,00	127.500	1	2	3
630/600	**616653**	735	1100	430	12,70	242.000	1	2	3

UFLG Transition fitting HD-PE/copper (spigot fitting)



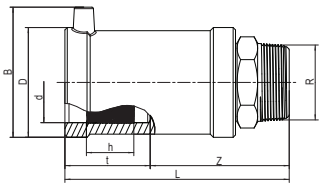
Transition fitting as copper pipe UFLG
- Gas
- Maximum pressure: Gas 5 bar
- Material; PE 100 and copper [SF Cu-F25, DIN EN 1057-R250]
- Safety technology

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

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

d/DN	Order No.	D	D1	L	Weight [kg]	BX	PU	Stock status
32/20	**615733**	49	22	340	0.510	25	750	1

USTN Transition fitting HD-PE/steel with male thread



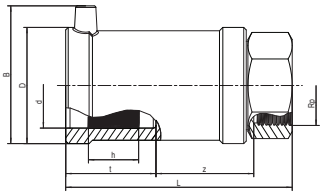
Transition fitting, steel pipe USTN
- Gas and H2
- Maximum pressure: Gas 5 bar
- Material; PE 100 and steel [EN 10278; EN 10277-3 - 11SMn30+C -, thread to EN 10226-1]
- Safety technology

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

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

d	R	Order No.	D	L	Weight [kg]	BX	PU	Stock status
32	1”	**612580**	47	119	0.345	20	1080	1
40	1 1/4”	**612582**	58	131	0.530	20	800	1
50	1 1/2”	**612584**	70	146	0.700	15	600	1
63	2”	**612586**	84	152	1.050	10	400	1

USTM Transition fitting HD-PE/steel with female thread



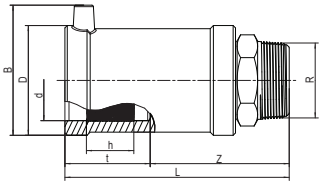
Transition fitting steel pipe USTM
- Gas and H2
- Maximum pressure: Gas 5 bar
- Material; PE 100 and steel [EN 10278; EN 10277-3 - 11SMn30+C -, thread to EN 10226-1]
- Safety technology

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

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

d	Rp	Order No.	D	L	Weight [kg]	BX	PU	Stock status
32	1”	**612570**	47	112	0.340	20	1080	1
40	1 1/4”	**612572**	58	121	0.500	20	800	1
50	1 1/2”	**612574**	70	136	0.650	15	600	1
63	2”	**612576**	84	141	1.010	10	400	1

MUN Transition fitting in HD-PE/brass with male thread



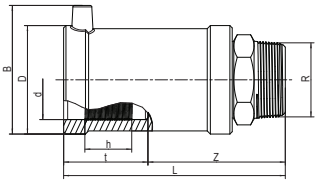
Brass pipe transition fitting MUN
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and brass [EN 12168 - CW617N, thread according to EN 10226-1]
- Safety technology

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

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

d	R	Order No.	D	L	Weight [kg]	BX	PU	Stock status
32	1”	**612712**	47	112	0.310	20	1440	1
32	1 1/4”	**612709**	47	120	0.390	20	1080	1
32	1 1/2”	**612698**	47	121	0.450	15	810	1
40	1”	**612721**	58	123	0.480	20	800	1
40	1 1/4”	**612713**	58	126	0.460	20	800	1
40	1 1/2”	**612718**	58	127	0.520	20	800	1
40	2”	**612725**	58	132	0.680	20	600	1
50	1”	**612719**	70	134	0.620	15	600	1
50	1 1/4”	**612716**	70	136	0.610	15	600	1
50	1 1/2”	**612714**	70	137	0.620	15	600	1
50	2”	**612706**	70	147	0.760	15	600	1
63	1 1/4”	**612722**	84	138	0.910	10	400	1
63	1 1/2”	**612717**	84	137	0.890	10	400	1
63	2”	**612715**	84	142	0.920	10	400	1

MUN V2A Transition fitting HD-PE/V2A with male thread



Transition fitting V2A pipe MUN V2A
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and V2A [EN 10278 ; EN 10088-3 - 1.4305 -X8CrNiS18-9, thread according to EN 10226-1]
- Safety technology

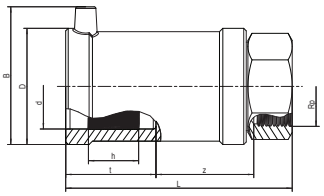
Note:
V2A side is anchored in the PE so that it cannot be rotated.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Other thread dimensions available on request.

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

	d	R	Order No.	D	L	Weight [kg]	BX	PU	Stock status
1)	40	1”	**616516**	58	123	0.460	20	800	3
	40	1 1/2”	**612727**	58	127	0.495	20	800	1
	50	1 1/2”	**612726**	70	137	0.600	15	600	1
	63	1 1/2”	**612705**	84	137	0.865	10	400	1
	63	2”	**612899**	84	142	0.910	10	400	1

1) Minimum purchase quantity is a packaging unit (BX).

MUM Transition fitting HD-PE/gunmetal with female thread



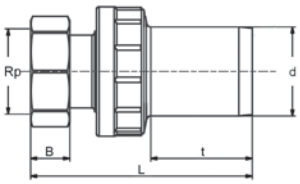
Transition fitting gunmetal pipe MUM
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and gunmetal [EN 1982 - CC499K-GC, thread to EN 10226-1]
- Safety technology

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

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

d	Rp	Order No.	D	L	Weight [kg]	BX	PU	Stock status
32	1”	**612595**	47	112	0.360	20	1080	1
40	1 1/4”	**612596**	58	121	0.520	20	800	1
50	1 1/2”	**612692**	70	136	0.650	15	600	1
63	1 1/2”	**612708**	84	141	1.230	10	300	1
63	2”	**612693**	84	141	1.050	10	400	1

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



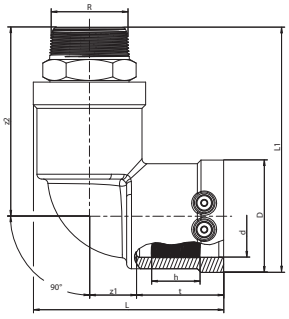
Universal transition adaptor brass pipe UAM ET
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and brass [CW617N or CW612N, ISO 228 thread]

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

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

d	Rp	Order No.	L	WS [mm]	t	Weight [kg]	BX	PU	Stock status
25	3/4”	**616654**	110	30	44	0.160	60	2160	1
32	1”	**616655**	120	36	47	0.330	30	1080	1
40	1 1/4”	**616626**	145	50	56	0.520	20	720	1
50	1 1/2”	**616627**	150	58	57	0.650	16	576	3
63	1 1/2”	**616629**	160	58	63	0.740	9	324	1
63	2”	**616628**	170	67	63	0.920	9	324	3

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



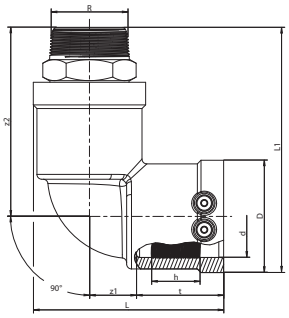
Transition elbow brass pipe WUN 90
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and brass [EN 12168 - CW617N, thread according to EN 10226-1]
- Safety technology

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

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

d	R	Order No.	D	L	Weight [kg]	BX	PU	Stock status
32	1”	**612120**	47	85	0.340	20	1000	1
32	1 1/2”	**612140**	47	94	0.470	20	800	1
40	1”	**612127**	58	102	0.500	15	750	1
40	1 1/4”	**612122**	58	102	0.520	15	750	1
40	1 1/2”	**612121**	58	102	0.560	15	750	1
50	1”	**612119**	70	118	0.680	10	500	1
50	1 1/4”	**612123**	70	118	0.670	10	500	1
50	1 1/2”	**612124**	70	118	0.680	10	500	1
63	1 1/2”	**612125**	84	128	0.980	10	320	1
63	2”	**612126**	84	128	1.000	10	320	1

WUN V2A 90 Transition elbow 90° HD-PE/Stainless steel with male thread



Transition elbow V2A pipe WUN V2A 90
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and V2A [EN 10278 ; EN 10088-3 - 1.4305 -X8CrNiS18-9, thread according to EN 10226-1]
- Safety technology

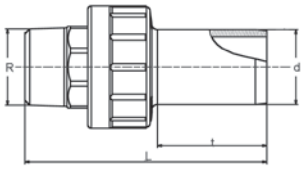
Note:
V2A side is anchored in the PE so that it cannot be rotated.
Self-sealing, patented sealing geometry without elastomeric seal for utilisation in water areas.
Other thread dimensions available on request.

