



# Electrofusion

Product range 2021



## 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 provide you with an extremely secure gas supply network that is particularly economical to operate. You also benefit from comprehensive customer service and training. As a leading supplier of connecting elements for gas pipes, we provide you with a comprehensive product selection for outstanding results.

### **Water**

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 and hygiene problems are avoided. Our portfolio includes electrofusion joints, mechanical couplings and tools.

### **Waste Water**

With us you create sewage systems that last for generations. You benefit from the best possible profitability of your investments and extremely low maintenance costs. We offer you a closed system for wastewater that enables safe pipe connections, house connections and shaft connections without root ingrowth.

### **Tool service by manufacturer**

More than 30 years we have been offering complete range of tools and equipment suitable for construction sites as well as service tailored to your requirements.

## **INFORMATION**

Changes in the range  
Delivery and payment terms

## **FRIALEN<sup>®</sup>**

Safety Fittings

## **FRIAFIT<sup>®</sup>**

Sewage System

## **FRIATOOLS<sup>®</sup>**

Technical Equipment

## Changes in the product range 2021 at a glance

NEW		FRIALEN Safety Fittings				
<b>UB SDR 11</b> Slide-over Couplers	d		Order no.	available from	Page	
	900		<b>616440</b>	available	15	
	1000		<b>616989</b>	available		
<b>UB SDR 7.4</b> Slide-over Couplers	280		<b>616284</b>	available	18	
<b>TA</b> T-Pieces with extra long outlet spigot	d		Order no.	available from	Page	
	90/90		<b>616677</b>	available	27	
	110/110		<b>616680</b>	available		
160/160		<b>616684</b>	Q2 2021			
<b>TA RED</b> T-Piece reduced with outlet spigot (normal outlet)	d <sub>1</sub>	d <sub>2</sub>	Order no.	available from	Page	
	90	32	<b>616675</b>	available	28	
	90	63	<b>616676</b>	available		
	110	63	<b>616678</b>	available		
	110	90	<b>616679</b>	available		
	160	90	<b>616681</b>	Q1 2021		
	160	110	<b>616682</b>	Q1 2021		
160	125	<b>616683</b>	Q1 2021			
<b>DAV RED SNAP</b> Pressure tapping valves with extra long outlet spigot	d <sub>1</sub>	d <sub>2</sub>	Order no.	available from	replaces Order no.	Page
	50	32	<b>617024</b>	Q3 2021	615955	
	63	32	<b>617025</b>	Q3 2021	615341	
	63	40	<b>617026</b>	Q3 2021	615342	
	63	63	<b>616952</b>	Q3 2021		
	75	32	<b>617027</b>	Q3 2021	615956	
	90	32	<b>616960</b>	Q2 2021	615344	
	90	40	<b>616961</b>	Q2 2021	515617	
	90	50	<b>616962</b>	Q2 2021	615346	
	90	63	<b>616963</b>	Q2 2021	615347	
	110	32	<b>616964</b>	available	615348	
	110	40	<b>616965</b>	available	615621	
	110	50	<b>616966</b>	available	615350	
	110	63	<b>616967</b>	available	615351	
	125	32	<b>616968</b>	Q2 2021	615352	
	125	40	<b>616969</b>	Q2 2021	615625	
	125	50	<b>616970</b>	Q2 2021	615354	
	125	63	<b>616971</b>	Q2 2021	615355	57
	140	32	<b>616972</b>	Q2 2021		
	140	63	<b>616973</b>	Q2 2021	615930	
	160	32	<b>616974</b>	end of Q1 2021	615356	
	160	40	<b>616975</b>	end of Q1 2021	615629	
160	50	<b>616976</b>	end of Q1 2021	615358		
160	63	<b>616977</b>	end of Q1 2021	615359		
180	32	<b>616978</b>	Q1 2021	615361		
180	40	<b>616979</b>	Q1 2021	615633		
180	50	<b>616980</b>	Q1 2021	615363		
180	63	<b>616981</b>	Q1 2021	615364		
200	32	<b>616982</b>	Q1 2021	615366		
200	63	<b>616984</b>	Q1 2021	615369		
225	32	<b>616985</b>	end of Q1 2021	615374		
225	40	<b>616986</b>	end of Q1 2021	615641		
225	50	<b>616987</b>	end of Q1 2021	615376		
225	63	<b>616988</b>	end of Q1 2021	615377		
<b>DBS (EBS)</b> Installation kit for Pressure Tapping Valves with KlickFix® system	RD in m		Order no.	available from	Page	
	0,45-0,7		<b>616998</b>	available	58	
	0,7-1,0		<b>616999</b>	available		
	0,9-1,3		<b>617000</b>	available		
	1,2-1,8		<b>617001</b>	available		
	1,8-2,7		<b>617002</b>	available		
2,6-3,5		<b>617003</b>	available			

## Changes in the product range 2021 at a glance

### Discontinued products **FRIALEN Safety Fittings**

DAV	d <sub>1</sub>	d <sub>2</sub>	Order no.	available until	alternative Order no.	Page
Pressure tapping valves with extra long outlet spigot	50	32	<b>615955</b>	Q1 2022	617024	
	63	32	<b>615341</b>	Q1 2022	617025	
	63	40	<b>615342</b>	Q1 2022	617026	
	75	32	<b>615956</b>	Q1 2022	617027	
	90	32	<b>615344</b>	Q4 2021	616960	
	90	40	<b>615617</b>	Q4 2021	616961	
	90	50	<b>615346</b>	Q4 2021	616962	
	90	63	<b>615347</b>	Q4 2021	616963	
	110	32	<b>615348</b>	no longer available	616964	
	110	40	<b>615621</b>	no longer available	616965	
	110	50	<b>615350</b>	no longer available	616966	
	110	63	<b>615351</b>	no longer available	616967	
	125	32	<b>615352</b>	Q4 2021	616968	
	125	40	<b>615625</b>	Q4 2021	616969	
	125	50	<b>615354</b>	Q4 2021	616970	
	125	63	<b>615355</b>	Q4 2021	616971	56
	140	63	<b>615930</b>	Q4 2021	616973	
	160	32	<b>615356</b>	Q2 2021	616974	
	160	40	<b>615629</b>	Q2 2021	616975	
	160	50	<b>615358</b>	Q2 2021	616976	
	160	63	<b>615359</b>	Q2 2021	616977	
	180	32	<b>615361</b>	Q3 2021	616978	
	180	40	<b>615633</b>	Q3 2021	616979	
	180	50	<b>615363</b>	Q3 2021	616980	
	180	63	<b>615364</b>	Q3 2021	616981	
	200	32	<b>615366</b>	Q3 2021	616982	
	200	50	<b>615368</b>	Q3 2021		
200	63	<b>615369</b>	Q3 2021	616984		
225	32	<b>615374</b>	Q2 2021	616985		
225	40	<b>615641</b>	Q2 2021	616986		
225	50	<b>615376</b>	Q2 2021	616987		
225	63	<b>615377</b>	Q2 2021	616688		

<b>FRIAMAT XL</b>	Order no.	
Large pipe fusion unit with traceability and documentation function	<b>613091</b>	only on rental base

### NEW **FRIATOOLS Technical Equipment**

<b>FRIAMAT prime</b>	Version	Order no.	available from	replaces Order no.	Page
FRIAMAT the 7th generation: Universal fusion unit with traceability and documentation function, Bluetooth	with reader wand	<b>613134</b>	Q1 2021	613103	
	with mini-scanner	<b>611134</b>	Q1 2021	611103	91
	with 1D/2D-scanner	<b>614134</b>	Q1 2021		

<b>FRIAMAT basic</b>	Version	Order no.	available from	replaces Order no.	Page
FRIAMAT the 7th generation: Universal fusion unit without documentation function	with reader wand	<b>613130</b>	Q1 2021	613104	
	with mini-scanner	<b>611130</b>	Q1 2021	611104	92
	with 1D/2D-scanner	<b>614130</b>	Q1 2021		

<b>2DSCAN</b>	Order no.	available from	Page
1D/2D-Scanner	<b>624006</b>	Q1 2021	93

## Delivery and payment terms of Aliaxis Deutschland

### Stocked status

Please note when planning your material requirements:

- Articles with stocked status 1 (MTS) are generally available from stock.
- Articles with stocked status 3 (MTO) are order related products. Delivery time on request. These articles cannot be returned or exchanged.

### Packaging and pallet units

Packaging (BX) and pallet units (PU) are given on the product range. Orders for complete BXs/PUs simplify your incoming goods and warehousing processes. In addition, they promote fast order picking and delivery at our locations. The product range shows that the units we have chosen are fair and practicable.

### Returns

The total value of the return / position must be at least 100,- €.

We must first approve all returns of goods before they are entered as credit items. Please inform us of your wish to return goods. Following approval, we shall send you a return slip bearing a unique number. Your return cannot be processed without this number. Our quality management requires in addition that the goods fulfil certain criteria. If you wish, we shall be pleased to send you details under separate cover. If the goods fulfil the criteria and the return has been approved, a credit entry is made with a 30% deduction for the examination costs.

### Inspection test certificates

We charge a processing fee of €20,00/item for inspection test certificates as set down under DIN EN 10204 – 3.1. The inspection test certificate must be included in the order, and cannot be issued at a later date.

To eliminate unnecessary expenditure, we can also provide you with the certificate for FRIALEN articles if this is needed. This needs only the component's traceability batch found on the barcode or in the shipping documents.

### Product range

This product catalogue is available for you in the download area [www.aliaxis.de/en](http://www.aliaxis.de/en).

### Quality

FRIALEN safety fittings, FRIALEN XL large pipe technique, the FRIAFIT sewage system, and our FRIATOOLS technical equipment are subjected to continuous quality control and strict testing regulations that form part of our extensive quality management system certified under DIN EN ISO 9001:2015.

FRIALEN safety fittings, FRIALEN XL large pipe technique, the FRIAFIT sewage system, and our FRIATOOLS technical equipment are all matched to each other. All modifications and supplements arising from our continued developments are treated accordingly. Our continuous quality control extends to FRIALEN safety fittings, FRIALEN XL large pipe technique, the FRIAFIT sewage system, our FRIATOOLS technical equipment, and the quality of fusion joint as a result of these components' interactions. The operation and functional reliability of equipment provided by other manufacturers (third party equipment) are not subjected to our specifications and control procedures. When installing pipe systems, please proceed in accordance with the fitting instruction manuals and equipment operating instructions.

### Certifications of our management systems

In addition to the quality management system certified under DIN EN ISO 9001:2015 Aliaxis Deutschland GmbH, has introduced an environmental management system certified under DIN EN ISO 14001:2015 and an energy management system certified under ISO 50001:2011. The current certificates can be found in the download area [www.aliaxis.de/en](http://www.aliaxis.de/en).

### Processing and additional information

Processing is described in our assembly instructions, which is also available for download on the internet at [www.aliaxis.de/en](http://www.aliaxis.de/en). This address also provides further details on the products and their processing, approvals, publications and contacts.

### Technical details

The technical details presented on this product range are incomplete. Details can be taken from our data sheets that are also available in the download section at [www.aliaxis.de/en](http://www.aliaxis.de/en). Technical instructions for processing and use may be delivered with the product and, in this case, must be observed without fail.

### Date of the printing

Technical progress corresponds at the date of printing. Changes serving the advancement of our technologies may be made without prior announcement. We accept no liability for printing errors.

### Brand names

For easier reading, this product range dispenses with the symbols ® and ™ in continuous text. The following trademarks are registered: FRIALEN®, FRIAFIT®, FRIATOOLS®, FRIALOC®, FRIAMAT®, Sentry GS®, BAIO® and Gas-Stop™.

### Abbreviations

BX	Box
PU	Pallet unit



## 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,

## Delivery and payment terms of Aliaxis Deutschland

improper operation, natural wear and tear, improper care, unsuitable resources, defective construction work, unsuitable building ground, or particular external effects that are unforeseen after conclusion of contract.

### 7. Reservation of ownership

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

### 8. Force majeure – right to withdraw

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

### 9. Liability for compensation of culpable damage

- 9.1 Our liability for damage compensation, irrespectively of the legal grounds, in particular from impossibility, delay, defective or incorrect delivery, violation of contract, breach of obligations during contract negotiations, and unpermitted activities, if caused by culpability in each and every case, is limited to the extent under 9.
- 9.2 We are liable to compensate for damages, irrespectively of the legal grounds, in the event of wilful culpability and gross negligence.
- 9.3 On condition of a smaller scope of liability, we are liable for slight negligence under the law (e.g. for due care in our own matters) only
  - a) for damages as a result of harm to life, the body, or health and
  - b) for damages resulting from the not inconsiderable violation of an essential contractual obligation (an obligation whose fulfilment first makes at all possible the ordinary performance of the contract and on whose fulfilment the contracting partner relies or may rely regularly). In this case, however, our liability is restricted to the compensation for the predictable, typical damage.

9.4 The liability limitations under 9.3 also apply in the event of violations of obligations by or for the benefit of persons whose culpability lies within our responsibility under the law.

9.5 The limitations of and exemptions from liability under 9.3 do not apply when we fail deliberately to communicate a deficiency, when we have granted a warranty on the consistency of the object, or there are claims under the product liability laws.

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

### 10. Data protection

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

### 11. Non assignability

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

### 12. Applicable laws, venue, place of performance

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

Mannheim, December 2019

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## **FRIALEN<sup>®</sup> Safety Fittings**

Product range ES 41/21

For sustainable gas, water, and industrial pipes of polyethylene.