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

	d	R	Order No.	D	L	Weight [kg]	BX	PU	Stock status
	40	1”	**616514**	58	102	0.540	15	750	1
	40	1 1/2”	**612148**	58	102	0.535	15	750	1
	50	1 1/2”	**612118**	70	118	0.650	10	600	1
	63	1 1/2”	**612186**	84	128	0.980	10	320	1
1)	63	2”	**616515**	84	128	0.950	10	320	3

1) Minimum purchase quantity is a packaging unit (BX).

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



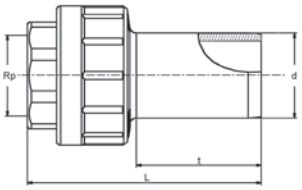
Universal transition adaptor brass pipe UAN
- Water and gas
- Maximum pressure: Water 16 bar, gas 5 bar
- Material; PE 100 and brass [CW617N / CW612N, ISO 228 thread]

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 available 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	Stock status
20	1/2”	**616604**	94	22	41	0.100	70	4200	1
25	3/4”	**616605**	92	28	44	0.150	60	3600	1
32	1”	**616152**	104	35	47	0.240	30	1800	1
40	1 1/4”	**616153**	121	44	56	0.400	20	1200	1
50	1 1/2”	**616154**	123	50	57	0.520	16	960	1
63	1 1/2”	**616610**	136	50	63	0.620	9	540	1
63	2”	**616155**	140	62	63	0.730	9	540	1
75	2 1/2”	**616612**	155	77	70	1.200	10	300	1
90	3”	**616613**	172	90	78	1.600	8	240	1
110	4”	**616614**	200	115	87	2.900	4	120	3
125	4”	**616664**	200	115	92	2.950	4	120	3

UAM Universal transition adaptor HD-PE/brass with female thread



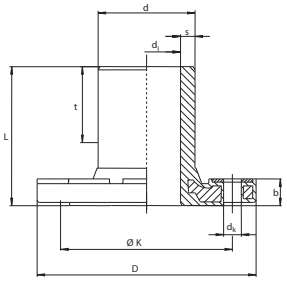
Universal transition adaptor brass pipe UAM
- Water and gas
- Maximum pressure: Water 16 bar, gas 5 bar
- Material; PE 100 and brass [CW617N / CW612N, ISO 228 thread]

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 available 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	Stock status
20	1/2”	**616615**	79	26	41	0.080	80	4800	1
25	3/4”	**616616**	77	32	44	0.120	60	3600	1
32	1”	**616156**	88	40	47	0.190	36	2160	1
40	1 1/4”	**616157**	100	49	56	0.290	20	1200	1
50	1 1/2”	**616158**	102	55	57	0.350	16	960	1
63	1 1/2”	**616621**	115	55	63	0.450	10	600	1
63	2”	**616159**	120	67	63	0.580	10	600	1
75	2 1/2”	**616665**	128	82	70	0.760	10	300	1
90	3”	**616623**	144	94	78	1.030	8	240	1
110	4”	**616624**	161	120	87	1.870	6	180	3
125	4”	**616666**	161	120	92	1.990	6	180	3

EFL Full faced flange (spigot fitting)



Flange adapter and flange EFL
- Water and gas
- Maximum pressure: Water 16 bar, gas 10 bar
- Material; PE 100 and metal insert

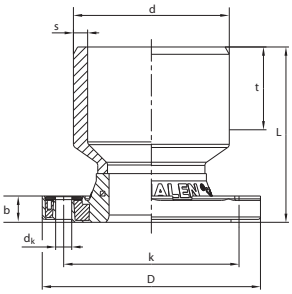
Note:
Metal insert in flange in order to prevent cold flow.
Fused side for processing with FRIALEN couplers MB or UB.
We recommend GST seals.
Note the screw tightening torques after specifying the seal manufacturer or DVS.
Additional washers are required.

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

	d/DN	Order No.	D	d_i	d_k	L	s	Ø k	Holes for screws	Weight [kg]	BX	PU	Stock status
	63/50	**615417**	169	51	17	105	5,8	125	4	1.500	5	250	1
	90/80	**615418**	204	72	17	130	8,2	160	8	2.540	5	160	1
	110/100	**615419**	224	87	17	150	10	180	8	3.310	3	96	1
	125/100	**615605**	224	101	17	160	11,4	180	8	3.280	2	64	1
	160/150	**615421**	288	127	21	190	14,6	240	8	6.140	2	36	1
	180/150	**615927**	288	123	21	200	16,4	240	8	6.660	2	36	1
1)	225/200	**615607**	343	180	21	225	20,4	295	8	9.100	1	27	1

1) Flange drill hole for PN 10

FLR Flange reducer



Flange reducer FLR
- Water
- Maximum pressure: Water 16 bar
- Material; PE 100 and metal insert

Note:
Metal insert in flange in order to prevent cold flow.
We recommend GST seals.
Note the screw tightening torques after specifying the seal manufacturer or DVS.
Additional washers are required.

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

d/DN	Order No.	D	d_k	L	s	Ø k	Holes for screws	Weight [kg]	BX	PU	Stock status
110/80	**616065**	204	17	161	10	160	8	3.500	3	96	1
160/100	**616241**	224	17	180	14,6	180	8	4.060	2	64	1

FRIAFIT sewage system

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

Product range AF 27/23

Things worth knowing about FRIAFIT Sewage System

Product traceability

Each product is equipped with an additional barcode for traceability.

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.

The FRIAFIT spigot saddle ASA MULTI is generally approved under construction regulations. You can find the registration notice in the download area on our homepage.

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.
For PE pipes, a melt flow rate of MFR 190/5 in the range from 0.2 to 1.7 g/10 minutes applies. For components with MFR < 0.20, a confirmation of suitability is required.
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 TL, ASA UNI and ASA VL are designed for pressure pipe systems with a permanent working pressure of maximum 2.5 bar.

Information regarding the pressure bearing capacity can be found in the respective product description.

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 TL, ASA UNI and ASA VL and transition saddle ASA TL KG:
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.

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.

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.

FRIALEN Safety Technology

Open wire design

Large insertion depth and longer fusion zones

Large insertion depth & longer fusion zones

The ideal embedding of exposed heating coils guarantees the fast and safe assembly of our safety fittings.

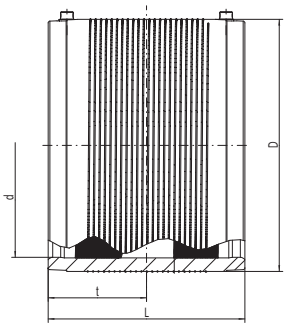
Large insertion depth and longer fusion zones ensures an unrivaled safe and secure jointing process.

*Our unique technology and design delivers the **IDEAL SOLUTION** for safe electrofusion connections.*

FRIATEC

aliaxis

AM Coupler without inner stop, SDR 17



Coupler without inner stop, SDR 17
- For connecting water and sewage pipes made from HD-PE
- Safety technology
- For processing without holding devices
- With pin indicator for visual inspection of the fusion

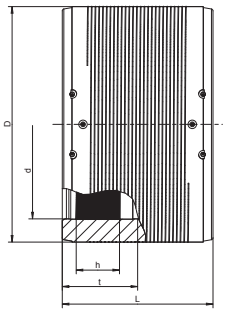
PE 100 SDR 17
Maximum permissible working pressure 10 bar (water / sewage)

	d	Order No.	D	L	t	Weight [kg]	BX	PU	Stock status
	110	**680001**	130	160	80	0.600	24	192	1
	125	**680013**	146	160	80	0.650	22	176	1
	160	**680002**	184	180	90	1.100	12	96	1
	180	**680003**	207	180	90	1.450	8	64	1
	200	**680004**	236	180	90	2.070	1	75	1
	225	**680005**	263	200	100	2.723	1	52	1
	250	**680006**	282	220	110	2.200	1	44	1
	280	**680007**	316	220	110	3.800	1	32	1
	315	**680008**	355	220	110	4.750	1	24	1
	355	**680009**	400	220	110	5.900	1	24	1
	400	**680010**	450	220	110	7.300	1	12	1
	450	**680011**	506	270	135	11.200	1	6	1
1)	500	**680012**	562	270	135	14.450	1	4	1
1) 2)	560	**680018**	630	380	190	24.350	1	2	1
1) 2)	630	**680019**	710	420	210	35.000	1	2	1

1) separate fusion zones
2) with pre-heating technology for optimum gap bridging

For use with close-fit liners, please contact our hotline +49 621 486-1896.

UB SDR 17 Coupler without inner stop, SDR 17



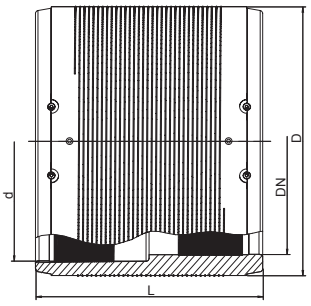
Coupler UB SDR 17 without inner stop
- Gas and water
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Safety technology
- Separate fusion zone
- DVGW test mark: DV-8611AU2250 and DW-8610CN0420

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

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water / sewage)

d	Order No.	B	D	h	L	t	Weight [kg]	BX	PU	Stock status
710	**615994**	802	800	112	442	221	46.000	1	2	1
800	**616290**	902	900	137	500	250	65.900	1	1	1
900	**616345**	1026	1024	110	500	250	91.500	1	1	1
1000	**616403**	1132	1130	129	610	305	128.000	1	1	3
1200	**616416**	1358	1356	155	670	335	205.000	1	1	3

REM SDR 17 Reducer, SDR 17 for Relining



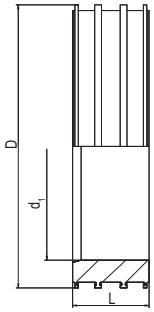
Reducer REM, SDR 17 for Relining
- Gas and water
- Maximum pressure: Gas 5 bar; Water 10 bar
- Material; PE 100
- Problem solver for pipe refurbishment work (relining)
- Safety technology
- Separate fusion zone
- Preheating technology

PE 100 SDR 17
Maximum permissible working pressure 10 bar (water / sewage)

	d/DN	Order No.	B	D	h1	L	t	Weight [kg]	BX	PU	Stock status
1)	110/100	**615569**	144	130	30	160	80	0.700	24	192	1
	160/150	**615571**	199	190	38	180	90	1.600	12	96	1
	315/300	**615576**	355	355	78	300	150	7.700	1	18	1

1) Discontinued article until Q1/2023

ASF Shaft lining adapter for prefabricated concrete sewage inspection chambers



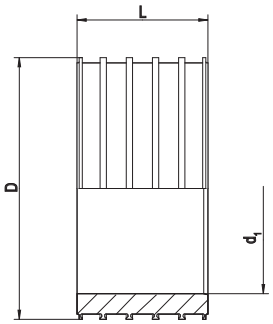
Shaft lining adapter for prefabricated concrete sewage inspection chambers ASF
- Connecting element between concrete prefabricated manhole and sewage insert sleeve AEM
- Reversed anchoring webs (T-section) on the entire circumferential width always ensure a firm and tight fit in the concrete
- Defined 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 to DIN EN 1610

Ø Pipe	d_1	Order No.	D	L	Weight [kg]	BX	PU	Stock status
110	134	**680401**	200	135	1.600	12	96	1
160	190	**680402**	250	135	1.900	8	64	1
180	218	**680403**	280	135	2.300	6	48	1
200	250	**680404**	315	135	2.700	4	32	1
225 250	280	**680405**	355	135	3.700	4	32	1
280	316	**680407**	400	135	4.800	4	32	1
315	357	**680408**	450	135	6.200	1	18	1
355	402	**680409**	500	135	7.400	1	18	1
400	452	**680410**	560	135	9.300	1	12	1
450	502	**680411**	630	135	12.700	3	6	1
500	562	**680414**	670	135	11.300	3	6	1
560	628	**680412**	710	135	8.800	3	6	1
630	713	**680413**	800	135	10.700	3	6	1

Note: If pipe dimensions ≥ d 710 are used, please contact our hotline +49 621 486-1896.

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



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

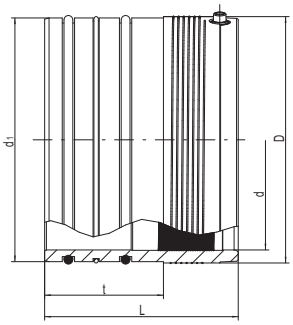
- Connecting element between a brick shaft or concrete shaft and FRIAFIT sewage insert sleeve AEM for installation on the construction site
- Reversed anchoring webs (T-section) on the entire circumferential width ensure a firm and tight fit in the shaft
- Defined internal surface and fitting ratio for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

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

Ø Pipe	d_1	Order No.	D	L	Weight [kg]	BX	PU	Stock status
225 250	280	**680505**	355	250	4.670	2	16	1
280	316	**680507**	400	250	6.650	2	16	1
315	357	**680508**	450	250	8.750	1	9	1
355	402	**680509**	500	250	11.050	1	6	1
450	502	**680511**	630	250	23.400	1	2	1
560	628	**680512**	710	250	16.400	1	2	1
630	713	**680513**	800	250	20.300	1	2	1

Note: If pipe dimensions ≥ d 710 are used, please contact our hotline +49 621 486-1896.

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-swellable sealing ring Q for additional safety
- Connection side to HD-PE pipe with open-wire technology for optimal heat transfer for use without holding devices
- Safety technology
- Level transition to chamber sole

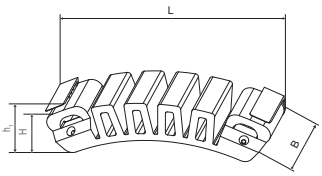
Note:
Also available with NBR seals (handling of substances hazardous to water according to AwSV, application WHG e.g. grease and coalescence separators): Stock status 3.

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

	d	d_1	Order No.	D	L	t	Weight [kg]	BX	PU	Stock status
	110	131	**680201**	133	165	135	0.700	8	144	1
	160	187	**680202**	193	225	135	1.900	8	64	1
	180	215	**680203**	225	220	135	3.100	1	54	1
	200	247	**680204**	250	220	135	3.500	1	56	1
	225	277	**680205**	280	220	135	4.600	1	32	1
	250	277	**680206**	280	220	135	2.500	1	32	1
	280	313	**680207**	315	220	135	3.600	1	32	1
	315	354	**680208**	355	220	135	4.350	1	24	1
	355	399	**680209**	400	220	135	5.800	1	20	1
	400	449	**680210**	450	220	135	8.300	1	12	1
	450	499	**680211**	500	220	135	8.900	1	8	1
	500	559	**680214**	562	220	135	11.050	1	8	1
1)	560	624	**680212**	630	220	135	13.400	1	4	1
1)	630	709	**680213**	710	270	135	22.400	1	3	1

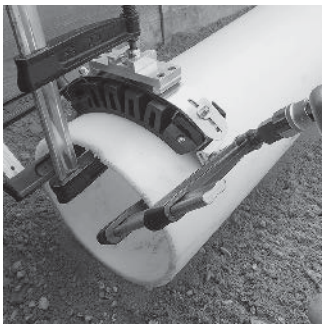
1) with pre-heating technology for optimum gap bridging

FIXBLOC Fixation for absorbing axial thrust and tensile forces



Fixation for absorbing axial thrust and tensile forces FIXBLOC

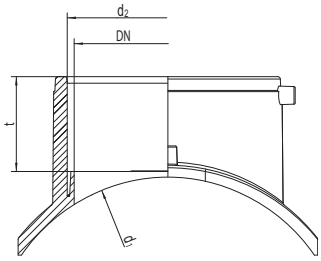
- For the production of a fixed point on a PE pipeline, as a pull-out fuse, installation aid or fixing to pipe supports
- Strength per fixed point up to 40 kN
- Multiple applications possible around the pipe circumference
- Processing is carried out with commercially available tensioning straps with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



PE 100
Maximum shear load per FIXBLOC: 40 kN

d_1	Order No.	B	H	h1	L	Weight [kg]	BX	PU	Stock status
160 - 1600	**680600**	60	40	45	220	0.310	15	750	1

ASA TL Top-loading sewage saddle



Top-loading sewage saddle ASA TL, 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

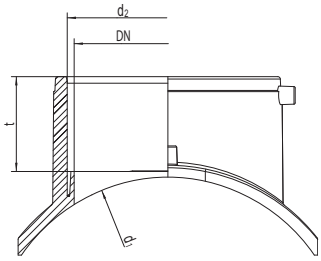
Note:
Can only be used with clamping and drilling device FWFIT (Order No. 613480).
For d 200, special installation instructions must be observed when applying to SDR 33-11 pipes and for d 225-d 315 to SDR 33-26 pipes.
For installation on close-fit liners and pipes d 560/d 630, please contact our hotline +49 621 486-1896.