## Things worth knowing about FRIALEN® Safety Fittings and this product range

### Component traceability

Each component is provided with an additional barcode for its traceability.

### Certification

FRIALEN safety fittings, FRIALEN XL large pipe technique, the FRIAFIT coupler AM, shut-off valves included, fulfill the requirements of relevant standards, e.g. for gas according to EN 1555-3, -4, ISO 4437-3, -4, for drinking water and pressure drainage systems according to EN 12201-3, -4 and ISO 4427-3, -4.

Specific application areas are termed by the description of the product. Worldwide certifications underline the highest quality level of FRIALEN, FRIALEN XL and FRIAFIT safety fittings, shut-off valves, which comply also with the other following quality marks:

The current certificates can be found in the download area [www.aliaxis.de/en](http://www.aliaxis.de/en)

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



### H2 Test Certification

Our products are H2-ready-100.

The scope of application of our FRIALEN fittings and valves has been extended to hydrogen [H<sub>2</sub>]. This means that our products can be used up to 100% hydrogen up to MOP 10 bar. This is confirmed by test certificates from the DBI - Gastechisches Institut GmbH.

Suitable components are marked with an H<sub>2</sub> icon in the product range. Please contact our sales representatives for further information.



### Fusability

FRIALEN safety fittings can be fused to pipes SDR17.6 (s min = 3 mm) to SDR11 or as given in the product description. Processing of other SDR classes on request.

FRIAFIT couplers AM SDR 17 can be fused to pipes SDR 33 to SDR 17.

FRIALEN saddles and tapping tees ≤ d 63 can be processed only with pipes ≤ SDR11. Pressure tapping tees with fast clamping system DAA from d 50 are also processible with pipes SDR 17.6 to SDR 11. Please also note the details for each of the fusible SDR sizes given on the fitting's barcode label as well as all other binding codes affixed directly to the product.

Please consult our application engineering department before processing thin walled pipes > SDR 17.6.

FRIALEN, FRIALEN XL and FRIAFIT safety fittings can be processed with pipes of PE 100 and PE 100-RC, PE 80, PE 63, PE 50 according to DIN 8074/75, EN 1555, EN 12201, ISO 4437, and ISO 4427, PE-Xa on request, LDPE according to DIN 8072/73. For PE pipes, the melt flow rate shall be MFR 190/5 0.2–1.7 g / 10 min.

Components with an MFR < 0.20 require confirmation of suitability. LDPE pipes can be fused at ambient temperatures > 0 °C.

FRIALEN, FRIALEN XL safety fittings and FRIAFIT couplers made of PE 100 fulfil the requirements under EN 1555-3, EN 12201-3, ISO 4427-3, ISO 4437-3. FRIALEN, FRIALEN XL and FRIAFIT safety fittings can be processed with FRIAMAT fusion units at ambient temperatures from -10 °C to +45 °C.

Joints, which require material transition, e.g. threaded joints or welds must in addition comply with the relevant component standards and installation instructions, especially with respect to sealing, heat transfer during welding and corrosion protection.

In case of restricted application for processing or installation of FRIALEN, FRIALEN XL and FRIAFIT safety fittings in general, please read our assembly instructions.

Also our area sales managers will be pleased to answer any questions you may have.

### Pressure bearing capacity

The maximum design pressure bearing capacity of FRIALEN/FRIALEN XL/FRIAFIT safety fittings made of PE 100 is defined by SDR (standard dimension ratio).

SDR = pipe outer dia. d / pipe wall thickness s

The maximum design pressure depends on the design factor C, which is given in the relevant application standard for gas (e.g. EN12007-2) and for pressure piping systems (e.g. EN 805). With respect to „C“ the following maximum operating pressures may apply:

Fitting material PE 100 (FRIALEN standard)	Water	Gas
SDR level	maximum operating pressure in bar at C = 1,25	maximum operating pressure in bar at C = 2
26	6	-
17	10	5
11	16	10
9	20	-
7,4	25	-

## Things worth knowing about FRIALEN® Safety Fittings and this product range

### Fusion process

FRIALEN/FRIALEN XL/FRIAFIT safety fittings can be processed with universal fusion units, e.g. the FRIAMAT series. The fusion parameters are transferred automatically from the fitting's barcode.

FRIALEN/FRIALEN XL/FRIAFIT safety fittings can also be processed with fusion units delivering a fixed output voltage of 39.5 V following the manual entry of the fusion time. The fusion parameters entered manually require the fusion time on the barcode.

PLEASE NOTE! Fixed voltage fusion units can be used to process our products at ambient temperatures of -5 °C to +35 °C.

The fusion time given on the fitting's barcode applies to the whole temperature range.

PLEASE NOTE! The 39.5V fusion time and the barcode fusion time can be different!

### Cooling times

FRIALEN/FRIALEN XL/FRIAFIT couplers / elbows / T pieces / transition fittings:

The cooling times (CT) given on the barcode labels specify the times until the fused join can be moved.

Longer cooling times must be observed until pressurisation. Please read our assembly instructions.

FRIALEN/FRIALEN XL/FRIAFIT saddles, tapping tees and -valves:  
The cooling times (CT) given on the barcode labels specify the times until the tap.

The saddle fusion joint can be pressure tested earlier. Please read our assembly instructions.

### Processing and additional information

Processing is described in our assembly instructions, which is also available for download on the internet at [www.alias.de](http://www.alias.de). This address also provides further details on the products and their processing, approvals, publications and contacts.

### FRIALEN saddle fittings top-loading

The specified dimensions, including the values in brackets, define the permitted assembly and fusion area for the saddle fitting. The standard application range may be restricted by technical constraints (e.g. length of a driller, pipe wall thickness, tapping diameter, required diameter for balloon insertion for SPA-TL). Alternative uses of the specific equipment require a feasibility test. Please contact our application engineering team.



# Hydrogen

## Protecting the climate by using hydrogen

FRIALEN products are H2-ready-100 and suitable for use in gas distribution networks with up to 100% hydrogen fuel gases.

### The energy transition is in motion:

The focus is on CO2 reduction, which is to be achieved by switching from natural gas to regenerative energy generation. CO2-neutral hydrogen (H2) plays a key role, as described in the European Green Deal.

### Worldwide leading!

Aliaxis is a global leader in the manufacturing and distribution of advanced plastic piping systems. We provide people around the world with sustainable innovative solutions for water and energy, leading the industry in a way that anticipates the rapidly evolving needs of our customers.

Aliaxis Deutschland is a leading manufacturer of electrofusion fittings and has already taken the first step and commissioned DBI Gas- und Umwelttechnik GmbH in Leipzig to test

its FRIALEN products for use with hydrogen fuel gases, resulting in the portfolio now being rated "H2-ready-100"; therefore suitable for up to 100% hydrogen fuel gases. According to the state-of-the-art test results, FRIALEN fulfils the expected lifetime requirements, even if the system is operated with pure hydrogen fuel gas and under full MOP (maximum operating pressure).

### Why hydrogen?

Because, as an energy produced and stored in a climate-friendly way, it can significantly reduce CO2 emissions - especially in industry, thermal energy and transport.

Politicians and the public are currently still very much focused on electricity when it comes to CO2 reduction. But thermal energy still accounts for the largest share at 49 percent (approx. 1,300 TWh) in Germany for example, and this is followed by mobility at 28 percent, then electricity at 23 percent. So, it is time to broaden the focus and talk about hydrogen as the energy of the future.



### Step by step to 100 percent

Several member states of the European Union and beyond started initiatives to realize hydrogen transmission networks. The topic will have an increasing influence on the existing natural gas market over the coming years. As a first step, the conversion of the existing natural gas network for the additional admixture of 20 -30 percent hydrogen is on the agenda, followed by the capability or conversion to 100 percent hydrogen for newly planned networks. Technical changes for the upgrade are currently under research, in real laboratories and other trial situations. We are ready to support municipalities and gas network owners on their way forward with products suitable for 100% Hydrogen.

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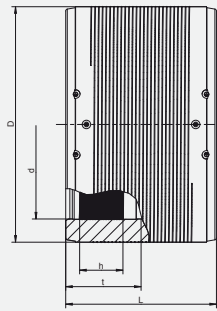
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# FRIALEN Couplers

## UB SDR 11

## Slide-over Couplers, SDR 11



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

With pre-heating technology from d 400.



### PE 100 SDR 11

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

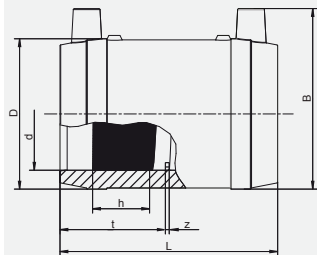
d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
16	616577	3	135	4.320	29	60	0.030
32	612662	1	60	1.920	45	77	0.064
40	612663	1	40	1.280	54	86	0.096
50	612664	1	25	800	68	98	0.151
63	612665	1	15	480	82	112	0.225
75	612666	1	50	400	98	122	0.360
90	612667	1	30	240	114	157	0.510
110	612668	1	24	192	137	159	0.705
125	612669	1	16	128	156	172	0.946
140	615001	1	12	96	174	184	1.270
160	612671	1	8	64	199	190	1.772
180	612672	1	6	48	220	210	2.088
200	612673	1	1	56	247	220	2.798
225	612674	1	1	36	277	236	3.950
250	612675	1	1	24	315	246	5.800
280	615073	1	1	18	347	285	7.740
315	612670	1	1	18	390	300	10.040
355	615074	1	1	9	445	300	14.600
400	615075①	1	1	4	500	320	20.800
450	615076①	1	1	4	560	340	30.000
500	615124①	1	1	2	630	360	40.000
560	616312①	1	1	2	715	380	55.000
630	616269①	1	1	2	810	420	79.600
710	616313①	1	1	1	900	442	101.000
800	616314①	1	1	1	1000	500	138.800
<b>NEW</b>	900	616440①	3	1	1130	600	210.300
<b>NEW</b>	1000	616989①	3	1	1200	680	223.600

① separate fusion zones

## FRIALEN Couplers

### MB

### Couplers with removable stop



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



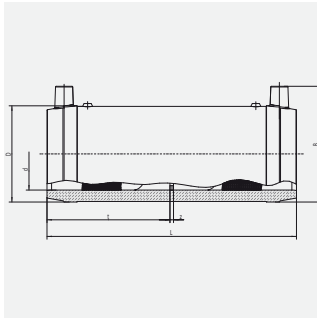
#### PE 100 SDR 11

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

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
20	612680	1	110	3520	33	60	0.040
25	612681	1	90	2880	38	66	0.047
32	612682	1	60	1920	45	78	0.064
40	612683	1	40	1280	54	86	0.100
50	612684	1	25	800	68	98	0.150
63	612685	1	15	480	82	110	0.221
75	612686	1	50	400	98	122	0.360
90	612687	1	30	240	114	157	0.510
110	612688	1	24	192	137	159	0.710
125	612689	1	16	128	156	172	0.950
140	612690	1	12	96	174	184	1.270
160	612691	1	8	64	199	190	1.770

### FRIALONG

### Long Couplers with removable center stop



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



#### PE 100 SDR 11

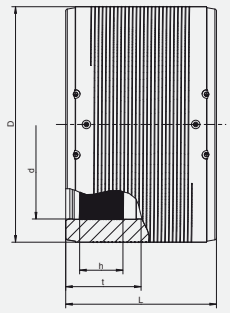
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	615736	1	40	1280	45	136	0.110
40	615737	1	30	960	54	146	0.140
50	615608	1	16	512	68	175	0.250
63	615738	1	10	320	82	197	0.370

# FRIALEN Couplers

## UB SDR 17

## Slide-over Couplers, SDR 17



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices.  
UB d 1000 and above can only be fused with the FRIAMAT XL.

From d 560 with pre-heating technology.  
Special sizes, pressure classes and designs on request.



## PE 100 SDR 17

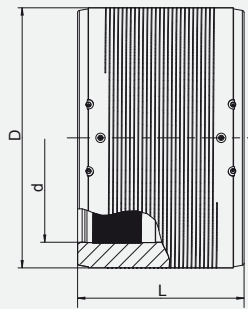
### Maximum working pressure 10 bar (water)/5 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
315	616529	1	1	18	356	280	5.880
355	616530	1	1	18	400	290	7.600
400	616531①	1	1	9	450	300	10.100
450	616532①	1	1	4	506	320	13.650
500	616533①	1	1	4	562	350	18.250
560	615706①	1	1	2	630	380	24.190
630	615726①	1	1	2	710	420	34.870
710	615994①	1	1	2	800	442	46.000
800	616290①	1	1	1	900	500	65.900
900	616345①	1	1	1	1024	500	91.500
1000	616403①	3	1	1	1130	610	128.000
1200	616416①	3	1	1	1356	670	205.000

① separate fusion zones

## UB SDR 9

## Slide-over Couplers, SDR 9



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

With pre-heating technology (d 400 – d 450 optional use; d 500 – d 630 required).