PE 100
Maximum permissible working pressure 2.5 bar

	d_1	d_2	DN	Order No.	t	Weight [kg]	BX	PU	Stock status
	200	160	150	**682618**	76	0.990	8	64	1
1)	225 250	160	150	**682613**	76	0.943	8	64	1
	280	160	150	**682614**	76	0.802	10	80	1
	315	160	150	**682615**	76	0.986	10	80	1
	355	160	150	**682620**	76	0.952	10	80	1
	400	160	150	**682621**	76	0.894	10	80	1
	450	160	150	**682616**	76	0.882	10	80	1
	500/560/630	160	150	**682622**	76	0.900	10	80	1

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

ASA TL KG Top-loading transition saddle



Transition saddle, top-Loading ASA TL KG, 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

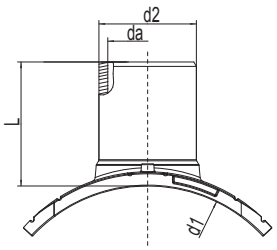
Note:
Can only be used with clamping and drilling device FWFIT (Order No. 613480).
For d 225 - d 315, special installation instructions must be observed when applying to SDR 33 - 26 pipes.

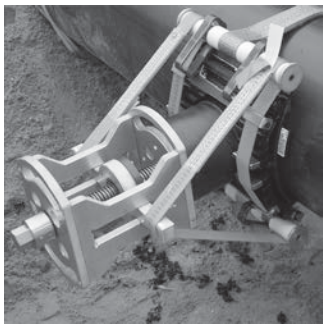
PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

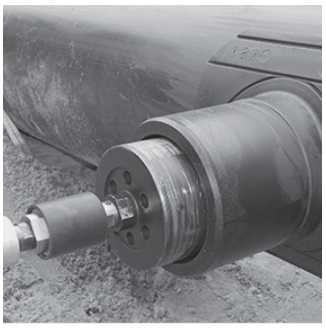
d_1	d_2	DN	Order No.	t	Weight [kg]	BX	PU	Stock status
225	160	150	**682624**	76	1.192	8	64	1
280	160	150	**682625**	76	1.106	10	80	1
315	160	150	**682626**	76	1.106	10	80	1
355	160	150	**682627**	76	1.106	10	80	1
450	160	150	**682628**	76	1.136	10	80	1
500/560/630	160	150	**682629**	76	1.136	10	80	1

For installation on close-fit liners and pipes d 560/d 630, please contact our hotline +49 621 486-1896.

ASA UNI Spigot saddle SDR 17







Spigot saddle with outlet spigot ASA UNI, SDR 17

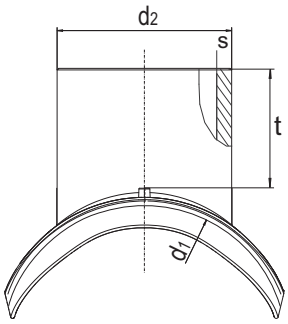
- For the connection of a branch pipe into PE pipes without pressure or under working pressure
- Compact component made of HD-PE saddle with safety technology
- Outlet spigot for processing with FRIAFIT couplers AM
- For variable adaptation to all pipe diameters in the specified range by means of clamping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

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

PE 100
Maximum permissible working pressure 2.5 bar (sewage)

d_1	d_2	Order No.	Weight [kg]	BX	PU	Stock status
630-900	160	**682639**	1.650	5	40	1

ASA VL Vacuum-loading sewage saddle



Sewage saddle vacuum loading ASA VL, 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 be used with the vacuum pump VACUPUMP only (Order No. 613827) and the corresponding plunger PRESSKO (Order No. 613823).
For pressure-free tapping, we recommend our drilling equipment FWAB (Order No. 613835).
The ASA VL assembly aid (Order No. 613371) is also required for cross-dimensional processing.

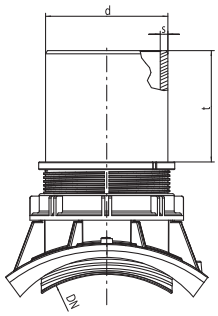
PE 100
Maximum permissible working pressure 2.5 bar (sewage)

d_1	d_2	Order No.	t	s	Weight [kg]	BX	PU	Stock status
355	225	**682640**	144	13,4	3.080	1	4	1
450	225	**682641**	144	13,4	2.900	1	6	1
560	225	**682642**	144	13,4	3.065	1	6	1
630	225	**682643**	144	13,4	3.080	1	6	1

Cross-dimension processing

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

ASA MULTI Connecting spigot to clay and concrete pipes



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

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

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

	Pipe	d	Order No.	B	H	t	s	Weight [kg]	BX	PU	Stock status
1)	STZ DN 250	160	**682650**	265	250	146	9,5	2.700	5	40	1
2)	STZ DN 300/350	160	**682651**	265	250	146	9,5	2.800	5	40	1
3)	Concrete DN 250/300	160	**682651**	265	250	146	9,5	2.800	5	40	1

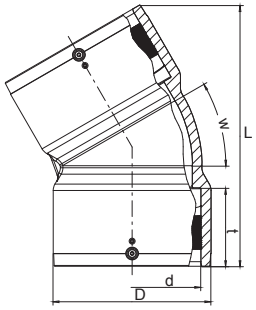
1) Suitable for connection to clay pipes DN 250 N/H (standard and high load series EN 295)
2) Suitable for connection to clay pipes DN 300 / DN 350 N/H (standard and high load series EN 295)
3) Suitable for connection to concrete pipes DN 250 / DN 300 (EN 1916)

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]	Stock status
682660	0.150	1

ABM Sewage bend

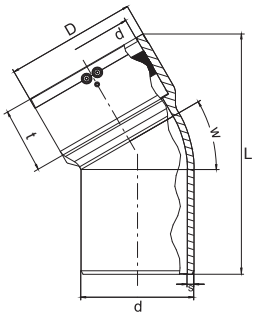


Sewage bend (coupler/coupler) ABM
- Low space requirement through compact design
- The elbow gradations 15°, 30°, 45° enable comfortable services routing
- Couplers integrated on both sides to reduce assembly time with safety technology
- The smooth and hydraulically optimised internal contour provides 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	Stock status
160	15°	**681100**	185	279	92	1.870	6	48	1
160	30°	**681101**	185	306	92	2.100	6	48	1
160	45°	**681102**	185	320	92	2.060	6	48	1

ABMS Sewage bend (one-side spigot end)

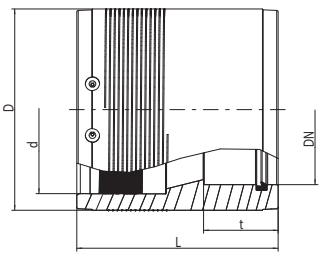


Sewage bend (one-side spigot end) ABMS
- Low space requirement through compact design. The gradations 15°, 30°, 45° enable comfortable services routing
- Fem. connection side with safety technology
- Pipe spigot particularly suitable for direct fusion into the FRIAFIT sewage saddle ASA TL
- By multiple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

PE 100
Maximum permissible working pressure 2.5 bar

d	w	Order No.	D	L	t	s	Weight [kg]	BX	PU	Stock status
160	15°	**681103**	185	286	92	9,5	1.510	6	48	1
160	30°	**681104**	185	329	92	9,5	1.680	6	48	1
160	45°	**681105**	185	325	92	9,5	1.730	6	48	1

AMKG Transition coupler PE-PVC/PP

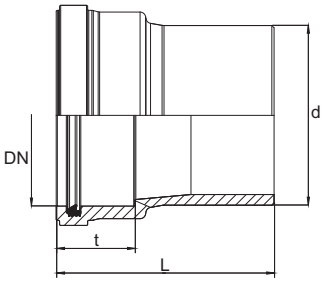


Transition coupler PE-PVC/PP AMKG
- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side with integrated coupler with safety technology
- PVC/PP side as coupler with SBR lip seal with large insertion depth

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d/DN	Order No.	D	L	t	Weight [kg]	BX	PU	Stock status
160/150	**682630**	193	183.5	80	1.780	1	120	1
225/200	**682631**	270	270	100	5.820	1	32	1

UKG Transition piece PE-PVC/PP

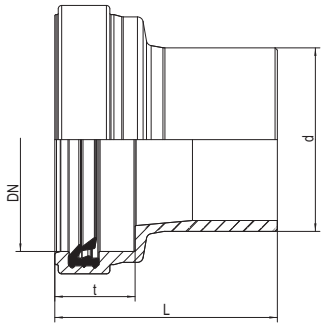


Transition piece PE-PVC/PP UKG
- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to PVC/PP pipes
- HD-PE side can be fused with FRIAFIT AM coupler, bend ABM/ABMS or with FRIAFIT ASA TL sewage saddles
- PVC/PP side as coupler with SBR lip seal with large insertion depth

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d/DN	Order No.	L	t	Weight [kg]	BX	PU	Stock status
160/150	**682617**	194	70	1.070	12	96	1

USTZ Transition piece PE - clay

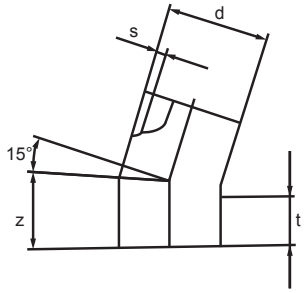


Transition fitting PE - clay USTZ
- Continuous material transfer from HD-PE pipes (SDR 33 - 17) to clay pipes (spigot end)
- HD-PE side can be fused with FRIAFIT AM coupler, bend ABM/ABMS or with FRIAFIT ASA TL sewage saddles
- Clay side as coupler with SBR lip seal with large insertion depth.