Special sizes, pressure classes and designs on request



## PE 100 SDR 9

### Maximum working pressure 20 bar (water)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
400	616441①	1	1	4	500	320	20.800
450	616447①②	3		4	560	340	30.000
500	616445①②	3		2	630	360	40.000
560	616446①②	3		2	715	380	55.000
630	616439①②	3		2	810	420	79.600

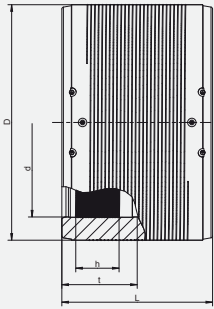
① separate fusion zones

② minimum order quantity = 1 pallet unit

## FRIALEN Couplers

### UB SDR 7.4

### Slide-over Couplers, SDR 7.4



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

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



### PE 100 SDR 7.4

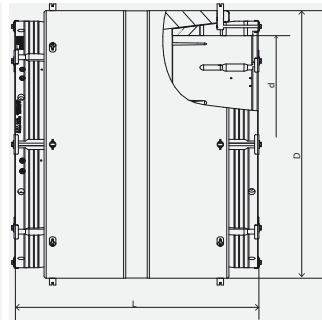
#### Maximum working pressure 25 bar (water)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
90	616270	1	30	240	117	138	0.530
110	616271	1	24	192	142	159	0.870
125	616272	1	16	128	160	172	1.230
140	616273	1	12	96	181	184	1.640
160	616274	1	8	64	206	203	2.360
180	616282	1	6	48	225	210	2.700
200	616283	1	2	36	250	224	3.610
225	616284	1	1	33	280	240	4.900
250	616285	1	1	24	315	246	6.700
280	616286	3	1	18	355	268	9.300
315	616287①	1	1	18	400	285	12.100
355	616288①	1	1	9	450	300	16.700

① separate fusion zones

### KM XL

### Conical ring Couplers



Easy and quick assembly, also as slide over coupler when there is limited space. Variable diameter range to bridge large tolerance conditions of the outer pipe diameter and out-of-roundness. With flexible fusion conical ring for easy assembly.

The KM XL can only be fused with the FRIAMAT XL with Y connector (available on loan with Ref. no. 613091).

Other dimensions or pressure rating as well as special dimensions on request.



### PE 100 SDR 17

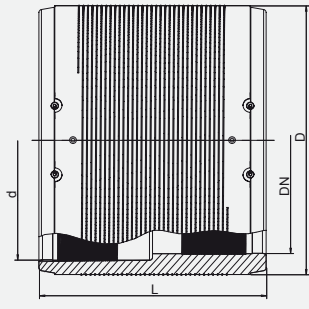
#### Maximum working pressure 10 bar (water)/5 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
355	616535	3	1	1	497	705	36.500
400	616536	3	1	1	550	730	46.000
450	616537	3	1	1	602	750	54.000
560	616539	3	1	1	730	850	88.100
630	616523	3	1	1	805	940	135.000
800	616541	3	1	1	1005	1065	207.000
1000	616434	3	1	1	1245	1145	350.000
1200	616435	3	1	1	1450	1290	500.000

# FRIALEN Couplers

## REM

## Relining Slide-over Couplers



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



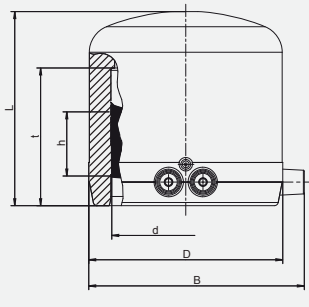
### PE 100 SDR 17

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

d/DN	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
110/100	<b>615569</b>	1	24	192	130	160	0.700
160/150	<b>615571</b>	1	12	96	190	180	1.600
315/300	<b>615576</b>	1	1	18	355	300	7.700

## MV

## End Caps



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



### PE 100 SDR 11

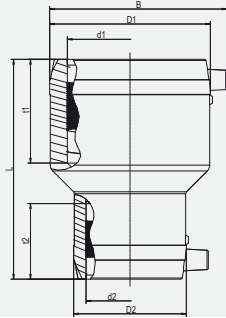
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
20	<b>612025</b>	1	50	2500	31	62	0.035
25	<b>612026</b>	1	50	2500	35	65	0.040
32	<b>612027</b>	1	60	1920	44	70	0.060
40	<b>612028</b>	1	50	1600	55	75	0.090
50	<b>612029</b>	1	30	960	67	80	0.125
63	<b>612030</b>	1	20	640	84	88	0.210
75	<b>612031</b>	1	20	640	99	99	0.320
90	<b>612032</b>	1	16	288	118	114	0.500
110	<b>612033</b>	1	12	216	143	125	0.825
125	<b>612034</b>	1	8	144	163	135	1.160
160	<b>612035</b>	1	10	60	208	160	2.240
180	<b>616183</b>	1	6	48	224	157	2.180
200	<b>616184</b>	1	4	32	250,6	167	3.000
225	<b>616185</b>	1	4	32	279	184	3.970

# FRIALEN Reducers

MR

## Electrofusion Reducers



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



### PE 100 SDR 11

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

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	D <sub>1</sub> /D <sub>2</sub>	L	Weight kg/each
20	16	<b>616824</b> ①	1	70	2240	32/28	75	0.035
32	16	<b>616452</b> ①	1	80	2560	45/28	91	0.060
32	20	<b>615386</b>	1	80	2560	45/32	88	0.060
32	25	<b>615502</b>	1	70	2240	45/38	88	0.070
40	20	<b>615387</b>	1	60	1920	54/32	98	0.080
40	25	<b>616751</b> ①	1	120	1280	54/38	101	0.090
40	32	<b>615388</b>	1	50	1600	54/45	98	0.090
50	20	<b>612069</b>	1	32	1024	68/32	110	0.130
50	25	<b>616752</b> ①	1	130	960	66/38	107	0.120
50	32	<b>612070</b>	1	32	1024	68/45	110	0.140
50	40	<b>612071</b>	1	25	800	68/54	110	0.140
63	32	<b>615389</b>	1	18	576	82/45	125	0.210
63	40	<b>615390</b>	1	16	512	82/54	125	0.220
63	50	<b>612072</b>	1	16	512	82/68	125	0.230
75	63	<b>616583</b>	1	15	270	94/79	143	0.325
90	50	<b>615391</b>	1	15	270	117/68	160	0.470
90	63	<b>615392</b>	1	15	270	117/82	160	0.510
90	75	<b>616582</b>	1	15	270	113/94	159	0.505
110	63	<b>615393</b>	1	10	180	142/82	160	0.730
110	90	<b>615693</b>	1	8	144	140/115	180	0.900
125	90	<b>615694</b>	1	8	144	155/115	200	0.980
125	110	<b>616510</b>	1	16	128	157/137	202	1.300
160	110	<b>615695</b>	1	8	64	201/140	230	1.990
180	125	<b>616511</b>	1	1	60	214/155	275	2.600
225	160	<b>616356</b>	1	1	36	282/203	270	4.860

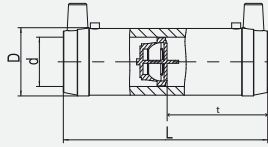
① Design deviates from product description



## FRIALEN Excess Flow Valves

### FRIASTOPP M

### Long Couplers with integrated Mertik Maxitrol excess flow valve



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

The product is suitable from up to 20 % hydrogen.



#### PE 100 SDR 11

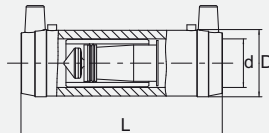
#### Maximum working pressure type Z, B: 5 bar (gas), type D: 1 bar (gas)

d	Type	Order Ref.	Operating pressure range $p_{min} - p_{max}$	VN	Stock-status	BX	PU	D	L	Weight kg/each
32	Z	<b>616187</b>	35 mbar - 5 bar	17 - 40	1	40	1280	45	136	0.140
40	Z	<b>616188</b>	35 mbar - 5 bar	26 - 62	1	30	960	54	146	0.220
50	Z	<b>616189</b>	35 mbar - 5 bar	41 - 99	1	16	512	68	175	0.380
63	Z	<b>616190</b>	35 mbar - 5 bar	66 - 158	1	10	320	82	197	0.530
32	D	<b>616191</b>	25 mbar - 1 bar	11 - 16	1	40	1280	45	136	0.140
40	D	<b>616193</b> ①	25 mbar - 1 bar	19 - 27	3	30	960	54	146	0.220
50	D	<b>616195</b>	25 mbar - 1 bar	28 - 40	1	16	512	68	175	0.380
63	D	<b>616197</b>	25 mbar - 1 bar	51 - 72	1	10	320	82	197	0.530
32	B	<b>616192</b>	100 mbar - 5 bar	26 - 60	1	40	1280	45	136	0.140
40	B	<b>616194</b> ①	100 mbar - 5 bar	39 - 90	3	20	640	54	146	0.220
50	B	<b>616196</b> ①	100 mbar - 5 bar	58 - 135	3	10	320	68	175	0.380
63	B	<b>616198</b> ①	100 mbar - 5 bar	94 - 219	3	8	256	82	197	0.530

① Delivery only in complete packaging unit

### FRIASTOPP P

### Long Couplers with integrated Pipelife Gas-Stop™ system



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

The product is suitable from up to 20 % hydrogen.



#### PE 100 SDR 11

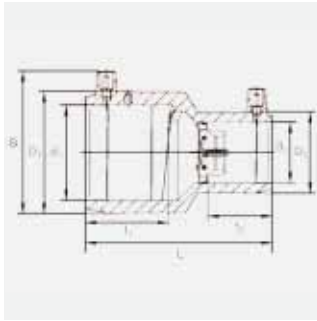
#### Maximum working pressure type U, U<sub>UE</sub>, S: 5 bar (gas), type A/D: 1 bar (gas)

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

① Delivery only in complete packaging unit

MR STOPP

Electrofusion Reducers with integrated Mertik Maxitrol excess flow valve



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

The product is suitable from up to 20 % hydrogen.



PE 100 SDR 11

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

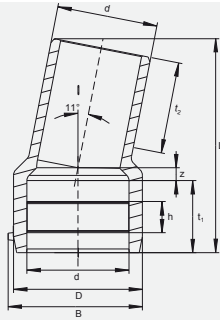
d <sub>1</sub>	d <sub>2</sub>	Type	Order Ref.	Operating pressure range p <sub>min</sub> - p <sub>max</sub>	VN	Stock-status	BX	PU	D <sub>1</sub> /D <sub>2</sub>	L	Weight kg/each
50	40	Z	616218 <sup>①</sup>	35 mbar - 5 bar	26 - 62	3	12	600	68/54	110	0.210
63	32	Z	616219	35 mbar - 5 bar	17 - 40	1	18	576	82/45	125	0.240
63	40	Z	616220 <sup>①</sup>	35 mbar - 5 bar	26 - 62	3	8	400	82/54	125	0.290
63	50	Z	616221	35 mbar - 5 bar	41 - 99	1	8	400	82/68	125	0.360
63	32	D	616238 <sup>①</sup>	25 mbar - 1 bar	11 - 16	3	10	500	82/45	125	0.240
63	50	D	616240	25 mbar - 1 bar	28 - 40	1	16	512	82/68	125	0.360

① Delivery only in complete packaging unit

# FRIALEN Elbows

## WS11

## Elbows 11°



For universal and stress free changes in direction even in restricted spaces. Optimum flexibility through male/female design. Coupler side with exposed heating coils for optimum heat transfer, large insertion depth and wide fusion zone. Spigot for processing with FRIALEN MB or UB couplers.



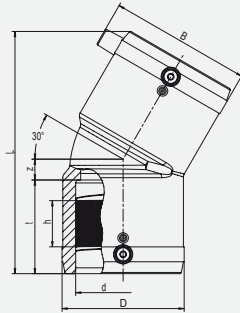
### PE 100 SDR 11

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

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
110	616139	1	8	144	141	235	0.920
125	616140	1	5	90	160	250	1.250
160	616141	1	8	64	200	295	2.260
180	616142	1	4	32	226	310	3.050
225	616143	1	1	18	280	350	5.280

## W30

## Elbows 30°



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



### PE 100 SDR 11

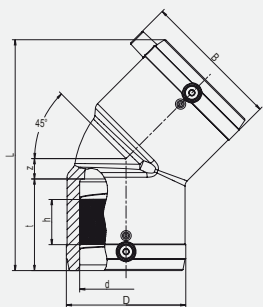
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
90	615272	1	8	144	115	224	0.780
110	615273	1	6	108	142	252	1.260
125	615274	1	4	72	158	270	1.640
160	615340	1	5	40	199	350	3.870
180	616261	1	3	24	229	390	4.990
200	616262	1	1	18	254	412	6.350
225	616263	1	1	18	281	456	8.220

## FRIALEN Elbows

**W45**

**Elbows 45°**



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



**PE 100 SDR 11**

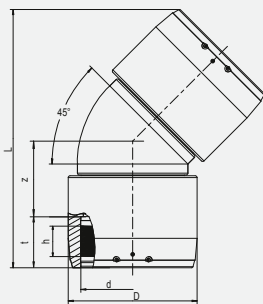
**Maximum working pressure 16 bar (water)/10 bar (gas)**

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
25	<b>616687</b> ①	1	150	2400	35	89	0.050
32	<b>612092</b>	1	50	1600	43	102	0.070
40	<b>612094</b>	1	30	960	54	120	0.110
50	<b>612096</b>	1	20	640	66	136	0.175
63	<b>612098</b>	1	10	320	82	158	0.295
75	<b>612100</b>	1	14	252	96	198	0.520
90	<b>612102</b>	1	8	144	115	232	0.810
110	<b>612104</b>	1	10	80	138	265	1.320
125	<b>612106</b>	1	10	80	157	279	1.770
160	<b>615275</b>	1	4	32	207	377	4.410
180	<b>615687</b>	1	3	24	228	382	4.610
200	<b>616264</b>	1	1	18	254	415	6.760
225	<b>615688</b>	1	1	8	280	450	8.290

① Design deviates from product description

**W45 XL**

**Elbows 45° XL**



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Separate fusion zones. Handling at the construction site is made easy thanks to the fused-on lifting eyes.