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d/DN	Order No.	L	t	Weight [kg]	BX	PU	Stock status
160/150	**682623**	194	70	1.250	2	36	1

ABS 15 15° sewage bend (spigot fitting)

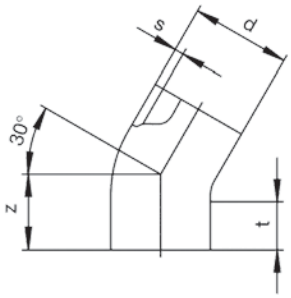


Sewage bend 15°, SDR 17 (spigot fitting) ABS 15
- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d	Order No.	Z	t	s	Weight [kg]	BX	Stock status
110	**681004**	230	170	6,6	1.050	1	3
125	**681005**	250	170	7,4	1.450	1	3
160	**681006**	280	170	9,1	2.780	1	3
180	**681007**	315	250	10,2	3.770	1	3
225	**681008**	370	250	12,8	6.870	1	3
280	**681023**	438	300	15,9	12.500	1	3
355	**681020**	528	300	20,1	24.300	1	3

ABS 30 30° sewage bend (spigot fitting)

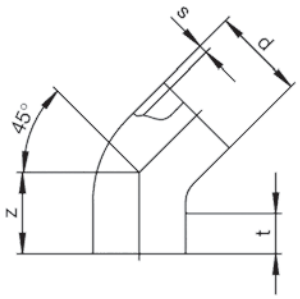


Sewage bend 30°, SDR 17 (spigot fitting) ABS 30
- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d	Order No.	Z	t	s	Weight [kg]	BX	Stock status
110	**681009**	230	170	6,6	1.050	1	3
125	**681010**	250	170	7,4	1.450	1	3
160	**681001**	280	170	9,1	2.780	1	3
180	**681002**	317	250	10,2	3.770	1	3
225	**681003**	371	250	12,8	6.870	1	3
280	**681022**	440	300	15,9	12.500	1	3
315	**681021**	480	300	17,9	17.400	1	3
355	**681019**	520	300	20,1	22.100	1	3

ABS 45 45° sewage bend (spigot fitting)

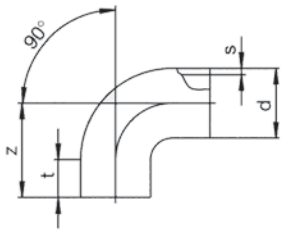


Sewage bend 45°, SDR 17 (spigot fitting) ABS 45
- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d	Order No.	Z	t	s	Weight [kg]	BX	Stock status
110	**681011**	235	170	6,6	1.050	3	3
125	**681012**	250	170	7,4	1.450	3	3
160	**681201**	280	170	9,1	2.780	1	3
180	**681202**	320	250	10,2	3.770	1	3
200	**681203**	349	250	11,4	5.000	1	3
225	**681204**	380	250	12,8	6.870	1	3
250	**681205**	411	250	14,2	9.210	1	3
280	**681206**	448	300	15,9	12.500	1	3
315	**681207**	491	300	17,9	17.400	1	3
355	**681208**	541	300	20,1	24.300	1	3

ABS 90 90° sewage bend (spigot fitting)

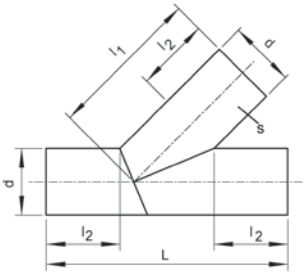


Sewage bend 90°, SDR 17 (spigot fitting) ABS 90
- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d	Order No.	Z	t	s	Weight [kg]	BX	Stock status
160	**681601**	390	100	9,1	3.230	1	3
180	**681602**	420	150	10,2	4.370	1	3
225	**681603**	488	150	12,8	7.440	1	3

ATS 45 Equal branch 45° (spigot fitting)



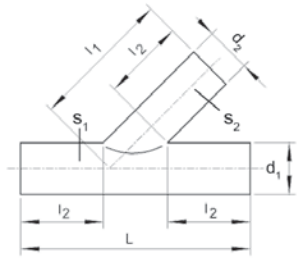
Equal branch with same outlet 45°, SDR 17 (spigot fitting) ATS 45

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d	Order No.	L	l1	l2	s	Weight [kg]	BX	Stock status
110	**682001**	556	333	200	6,6	1.700	1	3
125	**681013**	577	351	200	7,4	2.300	1	3
160	**682002**	626	393	200	9,5	4.100	1	1
180	**682003**	655	417	200	10,7	5.400	1	3
200	**682004**	783	491	250	11,9	8.000	1	3
225	**682005**	818	522	250	13,4	10.500	1	3
250	**682006**	954	602	300	14,8	15.100	1	3
280	**682007**	996	638	300	16,6	19.700	1	3
315	**682008**	1145	730	350	18,7	28.800	1	3
355	**682009**	1202	779	350	21,1	38.300	1	3

ATSR 45 Unequal branch 45° (spigot fitting)



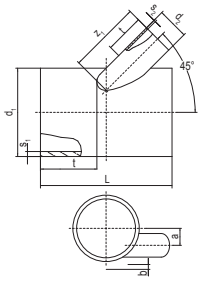
Unequal branch with reduced outlet 45°, SDR 17 (spigot fitting) ATSR 45

- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM
- Black pipe colour with bright inner surface (subject to availability)

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d_1	d_2	Order No.	L	l1	l2	s_1	s_2	Weight [kg]	BX	Stock status
160	110	**682201**	556	368	200	9,5	6,6	3.100	1	3
225	160	**682203**	726	489	250	13,4	9,5	8.000	1	3
280	160	**682204**	826	578	300	16,6	9,5	13.100	1	3
280	225	**682205**	918	610	300	16,6	13,4	16.300	1	3
315	160	**682206**	926	653	350	18,7	9,5	18.100	1	3
315	225	**682207**	1018	685	350	18,7	13,4	21.900	1	3
355	160	**682208**	926	681	350	21,1	9,5	22.400	1	3
355	225	**682209**	1018	714	350	21,1	13,4	26.700	1	3
450	160	**682210**	926	748	350	26,7	9,5	34.800	1	3

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



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

- HD-PE fitting with off-center outlet for processing without holding devices with FRIAFIT couplers AM.
- Black pipe colour with bright inner surface (subject to availability)

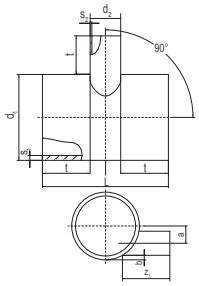
PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610
in flow direction right

d_1	d_2	Order No.	L	t	z_1	s_1	s_2	a	b	Weight [kg]	BX	Stock status
315	160	**682301**	630	200	320	17,9	9,1	50	30	13.400	1	3
315	225	**682302**	720	200	320	17,9	12,8	20	25	17.400	1	3
355	160	**682303**	630	200	335	20,1	9,1	68	30	16.600	1	3
355	225	**682304**	720	200	335	20,1	12,8	40	25	20.900	1	3
450	160	**682305**	670	200	370	25,5	9,1	115	30	26.600	1	3
450	225	**682306**	760	200	370	25,5	12,8	87	25	32.300	1	3
560	160	**682307**	670	200	410	31,7	9,1	170	30	39.900	1	3
560	225	**682308**	760	200	410	31,7	12,8	142	25	47.600	1	3
630	160	**682309**	670	200	440	35,7	9,1	205	30	49.900	1	3
630	225	**682310**	760	200	440	35,7	12,8	177	25	59.100	1	3

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610
in flow direction left

d_1	d_2	Order No.	L	t	z_1	s_1	s_2	a	b	Weight [kg]	BX	Stock status
315	160	**682311**	630	200	320	17,9	9,1	50	30	13.400	1	3
315	225	**682312**	720	200	320	17,9	12,8	20	25	17.400	1	3
355	160	**682313**	630	200	335	20,1	9,1	68	30	16.600	1	3
355	225	**682314**	720	200	335	20,1	12,8	40	25	20.900	1	3
450	160	**682315**	670	200	370	25,5	9,1	115	30	26.600	1	3
450	225	**682316**	760	200	370	25,5	12,8	87	25	32.300	1	3
560	160	**682317**	670	200	410	31,7	9,1	170	30	39.900	1	3
560	225	**682318**	760	200	410	31,7	12,8	142	25	47.600	1	3
630	160	**682319**	670	200	440	35,7	9,1	205	30	49.900	1	3
630	225	**682320**	760	200	440	35,7	12,8	177	25	59.100	1	3