**PE 100 SDR 11**

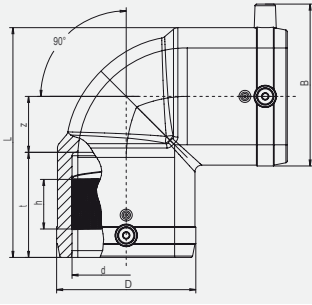
**Maximum working pressure 16 bar (water)/10 bar (gas)**

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
250	<b>616404</b>	1	1	6	310	621	17.300
280	<b>616405</b>	1	1	4	350	702	25.600
315	<b>616406</b>	1	1	2	396	755	36.000

# FRIALEN Elbows

## W90

## Elbows 90°



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



### PE 100 SDR 11

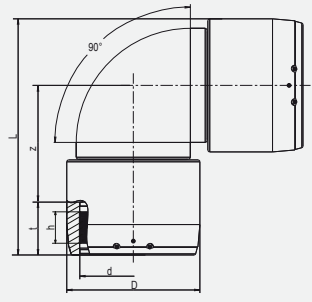
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
20	616686 <sup>①</sup>	1	200	3200	28,5	71	0.040
25	612091	1	60	1920	37	73	0.060
32	612093	1	50	1600	43	82	0.070
40	612095	1	30	960	53	96	0.110
50	612097	1	20	640	66	113	0.190
63	612099	1	10	320	83	136	0.340
75	612101	1	12	216	96	170	0.600
90	612103	1	6	108	115	202	0.950
110	612105	1	10	80	138	234	1.560
125	612107	1	8	64	157	254	2.030
160	615276	1	3	24	207	329	4.850
180	615689	1	3	24	228	354	5.760
200	616265	1	2	16	254	392	8.557
225	615690	1	1	8	280	430	10.220

<sup>①</sup> Design deviates from product description

## W90 XL

## Elbows 90° XL



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material. Separate fusion zones. Handling at the construction site is made easy thanks to the fused-on eyebolts.



### PE 100 SDR 11

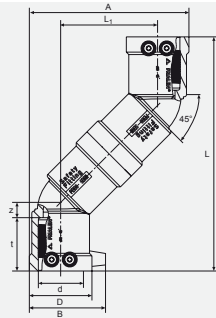
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
250	616408	1	1	6	310	534	19.100
280	616409	1	1	2	350	621	27.500
315	616410	1	1	2	396	677	40.000

## FRIALEN Elbows

### WET

### Swan Neck Bend



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



### PE 100 SDR 11

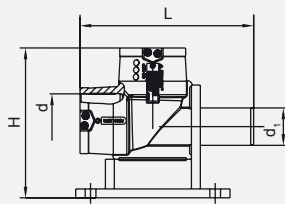
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
32	<b>616051</b>	1	15	750	49	177	74	0.220
40	<b>616052</b>	1	15	480	58	215	89	0.330
50	<b>616053</b>	1	15	270	70	242	101	0.510
63	<b>616699</b> ①	1	10	180	84	172	172	0.670

① both elbows 90°

### WF 90

### 90° Elbow with base unit



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



### PE 100 SDR 11

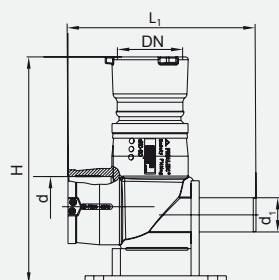
Maximum working pressure 16 bar (water)

d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	H	L	Weight kg/each
90	63	<b>615989</b>	1	3	54	253	293	2.250
110	63	<b>615998</b> ①	1	1	32	293	346	2.940

① see FLR flange reducer for connection to DN80

### WFGB

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



For jointing of hydrant with spigot according to BAIO system as alternative to flange connection. Compact fitting manufactured from FRIALEN 90° elbow with base (see WF 90°) and BAIO coupler made from ductile cast iron including sealing ring. BAIO coupler anchored in PE moulded part. Cannot be released or rotated. Please observe specific processing instructions for „BAIO“ system. For below floor hydrants the safety device against dirt and distortion for BAIO spigots is required.



### PE 100 SDR 11

Maximum working pressure 16 bar (water)

d/DN	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	H	L <sub>1</sub>	Weight kg/each
110/80	63	<b>616150</b>	1	3	12	418	346	8.200

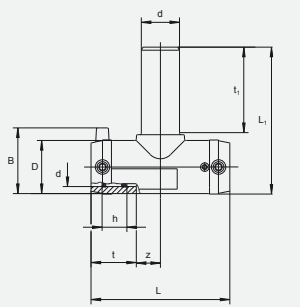


# FRIALEN T-Pieces

TA

## T-Pieces with extra long spigot outlet

NEW



Straight connector with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Up to and including d63 extra long spigot outlet dimensioned for 2 fusion operations.

PE 100 SDR 11

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



### with extra long spigot outlet

d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
20/20	<b>616685</b>	1	200	3200	29	77	95	0.040
25/25	<b>616338</b>	1	50	900	36	108	110	0.080
32/32	<b>615719</b>	1	35	630	44	116	131	0.120
40/40	<b>615720</b>	1	20	360	53	146	151	0.210
50/50	<b>615721</b>	1	10	180	67	175	186	0.358
63/63	<b>615722</b>	1	10	180	81	197	203	0.530

### with normal sized spigot

	d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
<b>NEW</b>	90/90	<b>616677</b>	1	12	96	116	280	219	1.250
<b>NEW</b>	110/110	<b>616680</b>	1	6	48	141	310	247	1.950
<b>NEW</b>	160/160	<b>616684</b> ①	1	3	24	203	390	326	4.950

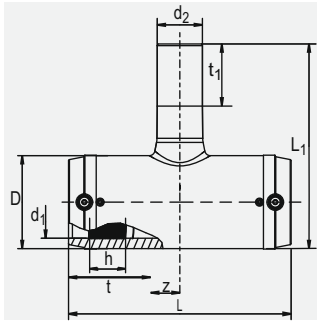
① Available in Q2 2021

## FRIALEN T-Pieces

### TA RED

### T-Pieces with reduced spigot outlet

NEW



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Separate fusion zones. Spigot outlet SDR 11 for processing couplers UB/MB.



PE 100 SDR 11

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

with extra long spigot outlet

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
32	20	616417	1	30	540	46	116	117	0.110
40	32	616418	1	20	360	55	146	148	0.170
50	32	616419	1	10	180	69	175	158	0.295
50	40	616420	1	10	180	69	175	167	0.315
63	32	616421	1	10	180	84	197	173	0.435
63	40	616422	1	10	180	84	197	182	0.450
63	50	616423	1	10	180	84	197	197	0.490

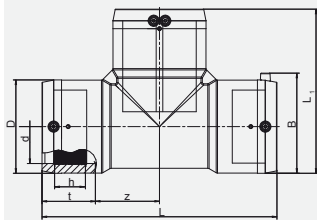
with normal sized spigot

	d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
NEW	90	32	616675	1	17	136	116	280	172	1.050
NEW	90	63	616676	1	15	120	116	280	191	1.100
NEW	110	63	616678	1	8	64	141	310	216	1.700
NEW	110	90	616679	1	8	64	141	310	244	1.850
NEW	160	90	616681 <sup>①</sup>	1	4	32	203	390	305	4.400
NEW	160	110	616682 <sup>①</sup>	1	4	32	203	390	308	4.500
NEW	160	125	616683 <sup>①</sup>	1	3	24	203	390	313	4.600

① Available end of Q1 2021

### T

### T-Pieces



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



PE 100 SDR 11

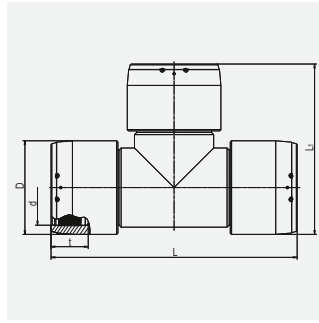
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
75	612165	1	8	144	96	278	187	0.980
90	612166	1	10	80	117	305	211	1.650
110	612167	1	6	48	142	355	248	2.580
125	612168	1	5	40	160	384	272	3.520
160	615277	1	3	24	200	430	315	5.820
180	615691	1	2	16	228	480	354	7.900
200	616266	1	1	8	251	550	400	11.130
225	615692	1	1	8	284	580	432	13.900

# FRIALEN T-Pieces

## T XL

## T-Pieces XL



With exposed heating coils for optimal heat transfer on all 3 sides, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Separate fusion zones. Handling at the construction site is made easy thanks to the fused-on eyebolts.



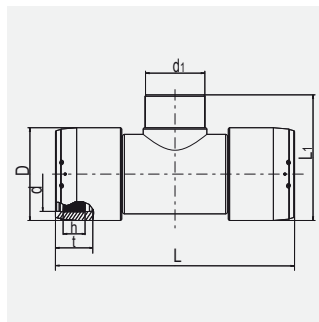
### PE 100 SDR 11

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

d	Order Ref.	Stock-status	BX	PU	D	L	L1	Weight kg/each
250	<b>616412</b>	1	1	4	310	770	540	27.400
280	<b>616413</b>	1	1	2	350	905	630	42.200
315	<b>616414</b>	1	1	1	396	940	670	55.900

## T RED XL

## T-Pieces reduced XL



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. Separate fusion zones. Outlet spigot SDR 11 for processing of UB/MB couplers. Other branch dimensions can be created using MR d 225/160 or MR d 110/90 and MR d 110/63. Handling at the construction site is made easy thanks to the fused-on eyebolts.

Other dimensions on request.



### PE 100 SDR 11

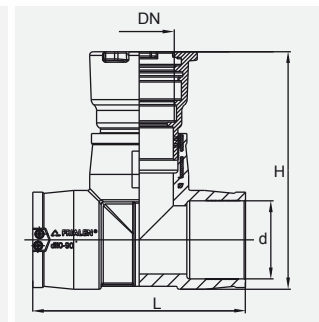
Maximum working pressure 16 bar (water)/10 bar (gas) outlet spigot pipe SDR11

d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	D	L	L1	Weight kg/each
250	225	<b>616427</b>	1	1	2	310	770	440	23.500
280	225	<b>616429</b> ①	3	1	2	350	905	475	35.500
315	225	<b>616431</b>	1	1	2	396	940	525	43.500

① minimum order quantity = 1 packaging unit

## TGB

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



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



### PE 100 SDR 11

Maximum working pressure 16 bar (water)

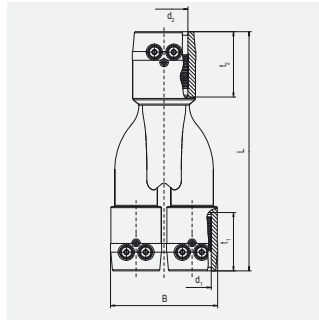
d/DN	Order Ref.	Stock-status	BX	PU	H	L	Weight kg/each
110/80	<b>616147</b>	1	4	16	337	302	7.530
125/80	<b>616148</b> ①	3	3	12	361	314	8.300
160/80	<b>616149</b>	1	2	8	380	390	12.000

① minimum order quantity = 1 packaging unit

## FRIALEN Pipe junction for borehole heat exchangers

**Y**

### Y-pieces with integrated heating coils



Pipe junction (Y piece) in a compact design with 3 integrated couplers with exposed, fixed heating coils for direct heat transfer to the pipe.



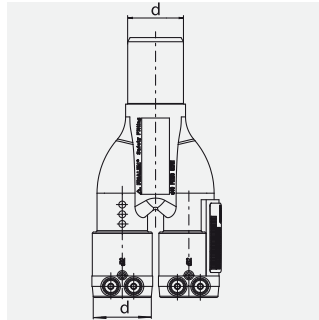
**PE 100 SDR 11**

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

d	Order Ref.	Stock-status	BX	PU	L	Weight kg/each
32-32-40	<b>640034</b>	1	28	504	205	0.230
40-40-50	<b>640036</b>	1	18	324	219	0.340

**YS**

### Y-pieces with integrated heating coils and PE spigot end made of PE 100 SDR 11



Pipe junction (Y piece) in a compact design with 2 integrated couplers and a PE spigot end to connect pipes e.g. FRIALEN elbow 90°.