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



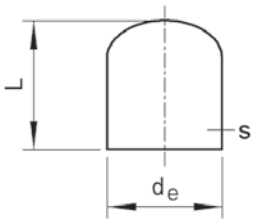
Unequal branch 90° with off-center outlet, SDR 17 (spigot fitting) ATSRS 90

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

PE 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d_1	d_2	Order No.	L	t	z_1	s_1	s_2	a	b	Weight [kg]	BX	Stock status
315	160	**682401**	565	200	280	17,9	9,1	50	30	12.100	1	3
315	225	**682402**	630	200	280	17,9	12,8	20	25	15.300	1	3
355	160	**682403**	660	200	290	20,1	9,1	68	30	17.000	1	3
355	225	**682404**	730	200	290	20,1	12,8	40	25	20.700	1	3
450	160	**682405**	660	200	315	25,5	9,1	115	30	25.600	1	3
450	225	**682406**	730	200	315	25,5	12,8	87	25	30.700	1	3
560	160	**682407**	660	200	340	31,7	9,1	170	30	39.000	1	3
560	225	**682408**	730	200	340	31,7	12,8	142	25	45.300	1	3
630	160	**682409**	660	200	360	35,7	9,1	205	30	48.800	1	3
630	225	**682410**	730	200	360	35,7	12,8	177	25	56.200	1	3

CDE Sewage end cap (spigot fitting)

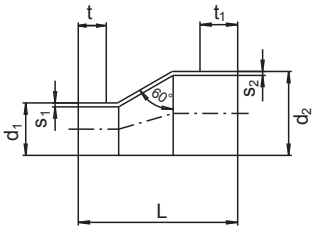


Sewage end cap (spigot fitting) CDE
- HD-PE fitting for processing without holding devices with FRIAFIT couplers AM.

PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

de	Order No.	L	s	Weight [kg]	BX	Stock status
110	**73409636110**	127	6,6	0.275	18	1
125	**73409636125**	127	7,4	0.360	18	2
160	**73409636160**	155	9,5	0.740	6	1
180	**73409636180**	166	10,7	0.975	12	2
225	**73409636225**	203	13,4	1.805	6	1
280	**73409636280**	238	16,6	3.285	6	1
315	**73409636315**	258	18,7	4.610	2	1
355	**73409636355**	281	21,1	6.610	2	2
400	**73409636400**	310	23,7	9.185	2	3

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 80 / PE 100
Maximum permissible test pressure 0.5 bar to DIN EN 1610

d_1	d_2	Order No.	L	t	t_1	s_1	s_2	Weight [kg]	BX	Stock status
110	125	**681018**	264	85	85	6,6	7,4	1.000	1	3
110	160	**681801**	310	90	95	6,6	9,5	1.200	1	3
160	225	**681802**	404	100	150	9,5	13,4	2.530	1	3
200	225	**681804**	440	100	250	11,9	12,8	4.100	1	3
225	280	**681810**	540	150	250	13,4	16,6	5.460	1	3

FRIATOOLS Technical Equipment

Convenient and durable devices and tools for pipe connections.

Product range EZ 36/23

Things worth knowing about FRIATOOLS Technical Equipment

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 recommand 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 FRIAMAT APP

FRIAMAT 7 prime and FRIAMAT prime eco are equipped with a Bluetooth® interface.
Please check at www.aliaxis.de/en/services/digital-apps, if the Bluetooth connectivity is provided in the intended region of operation, as specific approvals may be required.

FRIAMAT 7 prime and FRIAMAT 7 basic

The 7th FRIAMAT generation fulfils your needs even better

We have now enhanced our FRIAMAT fusion units, which have been tried and tested many times, up to the latest technological level and have made them “fit for the future”. To make it easier for you to work - in every respect. This new low weight device provides high performance, easier/ more convenient operation and documentation.

FRIAMAT 7 basic is one of our most successful models, which we have comprehensively revised to include features such as: Flow-optimized active cooling, rugged housing, bright colour TFT display, intuitive user guidance and much more.

FRIAMAT 7 prime also offers you the full range of digital functions for documentation and advanced traceability alongside the new Bluetooth interface and FRIAMAT app. With the optional 1D/2D scanner, the new FRIAMAT is also prepared to read out and process 2D barcodes according to ISO 12176-5. This enables you to capture all the information required for fusing, including traceability data and advanced product information with just one scan operation.

FRIAMAT 7 with the tried and tested mini scanner

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, reader wand or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 12.8 kg

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

Version	Order No.	Stock status
With reader wand	**613134**	1
With mini scanner	**611134**	1
With 1D/2D scanner	**614134**	1

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
- State-of-the-art toroidal core technology with active cooling.
- Bright colour TFT display
- With mini scanner, reader wand or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 18.0 kg

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

Version	Order No.	Stock status
With reader wand	**613124**	1
With mini scanner	**611124**	1
With 1D/2D scanner	**614124**	3

WORKFLOW — WorkFlow - The digital assistant for construction project management

NEW

Digital assistant for construction project management WorkFlow:
- Simplifies, accelerates and expands documentation incl. images, geodata and comments
- Enables cross-company work in projects
- Convenient operation of the FRIAMAT fusion unit with Bluetooth interface
- Convenient data editing in the cloud application
- User authorisations
- Extended data export formats (.csv, .pdf, DVS protocol)
- Meets the requirements of ISO 12176-5 (2D barcode)

Workflow is currently only available in some countries, but we are constantly working on expanding the availability.

Article description	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**

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, reader wand or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 12.8 kg

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

Version	Order No.	Stock status
With reader wand	**613130**	1
With mini scanner	**611130**	1
With 1D/2D scanner	**614130**	1

FRIAMAT basic eco Fusion unit without documentation function

Powerful universal fusion unit FRIAMAT basic eco
- State-of-the-art toroidal transformer technology with active cooling
- Bright colour TFT display
- With mini-scanner, reader wand or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 18.0 kg

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

Version	Order No.	Stock status
With reader wand	**613120**	1
With mini scanner	**611120**	1
With 1D/2D scanner	**614120**	3

FRIAMAT print eco Fusion unit with simple documentation function

Powerful universal fusion unit FRIAMAT print eco
- Documentation function (only fusion data)
- 1,000 fusion protocols
- Output via USB interface
- State-of-the-art toroidal core technology with active cooling.
- Bright colour TFT display
- With mini scanner, reader wand or 1D/2D scanner (2D barcodes according to ISO 12176-5)
- Extra long fusion cable (4 m)
- Extra long power cable (5 m)
- Weight approx. 18.0 kg

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

Version	Order No.	Stock status
With mini scanner	**611122**	1
With reader wand	**613122**	1
With 1D/2D scanner	**614122**	3

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.

Order No.	Stock status
624005	1

FWLESST Reader wand

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

Order No.	Stock status
623645	1

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 all FRIAMAT fusion units in this current catalogue for FRIATOOLS

Order No.	Stock status
624006	1

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.	Stock status
624023	1

FRIATRACE FRIATRACE database software

Software for further processing of fusion data including traceability data (traceability)
- Suitable for:
  - Windows XP
  - Windows 7
  - Windows 8.1
  - Windows 10
- For FRIAMAT fusion units with traceability and documentation function
- With database function (all fusion data in a database)
- For individual evaluation, copying, sorting, searching, formatting, editing, etc.
- FRIATRACE database software consisting of:
  - FRIATRACE CD-ROM
  - Connection cable PC fusion unit
- FRIATRACE combo package consisting of:
  - FRIATRACE CD-ROM
  - Memory Stick (2GB)

Note:
The FRIATRACE database software will be discontinued in the course of 2023 and replaced by a digital offer available on www.aliaxis.de.

Article description	Order No.	Stock status
FRIATRACE database software	**613280**	1
FRIATRACE combination package	**624026**	1

PA USB FRIAMAT Parallel USB Adapter

For connecting a printer with USB Type B port.
- For FRIAMAT fusion units from year 2000 with parallel interface
- Direct printing of fusion data on a USB printer
- GDI printers are not supported.

Note:
Power is supplied via the supplied power supply (adapter included).

Order No.	Stock status
613263	1

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.	Stock status
623101	3

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.	Stock status
623100	3

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.	Stock status
624003	1

ALTK FMT Transport boxes

For transporting and storing FRIAMAT fusion units.