**PE 100 SDR 11**

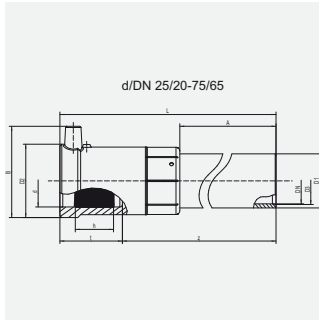
**Maximum working pressure 16 bar (water)/10 bar (gas)**

d	Order Ref.	Stock-status	BX	PU	Weight kg/each
32-32-40	<b>640035</b>	1	28	504	0.190
40-40-50	<b>640037</b>	1	18	324	0.300

# FRIALEN Transition Fittings

USTR

## Transition Fittings HD-PE/Steel



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



### PE 100 SDR 11

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

d/DN	Order Ref.	Stock-status	BX	PU	D <sub>1</sub>	L	Weight kg/each
32/25	<b>612780</b> ①	1	15	360	34	387	0.820
40/32	<b>612781</b> ①	1	10	240	42	393	1.070
50/40	<b>612782</b> ①	1	8	192	48	409	1.320
63/50	<b>612783</b> ①	1	6	144	60	410	1.880
75/65	<b>612789</b>	1	4	96	76	425	4.420
90/80	<b>612784</b> ①	1	1	77	89	405	5.350
110/100	<b>612785</b> ①	1	1	54	114	420	8.380
125/100	<b>612786</b> ①	1	1	45	114	425	8.870
160/150	<b>612787</b>	1	1	24	168	484	17.000
180/150	<b>615030</b>	1	1	18	171	500	21.250
200/200	<b>612795</b>	1	1	12	219	480	27.020
225/200	<b>612370</b>	1	1	11	219	505	27.350

① Front face of steel pipe according to DIN 2559-3, EN 10217-1; ASTM A106/A106M-14

## FRIALEN Transition Fittings

### USTRS

### Transition Fittings HD-PE/Steel (Spigot fittings)



Compact transition fitting. HD-PE spigot for use with FRIALEN couplers MB or UB. Steel pipe permanently anchored in HD-PE and pre-insulated with PE coating. For use in gas systems. Optional available with steel pipe marked by restrutting (according to DVGW for MOP > 5 bar).



#### PE 100 SDR 11

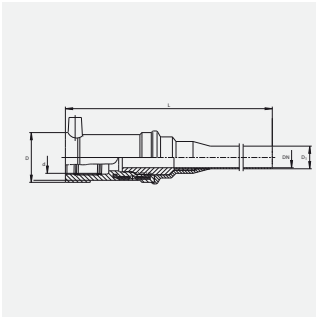
#### Maximum working pressure 10 bar (gas)

d/DN	Order Ref.	Stock-status	BX	PU	D	L	L <sub>1</sub>	Weight kg/each
20/15	616632	3	21	630	45	425	80	0.450
25/20	616633	1	21	630	45	460	90	0.650
32/25	616634	1	18	540	51	460	95	0.950
40/32	616635	3	12	360	63	470	100	1.250
50/40	616636	1	8	240	70	480	110	1.450
63/50	616637	1	6	216	89	480	110	2.150
75/65	616638	3	2	98	95	540	130	2.950
90/80	616639	1	2	98	117	580	140	3.950
110/100	616640	1	2	50	150	585	145	7.050
125/100	616641	1	2	50	150	585	150	7.300
140/125	616642	3	1	25	163	580	155	8.000
160/150	616643	1	1	25	210	610	160	10.500
180/150	616644	1	1	25	210	610	170	11.000
200/200	616645	1	1	16	259	630	155	17.500
225/200	616646	1	1	16	259	610	145	18.000
250/250	616647	3	1	8	324	640	140	30.500
280/250	616648	3	1	8	324	640	160	31.000
315/300	616649	1	1	6	368	725	220	46.500
355/300	616650	3	1	6	368	735	260	48.000
400/400	616651	3	1	3	475	770	190	83.200
500/500	616652	3	1	2	590	1050	365	127.500
630/600	616653	3	1	2	735	1100	430	242.000

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

### UFLG

### Transition Fitting for liquid gas HD-PE/Copper



Compact transition fitting for service pipes in liquefied natural gas installations for the operating of consumer installations from the gas phase. Exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Copper-side not detachable and anchored in HD-PE with no risk of turning. Self-sealing, patented sealing geometry without elastomere sealing. Copper-side from SF Cu-F25, EN 1057 can be connected with the copper pipe through hard-soldering (coupler soldering).



#### PE 100 SDR 11

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

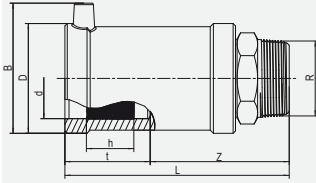
d/DN	Order Ref.	Stock-status	BX	PU	D	D <sub>1</sub>	L	Weight kg/each
32/20	615733	1	25	750	49	22	340	0.510



# FRIALEN Transition Fittings

## USTN

### Transition Fittings HD-PE/Steel with male thread



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

Other thread sizes on request



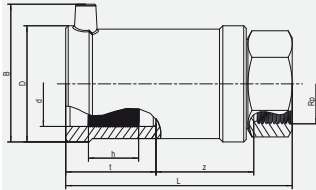
#### PE 100 SDR 11

Maximum working pressure 5 bar (gas)

d	R	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	1"	<b>612580</b>	1	20	1080	47	119	0.345
40	1 1/4"	<b>612582</b>	1	20	800	58	131	0.530
50	1 1/2"	<b>612584</b>	1	15	600	70	146	0.700
63	2"	<b>612586</b>	1	10	400	84	152	1.050

## USTM

### Transition Fittings HD-PE/Steel with female thread



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

Other thread sizes on request



#### PE 100 SDR 11

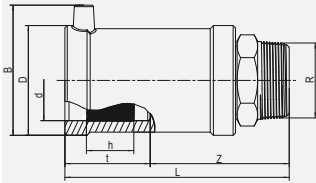
Maximum working pressure 5 bar (gas)

d	Rp	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	1"	<b>612570</b>	1	20	1080	47	112	0.340
40	1 1/4"	<b>612572</b>	1	20	800	58	121	0.500
50	1 1/2"	<b>612574</b>	1	15	600	70	136	0.650
63	2"	<b>612576</b>	1	10	400	84	141	1.010

## FRIALEN Transition Fittings

### MUN

### Transition Fittings HD-PE/Brass with male thread



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

Standard: Brass. Gunmetal on request

Other thread sizes on request



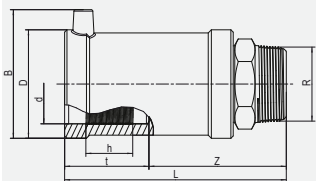
#### PE 100 SDR 11

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

d	R	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	1"	612712	1	20	1440	47	112	0.310
32	1 1/4"	612709	1	20	1080	47	120	0.390
32	1 1/2"	612698	1	15	810	47	121	0.450
40	1"	612721	1	20	800	58	123	0.480
40	1 1/4"	612713	1	20	800	58	126	0.460
40	1 1/2"	612718	1	20	800	58	127	0.520
40	2"	612725	1	20	600	58	132	0.680
50	1"	612719	1	15	600	70	134	0.620
50	1 1/4"	612716	1	15	600	70	136	0.610
50	1 1/2"	612714	1	15	600	70	137	0.620
50	2"	612706	1	15	600	70	147	0.760
63	1 1/4"	612722	1	10	400	84	138	0.910
63	1 1/2"	612717	1	10	400	84	137	0.890
63	2"	612715	1	10	400	84	142	0.920
75	2"	612694	1	10	240	98	165	1.470
75	2 1/2"	612695	1	10	240	98	167	1.490

### MUN V2A

### Transition Fittings HD-PE/Stainless steel with male thread



Compact transition fitting. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Stainless steel end permanently anchored in the HD-PE. Self sealing patented sealing geometry without elastomer seal. For use in water systems.

Other thread sizes on request



#### PE 100 SDR 11

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

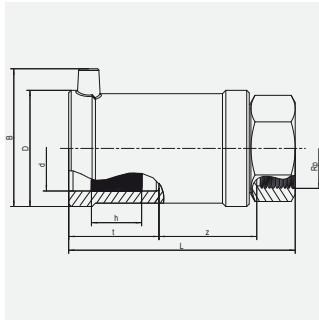
d	R	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
40	1"	616516①	3	20	800	58	123	0.460
40	1 1/2"	612727	1	20	800	58	127	0.495
50	1 1/2"	612726	1	15	600	70	137	0.600
63	1 1/2"	612705	1	10	400	84	137	0.865
63	2"	612899	1	10	400	84	142	0.910

① minimum order quantity = 1 packaging unit

## FRIALEN Transition Fittings

### MUM

### Transition Fittings HD-PE/Gunmetal with female thread



Compact transition fitting. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Gunmetal end permanently anchored in the HD-PE. Cannot be released or rotated. Self sealing patented sealing geometry without elastomer seal. For use in water systems.  
Standard: Gunmetal. Stainless steel on request.

Other thread sizes on request



#### PE 100 SDR 11

Maximum working pressure 16 bar (water)

d	Rp	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	1"	<b>612595</b>	1	20	1080	47	112	0.360
40	1 1/4"	<b>612596</b>	1	20	800	58	121	0.520
50	1 1/2"	<b>612692</b>	1	15	600	70	136	0.650
63	1 1/2"	<b>612708</b>	1	10	300	84	141	1.230
63	2"	<b>612693</b>	1	10	400	84	141	1.050

### UAM ET

### Universal adapter HD-PE/Brass with travelling nut and female thread



Transition adapter, brass end permanently anchored in HD-PE, with traveling nut for a simple and fast assembling on a fixed male pipe thread. For use in Water area. PE pipe spigot SDR11. Length of the spigot not suitable for FRIALONG couplers.

Other thread dimensions on request.



#### PE 100 SDR 11

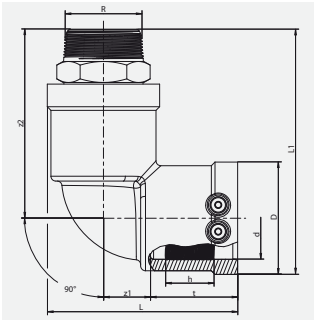
Maximum working pressure 16 bar (water)

d	Rp	Order Ref.	Stock-status	BX	PU	L	t	Weight kg/each
25	3/4"	<b>616654</b>	1	60	2160	110	44	0.160
32	1"	<b>616655</b>	1	30	1080	120	47	0.330
40	1 1/4"	<b>616626</b>	1	20	720	145	56	0.520
50	1 1/2"	<b>616627</b>	3	16	576	150	57	0.650
63	1 1/2"	<b>616629</b>	1	9	324	160	63	0.740
63	2"	<b>616628</b>	3	9	324	170	63	0.920

## FRIALEN Transition Fittings

### WUN 90

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



Compact transition fitting. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Brass end permanently anchored in the HD-PE. Cannot be released or rotated. Self sealing patented sealing geometry without elastomer seal. For use in water systems. Standard: Brass. Gunmetal on request.

Other thread sizes on request



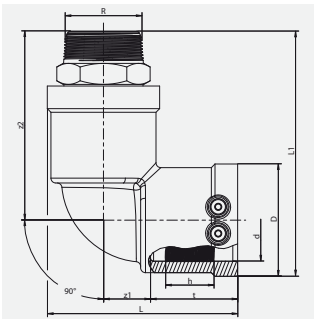
#### PE 100 SDR 11

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

d	R	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
32	1"	<b>612120</b>	1	20	1000	47	85	0.340
32	1 1/2"	<b>612140</b>	1	20	800	47	94	0.470
40	1"	<b>612127</b>	1	15	750	58	102	0.500
40	1 1/4"	<b>612122</b>	1	15	750	58	102	0.520
40	1 1/2"	<b>612121</b>	1	15	750	58	102	0.560
50	1"	<b>612119</b>	1	10	500	70	118	0.680
50	1 1/4"	<b>612123</b>	1	10	500	70	118	0.670
50	1 1/2"	<b>612124</b>	1	10	500	70	118	0.680
63	1 1/2"	<b>612125</b>	1	10	320	84	128	0.980
63	2"	<b>612126</b>	1	10	320	84	128	1.000

### WUN V2A 90

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



Compact transition fitting. HD-PE end with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zone plus cold zones at the end and in the transition area to prevent the flow of molten material for use without holding devices. Stainless steel end permanently anchored in the HD-PE. Cannot be released or rotated. Self sealing patented sealing geometry without elastomer seal. For use in water systems.

Other thread sizes on request



#### PE 100 SDR 11

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

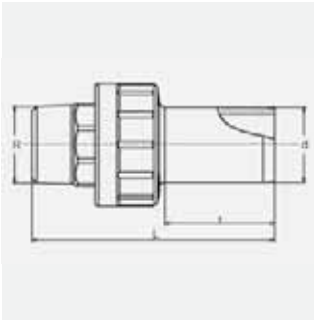
d	R	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
40	1"	<b>616514</b>	1	15	750	58	102	0.540
40	1 1/2"	<b>612148</b>	1	15	750	58	102	0.535
50	1 1/2"	<b>612118</b>	1	10	600	70	118	0.650
63	1 1/2"	<b>612186</b>	1	10	320	84	128	0.980
63	2"	<b>616515</b> ①	3	10	320	84	128	0.950

① minimum order quantity = 1 packaging unit

## FRIALEN Transition Fittings

### UAN

### Universal adapter HD-PE/Brass with male thread



Compact fitting, spigot allows for assembly irrespective of its position and homogenous fusion joint with all suitable FRIALEN fittings. Brass side permanently and tightly connected with PE spigot. Cannot be released or rotated.