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

Version	Order No.	Stock status
FRIAMAT fusion units from model year 2018	**627600**	1

CONTACT4 Socket contacts 4.0 mm

Socket contacts 4.0 mm
- For all FRIAMAT fusion units

Order No.	Stock status
624529	1

ADFL Adaptor for flat contacts

For mounting on the socket contact 4.0 mm
- For all FRIAMAT fusion units
- Adaptor for flat contacts

Order No.	Stock status
613236	1

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

Order No.	Stock status
613237	1

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 safe-guard 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 63)
- Scraper tools for saddle areas and pipe ends (d 63 - d 1000)
- Coordinated accessories and comprehensive service for all 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 ovally 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).

Article description	Dimension	SDR	Order No.	Stock status
FWSG RA 25	d 25	11	**613576**	1
FWSG RA 32	d 32	11	**613580**	1
FWSG RA 40	d 40	11	**613581**	1
FWSG RA 50	d 50	11	**613582**	1
FWSG RA 63	d 63	11	**613583**	1
Crank handle	d 25 - d 63		**613579**	1
FWSG RA case	d 32 - d 63		**613586**	1

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

Article description	Dimension	Order No.	Stock status
FWSG 63	d 20 - d 63	**613408**	1

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

Article description	Dimension	Order No.	Stock status
FWSG 225	d 75 - d 225	**613409**	1

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

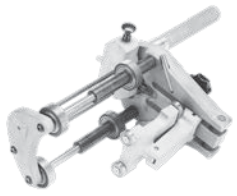
Article description	Dimension	Order No.	Stock status
FWSG 400	d 75 - d 400	**613410**	1

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

Article description	Dimension	Order No.	Stock status
FWSG 710 L	d 250 - d 710	**613642**	1

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

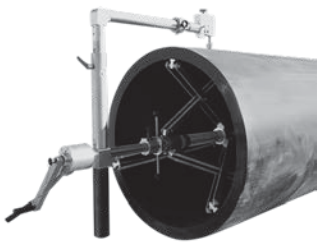
Article description	Dimension	Order No.	Stock status
FWSG 710 S	d 250 - d 710	**613639**	1

FWSG 900 L — Scraper tool for pipes d 630 - d 900 (25” - 36” IPS)

Cross-dimensional scraper tool FWSG 900 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 630 - d 900 (25” - 36” 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

Article description	Dimension	Order No.	Stock status
FWSG 900	d 630 - d 900	**613644**	3

FWSG XL — Large scraper tool for pipes d 800 to d 1200



Cross-dimension scraper tool FWSG XL
- Safe removal of the oxide layer from HD-PE and PE-Xa pipes SDR 11 - SDR 33
- Scraper blade made of hard metal with 2 cutting edges (double life)
- Universal scraper areas from d 800 - d 1200
- Centrally supported drive unit via hand crank
- 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

Article description	Dimension	Order No.	Stock status
FWSG XL	d 800 - d 1200	**613645**	3

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

Article description	Dimension	Order No.	Stock status
FWSG SE 63	d 63	**613562**	1
FWSG SE 75	d 75	**613563**	1
FWSG SE 90	d 90	**613564**	1
FWSG SE 110	d 110	**613565**	1
FWSG SE 125	d 125	**613566**	1
FWSG SE 140	d 140	**613567**	1
FWSG SE 160	d 160	**613568**	1
FWSG SE 180	d 180	**613569**	1
FWSG SE 200	d 200	**613570**	1
FWSG SE 225	d 225	**613571**	1
FWSG SE 250	d 250	**613572**	1
FWSG SE 280	d 280	**613573**	1
FWSG SE 315	d 315	**613574**	1

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

Article description	Dimension	Order No.	Stock status
FWSG SE 2 IPS	2 IPS	**613512**	1
FWSG SE 3 IPS	3 IPS	**613513**	1
FWSG SE 4 IPS	4 IPS	**613514**	1
FWSG SE 6 IPS	6 IPS	**613515**	1
FWSG SE 8 IPS	8 IPS	**613516**	1
FWSG SE 12 IPS	12 IPS	**613519**	1

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

Article description	Dimension	Order No.	Stock status
FWSK	d 250 - 1000	**613383**	1

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.

Article description	Type of device	Marking	Order No.	Stock status
FWSGE 3	FWSG 225 / FWSG 315 (up to model year Q3/2019)	Red coloured	**613322**	1

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.

Article description	Type of device	Marking	Order No.	Stock status
FWSGE 4	FWSG 63 (up to model year 2018)	Green coloured	**613323**	1

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

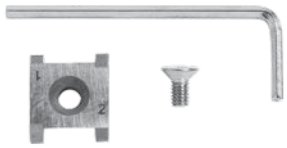
Article description	Type of device	Marking	Order No.	Stock status
FWSGE 5	FWSG 710 L/S and FWSG 900 L	Blue coloured	**613324**	1

FWSGE 6 Replacement blade for scraper tools FWSGS 110 and FWSGS 180

Replacement blade made of hard metal FWSGE 6
- 1 piece Replacement blade
- 2 piece Torx screw
- 1 piece Torx wrench

Article description	Type of device	Order No.	Stock status
FWSGE 6	FWSGS 110 / FWSGS 180	**613325**	1

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

Article description	Type of device	Order No.	Stock status
FWSGE 8	FWSG SE (all types)	**613327**	1

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

Article description	Type of device	Order No.	Stock status
FWSGE 10	FWSG RA 32 and 40	**613329**	1

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

Article description	Type of device	Order No.	Stock status
FWSGE 11	FWSG RA 50 and 63	**613330**	1

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

Article description	Type of device	Order No.	Stock status
FWSGE 12	FWSG XL	**613331**	1

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

Article description	Type of device	Order No.	Stock status
FWSGE 13	FWSG RA 25	**613332**	1

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.

Article description	Type of device	Marking	Order No.	Stock status
FWSGE 14	FWSG 225/FWSG 400 (from model year 2019)	white coloured	**613335**	1

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.

Article description	Type of device	Marking	Order No.	Stock status
FWSGE 15	FWSG 63 (from model year 2018)	Orange coloured	**613336**	1

FWSGE K Replacement blades for scraper chain FWSK

Replacement blades for scraper chain

Article description	Type of device	Order No.	Stock status
FWSGE K	FWSK	**613337**	1

ALTK FWSG Transport boxes

For transporting and storing scraper tools.

Note
Transport boxes for older scraper tools on request.

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

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.

Article description	Order No.	Stock status
Hand scraper	**613300**	1
Replacement blade	**613270**	1

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

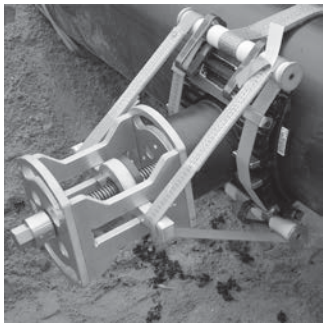
Article description	Order No.	Stock status
Hand scraper for large pipes	**613299**	1

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.	Stock status
613350	1

UNITOP Clamping unit for spigot saddles SA UNI / ASA UNI



For the assembly of:
- FRIALEN Spigot Saddles SA UNI d 250 - d 900 with outlet d 90, d 110, d 125 and d 160
- FRIAFIT Spigot Saddles ASA UNI d 630 - d 900 with outlet d 160 / SDR 17.

Note:
In conjunction with the UNITOP clamping device, additional elbow adaptors ADWL for socket contacts 4.0 mm are required for fusion units equipped with straight-line fusion plugs (Order No. 613241). Not required for FRIAMAT fusion units.

For the correct mounting of the FRIAFIT Spigot Saddle ASA UNI d 630 - d 900 with outlet d 160 / SDR 17, an additional adaptor (Order No. 613839) will be required for drilling. This adapter must be ordered separately.

Article description	Order No.	Stock status
UNITOP clamping device from d 250 - d 900	**613385**	1
ADWL elbow adaptor for socket contacts 4.0 mm	**613241**	1
Clamp adaptor for the outlet of the ASA UNI d 160 spigot saddles	**613839**	1

VACUPUMP Vacuum pump with connection pipes

For assembly on
- FRIALEN spigot saddles SA VL,
- FRIALEN repair saddles RS VL,
- FRIAFIT Sewage saddles ASA VL.

Comprising:
- Vacuum pump 230V
- Gauge
- Connection pipes.

Note
No additional site compressor is required for operation. Delivery in transport box.
Plungers (PRESSKO) are required for the installation of FRIALEN spigot saddles SA VL and FRIAFIT sewage saddles ASA VL.

Article description	Order No.	Stock status
Vacuum pump 230 V	**613827**	1
Vacuum pump 110V	**613828**	3

PRESSKO Plunger

Nominal size-related plunger with stop plate and plug-in nipple NW 7.2 for assembling on:
- FRIALEN spigot saddle SA VL with outlet d 160, d 225 or d 250
- FRIAFIT sewage saddle ASA VL with outlet 225 and for connecting the VACUBOX.

Note:
Plunger for other outlet dimensions up to d 400 on request.