Other thread sizes on request  
Lead-free version available on request



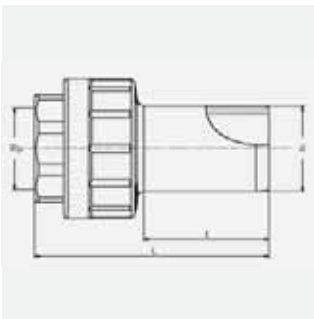
#### PE 100 SDR 11

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

d	R	Order Ref.	Stock-status	BX	PU	L	t	Weight kg/each
20	1/2"	<b>616604</b>	1	70	4200	94	41	0.100
25	3/4"	<b>616605</b>	1	60	3600	92	44	0.150
32	1"	<b>616152</b>	1	30	1800	104	47	0.240
40	1 1/4"	<b>616153</b>	1	20	1200	121	56	0.400
50	1 1/2"	<b>616154</b>	1	16	960	123	57	0.520
63	1 1/2"	<b>616610</b>	1	9	540	136	63	0.620
63	2"	<b>616155</b>	1	9	540	140	63	0.730
75	2 1/2"	<b>616612</b>	1	10	300	155	70	1.200
90	3"	<b>616613</b>	1	8	240	172	78	1.600
110	4"	<b>616614</b>	3	4	120	200	87	2.900
125	4"	<b>616664</b>	3	4	120	200	92	2.950

### UAM

### Universal adapter HD-PE/Brass with female thread



Compact fitting, spigot allows for assembly irrespective of its position and homogenous fusion joint with all suitable FRIALEN fittings. Brass side permanently and tightly connected with PE spigot. Cannot be released or rotated.

Other thread sizes on request  
Lead-free version available on request



#### PE 100 SDR 11

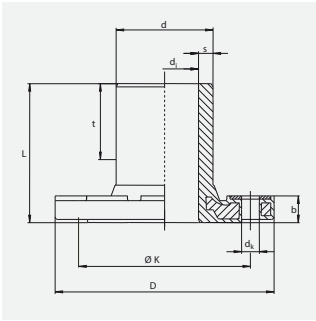
Maximum working pressure 16 bar (water)/5 bar (gas)

d	Rp	Order Ref.	Stock-status	BX	PU	L	t	Weight kg/each
20	1/2"	<b>616615</b>	1	80	4800	79	41	0.080
25	3/4"	<b>616616</b>	1	60	3600	77	44	0.120
32	1"	<b>616156</b>	1	36	2160	88	47	0.190
40	1 1/4"	<b>616157</b>	1	20	1200	100	56	0.290
50	1 1/2"	<b>616158</b>	1	16	960	102	57	0.350
63	1 1/2"	<b>616621</b>	1	10	600	115	63	0.450
63	2"	<b>616159</b>	1	10	600	120	63	0.580
75	2 1/2"	<b>616665</b>	1	10	300	128	70	0.760
90	3"	<b>616623</b>	1	8	240	144	78	1.030
110	4"	<b>616624</b>	3	6	180	161	87	1.870
125	4"	<b>616666</b>	3	6	180	161	92	1.990

## FRIALEN Flange Adaptors

### EFL

### Full Faced Flanges (Spigot fittings)



Flange Adaptor and flange as a factory made flange piece. Metal insert in the flange to prevent creep. Spigot end for use with FRIALEN couplers MB or UB. Steel-reinforced elastomeric gaskets recommended. Please observe the bolting torques of the gasket manufacturer. Additional washers are necessary.



#### PE 100 SDR 11

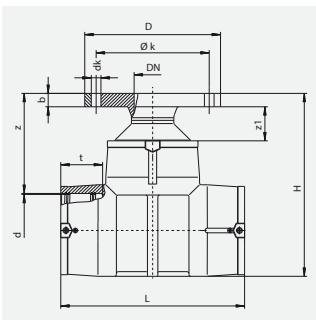
Maximum working pressure 16 bar (water)/10 bar (gas)

d/DN	Order Ref.	Stock-status	BX	PU	D	d <sub>i</sub>	d <sub>k</sub>	L	durch_k	Holes for screw	s	Weight kg/each
63/50	<b>615417</b>	1	5	250	169	51	17.00	105	125	4	5,8	1.500
90/80	<b>615418</b>	1	5	160	204	72	17.00	130	160	8	8,2	2.540
110/100	<b>615419</b>	1	3	96	224	87	17.00	150	180	8	10,0	3.310
125/100	<b>615605</b>	1	2	64	224	101	17.00	160	180	8	11,4	3.280
160/150	<b>615421</b>	1	2	36	288	127	21.00	190	240	8	14,6	6.140
180/150	<b>615927</b>	1	2	36	288	123	21.00	200	240	8	16,4	6.660
225/200	<b>615607</b> ①	1	1	27	343	180	21.00	225	295	8	20,4	9.100

① Flange bore for PN 10

### FLT

### Flange T-Pieces



Compact fitting in HD-PE. Factory made combination made from FRIALEN T-Piece, Reducer and Full Faced Flanges (fixed flange). T-Piece with exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without holding devices. No internal welding bead at the weld seam. Steel-reinforced elastomeric gaskets recommended. Additional washers are necessary for the flange reducer.



#### PE 100 SDR 11

Maximum working pressure 16 bar (water)

d/DN	Order Ref.	Stock-status	BX	PU	D	dk	H	L	Ø k	Holes for screw	Weight kg/each
110/80	<b>615590</b>	1	4	32	204	17.00	316	355	160	8	4.920
125/80	<b>615591</b>	1	3	24	204	17.00	343	384	160	8	5.480
160/80	<b>615592</b>	1	2	16	204	17.00	390	430	160	8	8.050
180/80	<b>615910</b>	1	1	8	204	17.00	416	480	160	8	10.000

#### PE 100 SDR 17

Maximum working pressure 10 bar (water)

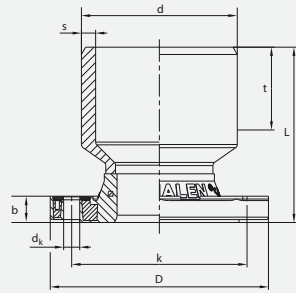
d/DN	Order Ref.	Stock-status	BX	PU	D	dk	H	L	Ø k	Holes for screw	Weight kg/each
225/80	<b>616031</b>	1	2	4	204	17.00	465	580	160	8	15.420



# FRIALEN Flange Adaptors

**FLR**

## Flange Reducer



Compact fitting manufactured by factory from HD-PE reducer and FRIALEN EFL Full Face Flanges. Specially suited for the horizontal connection of flange valves to FRIALEN T-pieces T for reduced branches in DN 80 and DN 100. For the vertical connection of hydrants using our elbow including foot support WF 90° d 110 or the T-piece T, the installation depth must be taken into consideration. No internal welding bead at the weld seam of the reduction. Steel-reinforced elastomeric gaskets recommended. Additional washers are necessary.



**PE 100 SDR 11**

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

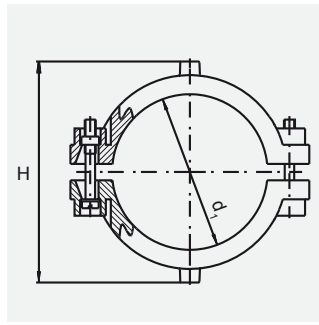
d/DN	Order Ref.	Stock-status	BX	PU	D	d <sub>k</sub>	L	durch_k	Holes for screw	s	Weight kg/each
110/80	<b>616065</b>	1	3	96	204	17.00	161	160	8	10	3.500
160/100	<b>616241</b>	1	2	64	224	17.00	180	180	8	14,6	4.060



## FRIALEN Repair and Reinforcing Saddles

**RS**

### Reinforcing Saddle



Compact fitting manufactured from 2 HD-PE saddles for the repair of minor pipe damage. With exposed heating elements for optimal heat transfer.

**PE 100 SDR 11**

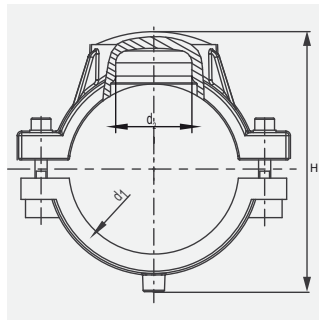
**Maximum working pressure 16 bar (water)/10 bar (gas)**



$d_1$	Order Ref.	Stock-status	BX	PU	H	Weight kg/each
63	<b>612519</b>	1	20	360	106	0.260

**VVS**

### Repair and Reinforcing Saddles



Compact fitting consisting of one repair saddle and one reinforcing saddle for the repair of minor pipe damage. With exposed heating elements for optimal heat transfer.

**PE 100 SDR 11**

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

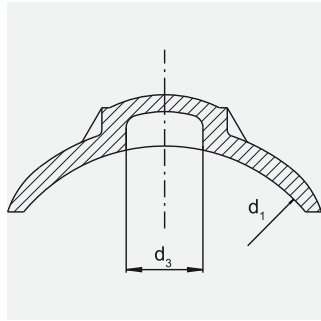


$d_1$	$d_2$	Order Ref.	Stock-status	BX	PU	H	Weight kg/each
90	50	<b>615164</b>	1	24	192	148	0.920
110	50	<b>615165</b>	1	16	128	170	1.162
125	50	<b>615166</b>	1	15	120	183	1.360
160	50	<b>615168</b>	1	10	80	218	1.670
180	50	<b>615169</b>	1	6	48	238	1.810
200	50	<b>615170</b>	1	5	40	258	1.820
225	50	<b>615171</b>	1	5	40	283	1.900

## FRIALEN Repair and Reinforcing Saddles

### VSC TL

### Repair Saddle Top-Loading



Suitable for all pipe diameters in the given range by means of the FRIATOP Clamping Unit (see application picture and Product range FRIATOOLS Ref.-No. 613350).  
 HD-PE saddle for the repair of minor pipe damage with or without escape of fluid.  
 In order to avoid discharge of media the leak has to be sealed with a separate plug\* (<math>d\_3</math>). With exposed heating element for optimal heat transfer.

\*The plug is not included in the scope of delivery.



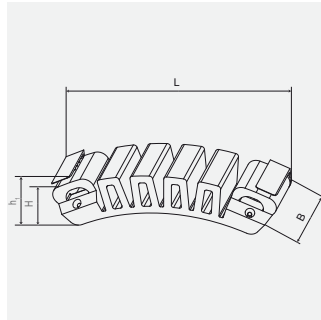
**PE 100 SDR 11**  
**Maximum working pressure 16 bar (water)/10 bar (gas)**

$d_1$	Order Ref.	Stock-status	BX	PU	$d_3$	Weight kg/each
250-560	615397	1	10	180	50	0.570

## FRIALEN Repairs

### FIXBLOC

### Fixation for absorbing axial thrust and tensile forces



The FIXBLOC is used on PE pipes for the creation of fixed point, as a pull-out protection, assembly aid or fixation to pipe bearing. Strength per fixed point up to 40 kN. Multiple applications possible around the pipe circumference. Processing is carried out with standard tensioning belts with belt width 50mm which are guided securely by two belt clips (easily removable). Minimum length approx.  $3,5 \times d$  pipe (longer for multiple applications).  
 If the belt cannot be passed around the circumference of the pipe, the clamping device FIXBLOC FWFB (see application picture; order no. 613380 only for hire) can be used, e.g. in case of a PE-Liner, which must be anchored against the concrete wall of a manhole.

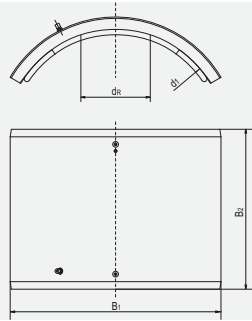
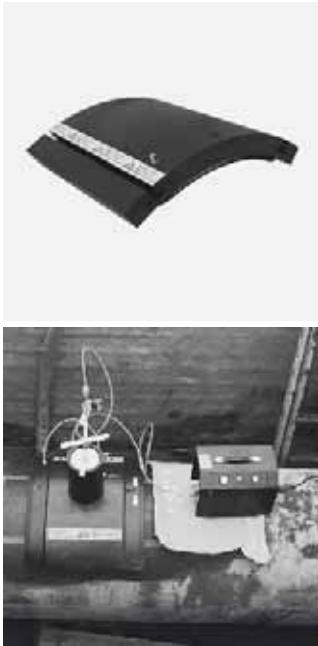
**PE 100**  
**Maximum shear load per FIXBLOC: 40 kN**

$d_1$	Order Ref.	Stock-status	BX	PU	H	L	Weight kg/each
160 - 1600	680600	1	15	750	40	220	0.310

# FRIALEN Repairs

## RS XL

### Repair Saddle RS XL



For the repair of damages such as scratches, grooves or pipe penetration. Compact fitting made of HD-PE. Saddle with exposed heating element for optimal heat transfer.

The RS XL repair saddle is assembled using the FRIATOOLS vacuum pump (see application picture; order no. 613827) and the corresponding FRIATOOLS plunger (see FRIATOOLS product range). The damage must be within the specified repair area  $d_R$  and may not be covered by the fusion zone.

Version SDR11 (MOP 10 / PN 16) available on request.



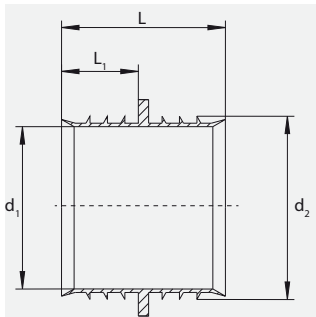
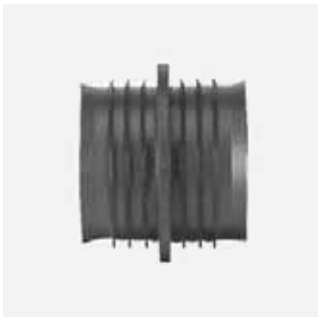
## PE 100 SDR 17

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

$d_1$	Order Ref.	Stock-status	BX	PU	Repair area $d_R$	Weight kg/each
500	<b>616366</b>	3	1	4	230	13.600
560	<b>616367</b>	3	1	4	230	14.300
630	<b>616368</b>	3	1	4	230	15.000
710	<b>616369</b>	3	1	4	230	18.900
800	<b>616370</b>	3	1	4	230	15.800
900	<b>616371</b>	3	1	4	230	17.600
1000	<b>616372</b>	3	1	4	230	16.400
1200	<b>616379</b>	3	1	2	230	16.250

## RW

### Repair Sleeves



For the repair of water service pipes in the depressurised state. Prevents the ingress of water into the fused area of the FRIALEN MB or UB couplers.



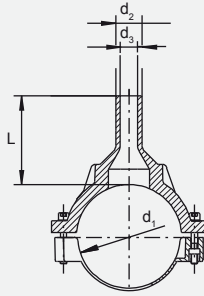
Only suitable for pipes SDR 11

d	$d_1$	$d_2$	Order Ref.	Stock-status	BX	PU	L	$L_1$	Weight kg/each
32	21	27	<b>615127</b>	1	50	4500	35	16	0.004
40	28	34	<b>615128</b>	1	50	2500	35	16	0.005
50	36	42	<b>615129</b>	1	50	2500	35	16	0.007
63	46	53	<b>615130</b>	1	40	2000	47	22	0.012

# FRIALEN Spigot Saddles

SA

## Spigot Saddles



Compact fitting in HD-PE, saddle with exposed heating element for optimal heat transfer and outlet spigot for use with FRIALEN couplers MB or UB. Swarfless tapping in the depressurised state by means of commercial drilling units (we recommend Hütz & Baumgarten ([www.huetz-baumgarten.de](http://www.huetz-baumgarten.de))).

For tapping under pressure, please contact our hotline: +49 621 486-2325.



### PE 100 SDR 11

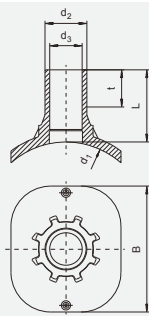
Maximum working pressure 16 bar (water)/10 bar (gas)

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	Drilling Ø d <sub>a</sub>	L	Weight kg/each
63	32	<b>612757</b>	1	20	360	22	20	100	0.330
63	50	<b>612759</b>	1	20	360	37	36	113	0.370
75	50	<b>615020</b>	1	15	270	38	36	82	0.430
90	32	<b>615285</b>	1	20	160	21	20	103	0.700
90	63	<b>612819</b>	1	20	160	50	46	103	0.720
110	32	<b>615334</b>	1	12	96	24	20	125	0.788
110	50	<b>615031</b>	1	12	96	39	36	132	0.816
110	63	<b>612760</b>	1	12	96	49	46	150	0.868
110	90	<b>615411</b>	1	12	96	70	65	115	0.960
125	32	<b>615087</b>	1	12	96	21	20	109	0.945
125	63	<b>612761</b>	1	12	96	47	46	109	0.990
125	90	<b>615412</b>	1	12	96	70	65	116	1.080
125	110	<b>615584</b>	1	10	80	86	84	116	1.150
160	32	<b>612886</b>	1	8	64	21	20	126	1.440
160	63	<b>612762</b>	1	6	48	47	46	140	1.520
160	90	<b>615413</b>	1	2	36	70	65	140	1.640
160	110	<b>615739</b>	1	2	36	86	84	140	1.765
160	125	<b>615585</b>	1	2	36	98	95	140	1.880
180	63	<b>612763</b>	1	6	48	47	46	109	1.190
180	90	<b>615414</b>	1	2	36	70	65	116	1.820
180	110	<b>615948</b>	1	2	36	86	84	136	1.960
180	125	<b>615740</b>	1	2	36	98	95	141	2.110
200	63	<b>612764</b>	1	5	40	47	46	109	1.260
225	63	<b>612765</b>	1	5	40	47	46	109	1.210
225	90	<b>615415</b>	1	5	40	70	65	130	1.950
225	110	<b>616044</b>	1	5	40	86	84	140	1.960
225	125	<b>616045</b>	1	4	32	97	95	146	2.240
225	160	<b>616046</b>	1	4	32	125	123	157	2.580

# FRIALEN Spigot Saddles

SA TL

## Spigot Saddles Top-Loading



Suitable for all pipe diameters in the given range by means of the FRIATOP Clamping Unit (see application picture and product range FRIATOOLS Ref.-Nr. 613350).

Compact fitting in HD-PE. Saddle with exposed heating element for optimal heat transfer and outlet spigot for use with FRIALEN couplers MB or UB. Swarfless tapping in the depressurised state by means of commercial drilling units (we recommend Hütz & Baumgarten ([www.huetz-baumgarten.de](http://www.huetz-baumgarten.de))).

$d_3$  = maximum tapping diameter in mm

For tapping under pressure, please contact our hotline: +49 621 486-2325.



PE 100 SDR 11

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

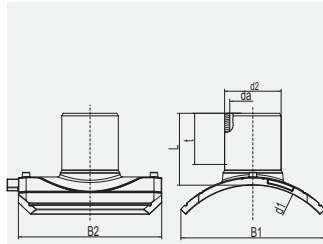


$d_1$	$d_2$	Order Ref.	Stock-status	BX	PU	$d_3$	Drilling $\varnothing d_a$	L	Weight kg/each
250-560	32	<b>615465</b>	1	5	90	21	20	109	0.621
250-560	63	<b>615466</b>	1	5	90	47	46	109	0.676

# FRIALEN Spigot Saddles

## SA UNI

## Spigot Saddles SA UNI



For integration of a branch line in PE pipelines –unpressurised or under operating pressure. Compact fitting made of HD-PE. Saddle with exposed heating element for optimal heat transfer. Outlet spigot for processing with FRIALEN couplers MB or UB. Suitable for all pipe diameters in the given range.

Assembly with clamping unit UNITOP (see product range FRIATOOLS Ref.-No. 613385).

Tapping in unpressurised condition with FRIATOOLS tapping kit FWAB XL (see product range FRIATOOLS).

Pressure test of saddles fusion is possible before tapping via integrated pressure nozzle and pressure test adaptor FWDPA (see product range FRIATOOLS Ref.-No. 613596).

Examples see application pictures.



For tapping under pressure, please contact our hotline: +49 621 486-2325.



### PE 100 SDR 11

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



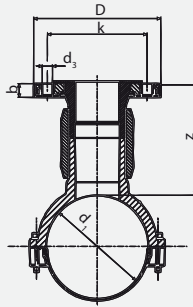
d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
250-280	90	<b>616553</b>	1	5	40	65	130	1.465
250-280	110	<b>616554</b>	1	5	40	84	140	1.610
250-280	125	<b>616555</b>	1	5	40	95	146	1.790
250-280	160	<b>616556</b>	1	5	40	123	158	2.180
315-400	90	<b>616557</b>	1	5	40	65	130	1.485
315-400	110	<b>616558</b>	1	5	40	84	140	1.630
315-400	125	<b>616559</b>	1	5	40	95	146	1.810
315-400	160	<b>616560</b>	1	5	40	123	158	2.190
450-900	90	<b>616561</b>	1	5	40	65	130	1.500
450-900	110	<b>616562</b>	1	5	40	84	140	1.645
450-900	125	<b>616563</b>	1	5	40	95	146	1.820
450-900	160	<b>616564</b>	1	5	40	123	158	2.200

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.

## FRIALEN Spigot Saddles

SAFL

### Spigot Saddles with flange outlet



Compact fitting in HD-PE. Manufactured combination of FRIALEN spigot saddle, coupler and FRIALEN Full Faced Flanges EFL (compact flange). Saddle with exposed heating coil for optimum heat transfer. Tapping in pressure free condition or, using an additional shut-off valve, under operating pressure by means of standard tapping equipment (we recommend Hütz & Baumgarten ([www.huetz-baumgarten.de](http://www.huetz-baumgarten.de))). We recommend steel-reinforced elastomeric gaskets. Additional washers are necessary for the flange reducer.

For tapping under pressure, please contact our hotline: +49 621 486-2325.



#### PE 100 SDR 11

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

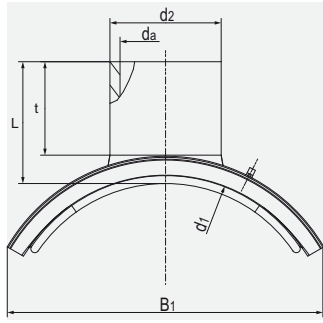
d <sub>1</sub> /DN	Order Ref.	Stock-status	BX	PU	D	d <sub>k</sub>	Drilling Ø d <sub>a</sub>	H	L	durch_k	Holes for screw	Weight kg/each
110/80	<b>616016</b>	1	3	54	204	16.50	65	296	190	160	8	3.700
125/80	<b>616017</b>	1	2	36	204	16.50	65	311	205	160	8	3.940
160/80	<b>616018</b>	1	2	36	204	16.50	65	346	245	160	8	4.320
180/80	<b>616019</b>	1	2	36	204	16.50	65	366	285	160	8	4.610
225/80	<b>616020</b>	1	2	16	204	16.50	65	411	284	160	8	4.720
160/100	<b>616022</b>	1	2	36	224	16.50	84	346	245	180	8	5.270
225/100	<b>616024</b>	1	2	16	224	16.50	84	411	284	180	8	5.635



# FRIALEN Spigot Saddles

## SA XL

## Spigot Saddles SA XL



For integration of a branch line or vent in PE pipelines with large diameters – unpressurised or under operating pressure. Compact fitting made of HD-PE. Saddle with exposed heating element for optimal heat transfer. Outlet spigot for processing with FRIALEN couplers MB or UB.

The SA XL spigot saddle is assembled using a FRIATOOLS vacuum pump (see left application picture; order no. 613827) and the corresponding FRIATOOLS plunger (see product range FRIATOOLS).

Tapping in unpressurised condition with FRIATOOLS tapping kit FWAB XL (see right application picture and product range FRIATOOLS) or, using an additional shut-off valve, under operating pressure using commercially available drilling equipment (we recommend Hütz & Baumgarten: [www.huetz-baumgarten.de](http://www.huetz-baumgarten.de)).



For tapping under pressure, please contact our hotline: +49 621 486-2325.

### PE 100 SDR 11

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
400	225	616469	3	1	4	172	263	14.700
400	250	616779	3	1	4	187	261	15.200
450	225	616780	3	1	4	172	267	17.500
450	250	616781	3	1	4	187	272	18.000
500	225	616391	3	1	4	172	265	14.500
500	250	616782	3	1	4	187	263	15.500
500	280	616783	3	1	4	225	265	15.600
500	315	616784	3	1	4	254	268	21.600
560	225	616392	3	1	4	172	263	15.700
560	250	616785	3	1	4	187	263	17.000
560	280	616786	3	1	4	225	265	17.000
560	315	616787	3	1	4	254	268	19.800
560	355	616788	3	1	4	286	260	26.000
560	400	616789	3	1	4	322	260	27.200
630	225	616393	3	1	4	172	265	17.000
630	250	616790	3	1	4	187	267	17.500
630	280	616791	3	1	4	225	263	18.000
630	315	616792	3	1	4	254	265	20.900
630	355	616793	3	1	4	286	269	23.800
630	400	616794	3	1	4	322	267	25.000
710	225	616394	3	1	4	172	270	20.500
710	250	616795	3	1	4	187	265	22.100
710	280	616796	3	1	4	225	268	21.500
710	315	616797	3	1	4	254	268	23.800
710	355	616798	3	1	4	286	285	28.500
710	400	616762	3	1	4	322	275	29.500
800	225	616395	3	1	4	172	270	17.300
800	250	616799	3	1	4	187	275	18.600
800	280	616800	3	1	4	225	268	18.600
800	315	616801	3	1	4	254	268	20.500
800	355	616802	3	1	4	286	290	31.200
800	400	616803	3	1	4	322	275	31.600

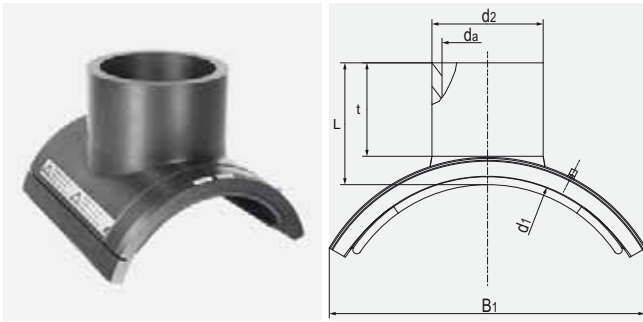
For other dimensions refer to our new product Spigot Saddle SA UNI.

FRIALEN safety fittings can be fused to pipes SDR 11 - SDR 17.6. Other SDR classes on request.

# FRIALEN Spigot Saddles

**SA XL**

**Spigot Saddles SA XL**



**PE 100 SDR 11**

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
900	225	<b>616396</b>	3	1	4	172	268	19.000
900	250	<b>616804</b>	3	1	4	187	278	20.700
900	280	<b>616805</b>	3	1	4	225	268	20.300
900	315	<b>616806</b>	3	1	4	254	269	23.000
900	355	<b>616807</b>	3	1	4	286	305	27.300
900	400	<b>616808</b>	3	1	4	322	275	28.000
1000	225	<b>616397</b>	3	1	4	172	270	18.000
1000	250	<b>616809</b>	3	1	4	187	280	19.300
1000	280	<b>616810</b>	3	1	4	225	270	19.000
1000	315	<b>616811</b>	3	1	4	254	270	21.000
1000	355	<b>616812</b>	3	1	4	286	305	30.800
1000	400	<b>616813</b>	3	1	4	322	278	31.300
1200	225	<b>616384</b>	3	1	4	172	270	17.500
1200	250	<b>616814</b>	3	1	4	187	284	19.200
1200	280	<b>616815</b>	3	1	4	225	270	18.600
1200	315	<b>616816</b>	3	1	4	254	270	20.800
1200	355	<b>616817</b>	3	1	4	286	305	29.600
1200	400	<b>616818</b>	3	1	4	322	278	30.300

For other dimensions refer to our new product Spigot Saddle SA UNI.