Version	Order No.	Stock status
FRIALEN SA VL d 160	**613821**	1
FRIALEN SA VL d 225	**613822**	1
FRIALEN SA VL d 250 / FRIAFIT ASA VL d 225	**613823**	1
FRIALEN SA VL d 280	**613853**	1
FRIALEN SA VL d 315	**613854**	1
FRIALEN SA VL d 355	**613855**	1
FRIALEN SA VL d 400	**613837**	1

FWAB Drilling equipment

FWAB drilling equipment for drilling HD-PE pipes in a pressure-free condition:
- FRIALEN spigot saddles SA VL
- FRIALEN spigot saddles SA UNI
- FRIAFIT spigot saddles ASA 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 XL 160)

Article description	Outlet dimension	Order No.	Stock status
FWAB 90 for FRIALEN SA UNI	d 90	**613832**	1
FWAB 110 for FRIALEN SA UNI	d 110	**613833**	1
FWAB 125 for FRIALEN SA UNI	d 125	**613834**	1
FWAB 160 for FRIALEN SA UNI	d 160	**613829**	1
FWAB 225 for FRIALEN SA VL	d 225	**613830**	1
FWAB 250 for FRIALEN SA VL	d 250	**613831**	3
FWAB 280 for FRIALEN SA VL	d 280	**613850**	3
FWAB 315 for FRIALEN SA VL	d 315	**613851**	1
FWAB 355 for FRIALEN SA VL	d 355	**613852**	1
FWAB 400 for FRIALEN SA VL	d 400	**613836**	3
FWAB 160 for FRIAFIT ASA UNI	d 160	**613838**	1
FWAB ASA 225 for FRIAFIT ASA VL	d 225	**613835**	1

FWFIT Clamping and drilling unit for FRIAFIT sewage saddles (ASA TL) and transition saddles (ASA TL KG)

Combined clamping and drilling device FWFIT, universally applicable for:
- FRIAFIT ASA TL sewage saddles
- FRIAFIT transition saddle ASA TL KG
- For clamping and producing the necessary joining pressure during fusion
- For drilling through the outlet in the pressure-free condition after expiry of the prescribed cooling time

Order No.	Stock status
613480	1

ASATOP — Clamping unit for close-fit liner DN 200 - DN 500 (ASA TL) and transition saddle (ASA TL KG)

Clamping tool ASATOP for processing from:
- FRIAFIT sewage saddles ASA TL
- FRIAFIT ASA TL KG transition saddles, especially for HD-PE close-fit liners DN 200 - DN 500 and for HD-PE pipes d 630
- For clamping and producing the necessary joining pressure during fusion

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

Note:
The FWFIT clamping device and drilling device (Order No. 613480) will be required for drilling.

Order No.	Stock status
613370	3

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 equipment FWAB XL 225 (Order No. 613830) is required for drilling.
When utilising the repair set up to d 225, then FRIALEN repair and reinforcing saddles VVS are required. From d 250, FRIALEN locking clamps VSC TL or FRIALEN repair saddles RS VL will be required.

Article description	Dimension	Order No.	Stock status
Universal repair set	d 90 - d 900	**613701**	1
Extension kit	d 90 - d 900	**613715**	1
Repair balloon Type 1	d 90 - d 180	**613702**	1
Repair balloon Type 2	d 200 - d 315	**613703**	1
Repair balloon Type 3	d 355 - d 450	**613704**	1
Repair balloon Type 4	d 500 - d 560	**613705**	1
Repair balloon Type 5	d 630	**613706**	1
Repair balloon Type 6	d 710	**613707**	1
Repair balloon Type 7	d 800	**613708**	1
Repair balloon Type 8	d 900	**613709**	1
Transport box		**613700**	1

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.

Article description	Order No.	Stock status
CLAMP63	**613020**	1
CLAMP63L	**613034**	1

CLAMP 180 Alignment clamp d 63 - d 180

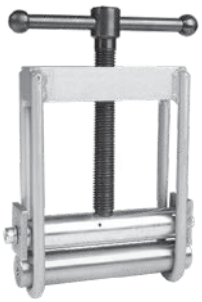
Pipe retaining clamp CLAMP 180 with elbow adjustment (45° / 90°) and 2 clamping elements for:
- Fittings,
- Reductions
- Elbow 45° and 90° in d 63, d 90, d 125 and d 180

- 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)

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

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



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

Article description	Dimension	SDR	Order No.	Stock status
SQM63	d 20 - d 63	11	**613025**	1
SQM125	d 63 - d 90 d 90 - d 125	11 / 17,6	**613026**	1

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.

Article description	Dimension	SDR	Order No.	Stock status
SQH180	d 63 - d 180	11 / 17,6	**613028**	1

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)

Article description	Dimension	Order No.	Stock status
RRC90	d 63, d 75, d 90	**613029**	3
RRC110	d 110	**613030**	3
RRC125	d 125	**613031**	3
RRC160	d 160	**613032**	3
RRC180	d 180	**613033**	3

FWXR — Manual round clamp for pipes d 63 - d 250

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

(Fig. shows FWXR-S1)

Article description	Dimension	Order No.	Stock status
FWXR-S1	d 32, d 40, d 50, d 63	**613416**	1
FWXR-S2	d 90, d 110	**613431**	1
FWXR-S3	d 125, d 160	**613439**	1
FWXR-S4	d 180, d 200	**613443**	3
FWXR-S5	d 225, d 250	**613444**	3

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).

Dimension	Order No.	Stock status
d 280	**613452**	3
d 315	**613461**	3
d 355	**613462**	3
d 400	**613463**	3
d 450	**613464**	3
d 500	**613465**	3
d 560	**613467**	3
d 630	**613466**	3
d 710	**613468**	3
d 800	**613460**	3
d 900	**613458**	3

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.

Dimension	Order No.	Stock status
d 800 - d 1200	**613457**	3

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.

Article description	Dimension	Order No.	Stock status
Pipe cutter d 63	d 20 - d 63	**613040**	1
Pipe cutter d 140	d 50 - d 140	**613041**	1
Replacement cutting wheel d 63	d 20 - d 63	**613042**	1
Replacement cutting wheel d 140	d 50 - d 140	**613043**	1

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.

Article description	Dimension	Order No.	Stock status
Pipe shears d 40	d 20 - d 40	**613044**	1
Pipe shears d 63	d 20 - d 63	**613046**	1

FWPM FRIALEN / FRIAFIT marker (silver)

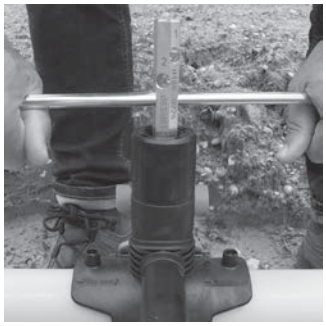
For labelling HD-PE and PE-Xa pipes.
- Colour silver
- Content per pack: 10 pieces.

Order No.	Stock status
613069	1

FWSS Activating key for tapping tees

For drill actuation, depending on the diameter (d1) of the FRIALEN tapping tees
- d1: 40 - 225 wrench size WS 17 mm for all DAA RED SNAP, DAA Classic d 50 - d 75 and DAP d 63.
- d1: 90 - 315 wrench size WS 19 mm for DAA TL and DAA Classic d 90 - d 225 and DAP d 90 - d 225.

d_1	WS [mm]	Order No.	WS [mm]	Stock status
40-225	17	**613246**	17	1
90-315	19	**613250**	19	1



FWSR T Ratchet for activating key for tapping tees DAA RED SNAP

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

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

Article description	Order No.	Stock status
Ratchet 1/2″ with socket wrench SW17 mm	**613615**	1

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

Article description	Order No.	Stock status
Ratchet 1/2″	**613610**	1
Socket key SW 19 mm	**613605**	1
Socket key SW 17 mm	**613606**	1

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

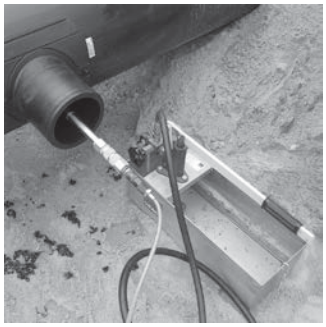
Pressure test adaptor for use with FRIALEN tapping tees:
- DAP
- DAA TL
- DAA Classic from d 90, with female thread = R 1/4” for connecting a pressure gauge

Article description	Order No.	Stock status
FWDPA for FRIAL DAP, DAA TL, DAA Classic from d 90	**613595**	1

FWDPA SA Pressure test adapter

Pressure test adaptor for use with FRIALEN spigot saddles SA UNI, with connection nipple Ø ½”.

Article description	Order No.	Stock status
FWDPA SA for SA UNI	**613596**	1



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