FRIALEN safety fittings can be fused to pipes SDR 11 - SDR 17.6. Other SDR classes on request.

**PE 100 SDR 17**

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



d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
1000	160	<b>616378</b>	3	1	4	123	300	17.350
1200	160	<b>616383</b>	3	1	4	123	300	17.200

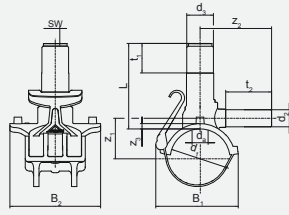
For other dimensions refer to our new product Spigot Saddle SA UNI.

FRIALEN safety fittings can be fused to pipes SDR 11 - SDR 17.6. Other SDR classes on request.

# FRIALEN Pressure Tapping Tees

**DAA**

## Pressure Tapping Tees with extra long outlet spigot



Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integrated drill with solid upper and lower stop, incl. integrated torque limiter. A complete tool-free mounting of the saddle by innovative fast clamping system (RED SNAP). By new design, 54 % of total installation time can be saved.

With exposed heating element for optional heat transfer. End plug with internal O-Ring seal. Optional protection against any access with fusion of the FRIALEN cap K d 50 (order no. 612310)

Only one actuation key FWSS SW 17 (see application picture; order no. 613246) for all dimensions and if necessary as extension ratchet FWSR T (order no. 613615; see product range FRIATOOLS).

Length of the outlet spigots dimensioned for 2 fusion operations.

When using hydrogen, the DAA pressure tapping fitting should only be used in conjunction with sealing cap K (order no. 612310).



**PE 100 SDR 11**

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

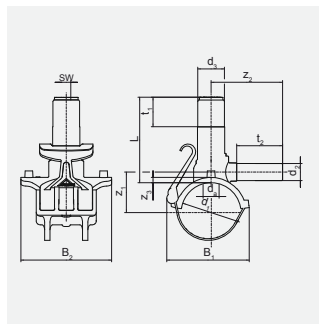
d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	Drilling Ø d <sub>a</sub>	L	Weight kg/each
40	20	<b>612630</b>	1	30	240	50	25	120	0.370
40	25	<b>616473</b>	1	30	240	50	25	120	0.380
40	32	<b>616474</b>	1	30	240	50	25	120	0.385
50	20	<b>616475</b>	1	28	224	50	25	120	0.385
50	25	<b>612702</b>	1	28	224	50	25	120	0.390
50	32	<b>615080</b>	1	28	224	50	25	120	0.400
63	20	<b>612631</b>	1	20	160	50	25	130	0.450
63	25	<b>612633</b>	1	20	160	50	25	130	0.460
63	32	<b>612632</b>	1	20	160	50	25	130	0.465
63	40	<b>616472</b> ①	1	16	128	50	30	160	0.855
63	63	<b>616334</b>	1	16	128	50	30	160	0.635
75	32	<b>616482</b>	1	24	192	50	25	130	0.485
90	20	<b>616483</b>	1	14	112	50	30	160	0.600
90	25	<b>616484</b>	1	14	112	50	30	160	0.610
90	32	<b>612634</b>	1	14	112	50	30	160	0.615
90	40	<b>615656</b> ①	1	14	112	50	30	160	0.950
90	50	<b>616476</b> ①	1	14	112	50	30	160	0.960
90	63	<b>612701</b>	1	14	112	50	30	160	0.730
110	20	<b>616487</b>	1	14	112	50	30	160	0.620
110	25	<b>616488</b>	1	14	112	50	30	160	0.625
110	32	<b>612637</b>	1	14	112	50	30	160	0.630
110	40	<b>615662</b> ①	1	14	112	50	30	160	1.000
110	50	<b>616477</b> ①	1	14	112	50	30	160	1.010
110	63	<b>612624</b>	1	14	112	50	30	160	0.780
125	20	<b>616491</b>	1	12	96	50	30	160	0.650
125	25	<b>616492</b>	1	12	96	50	30	160	0.655
125	32	<b>612649</b>	1	12	96	50	30	160	0.670
125	40	<b>615668</b> ①	1	12	96	50	30	160	1.020
125	50	<b>616478</b> ①	1	12	96	50	30	160	1.030
125	63	<b>612309</b>	1	12	96	50	30	160	0.800
140	32	<b>616495</b>	1	12	96	50	30	160	0.700
140	63	<b>616496</b>	1	12	96	50	30	160	0.830
160	20	<b>616497</b>	1	10	80	50	30	160	0.730
160	25	<b>616498</b>	1	10	80	50	30	160	0.735
160	32	<b>612641</b>	1	10	80	50	30	160	0.745
160	40	<b>615675</b> ①	1	10	80	50	30	160	1.095
160	50	<b>616480</b> ①	1	10	80	50	30	160	1.105
160	63	<b>612650</b>	1	10	80	50	30	160	0.875

① with electrofusion reducers MR d 63/40 or d 63/50

## FRIALEN Pressure Tapping Tees

### DAA

### Pressure Tapping Tees with extra long outlet spigot



**PE 100 SDR 11**

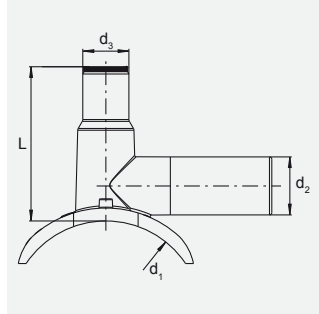
**Maximum working pressure 16 bar (water)/10 bar (gas)**

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	Drilling Ø d <sub>a</sub>	L	Weight kg/each
180	20	<b>616501</b>	3	10	80	50	30	190	0.785
180	25	<b>616502</b>	1	10	80	50	30	190	0.790
180	32	<b>612651</b>	1	10	80	50	30	190	0.790
180	50	<b>616481</b> ①	1	10	80	50	30	190	1.170
180	63	<b>612652</b>	1	10	80	50	30	190	0.940
200	32	<b>612654</b>	1	8	64	50	30	190	0.810
200	63	<b>612659</b>	1	8	64	50	30	190	0.950
225	32	<b>612657</b>	1	8	64	50	30	190	0.835
225	50	<b>616486</b> ①	1	8	64	50	30	190	1.210
225	63	<b>612655</b>	1	8	64	50	30	190	0.980

① with electrofusion reducers MR d 63/40 or d 63/50

### DAA TL

### Pressure Tapping Tee Top-Loading and Top-Loading/Relining with extra long outlet spigot



Suitable for all pipe diameters in the given range by means of the FRIATOP clamping unit (see application picture and product range FRIATOOLS Ref.-No. 613350).

Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper and lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer.

End plugs with internal O-ring seal. Fusible stack (d<sub>3</sub> 50 = K). Pressure test possible before tapping.

For pressure test adapter and actuating key see pictures below and product range FRIATOOLS.

Length of the outlet spigots dimensioned for 2 fusion operations.

Other outlet dimensions with electrofusion reducers MR.



**PE 100 SDR 11**

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



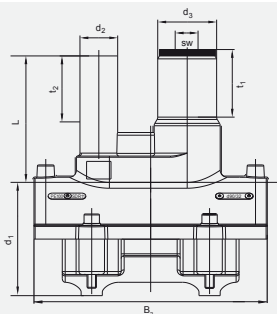
d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	d <sub>3</sub>	Drilling Ø d <sub>a</sub>	L	Weight kg/each
250-315 (400)	63	<b>615339</b> ①	1	4	72	50	30	167	1.360

① d1: d 250 up to d 315 for pipes SDR 11 and 17;  
d1: > d 315 up to d 400 for pipes SDR 17

## FRIALEN Pressure Tapping Tees

**DAP**

### Pressure Tapping Tees with parallel dome and extra long outlet spigot



For space saving horizontal installation. Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper and lower stop, guided in a metal sleeve. With exposed heating element for optimal heat transfer.

End plugs with internal O-ring seal.

Fusible stack ( $d_3$  40 = MV  $d$  40,  $d_3$  50 = K).

Pressure test possible before tapping.

For pressure test adapter and actuating key see pictures below and product range FRIATOOLS.

Length of the outlet spigots dimensioned for 2 fusion operations.



#### PE 100 SDR 11

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

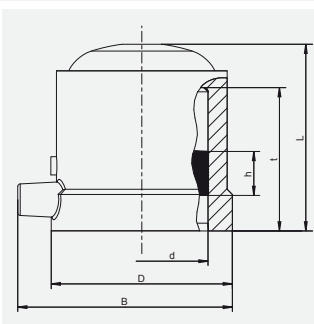
$d_1$	$d_2$	Order Ref.	Stock-status	BX	PU	$d_3$	Drilling $\varnothing d_a$	L	Weight kg/each
63	32	<b>616042</b>	1	16	288	40	21	125	0.630
90	32	<b>616043</b> ①	1	16	128	50	30	115	1.100
110	32	<b>615581</b>	1	12	96	50	30	158	1.280
110	50	<b>615606</b>	1	12	96	50	30	158	1.380
125	32	<b>615711</b>	1	12	96	50	30	158	1.310
125	50	<b>615712</b>	1	12	96	50	30	158	1.360
160	32	<b>615713</b>	1	8	64	50	30	170	1.540
160	50	<b>615714</b>	1	8	64	50	30	170	1.560
180	32	<b>615715</b>	1	6	48	50	30	170	1.540
180	50	<b>615716</b>	1	6	48	50	30	170	1.560
225	32	<b>615717</b> ②	3	6	48	50	30	170	1.570
225	50	<b>615718</b>	1	6	48	50	30	170	1.590

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

② minimum order quantity = 1 packaging unit

**K**

### Cap for Pressure Tapping Tees



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

When using hydrogen, it is mandatory to use the cap K with the pressure tapping fitting DAA.



#### PE 100 SDR 11

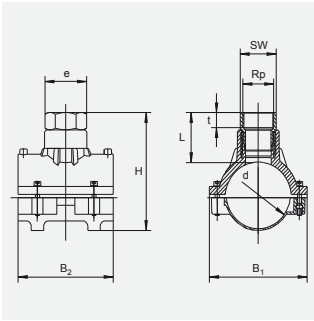
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
50	<b>612310</b>	1	30	960	69	72	0.110

## FRIALEN Valve Tapping Saddles

### VAM RG

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



Compact transition fitting. HD-PE-saddle with exposed heating element for optimal heat transfer. Gunmetal adapter permanently anchored in the HD-PE. Cannot be released or rotated. To accept normal commercial brass valves. Metallic materials in contact with drinking water acc. to the recommendation of Umweltbundesamt, Germany.

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



#### PE 100 SDR 11

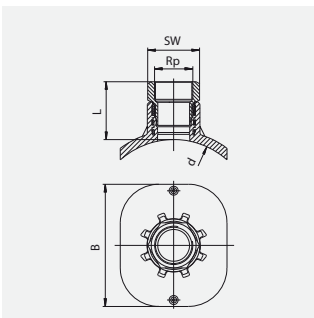
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Rp	Order Ref.	Stock-status	BX	PU	H	L	Weight kg/each
63	1 1/4"	<b>612794</b> ①	3	20	360	146	75	0.730
63	1 1/2"	<b>612743</b>	1	20	360	149	78	0.780
75	1 1/4"	<b>615213</b>	1	15	270	161	76	0.850
90	1 1/2"	<b>612798</b>	1	16	128	172	68	1.370
90	2"	<b>612778</b> ①	3	16	128	199	95	1.560
110	1 1/2"	<b>612732</b>	1	12	96	182	70	1.488
110	2"	<b>612733</b>	1	12	96	205	92	1.684
125	1 1/2"	<b>612734</b> ①	3	12	96	207	68	1.610
125	2"	<b>612735</b>	1	12	96	234	95	1.850
160	1 1/2"	<b>612728</b> ①	3	8	64	242	68	1.800
160	2"	<b>612729</b>	1	8	64	269	95	2.040
180	1 1/2"	<b>612774</b>	1	7	56	250	68	1.780
180	2"	<b>612776</b>	1	7	56	277	95	1.990
225	2"	<b>612827</b>	1	5	40	322	95	1.990

① minimum order quantity = 1 packaging unit

### VAM RG TL

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



Suitable for all pipe diameters in the given range by means of the FRIATOP Clamping Unit (see application picture and product range FRIATOOLS Ref.-No. 613350).

Compact transition fitting. HD-PE saddle with exposed heating element for optimal heat transfer. Gunmetal adapter permanently anchored in the HD-PE. Cannot be released or rotated. To accept normal commercial brass valves. Metallic materials in contact with drinking water acc. to the recommendation of Umweltbundesamt, Germany.

Dimension range d 250 – d 560 fusible as standard using the top-loading method. Please note the maximum permissible wall thickness for tapping in the dimension range > d 315 - d 560. If required, please contact the manufacturer of the tapping equipment.

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



#### PE 100 SDR 11

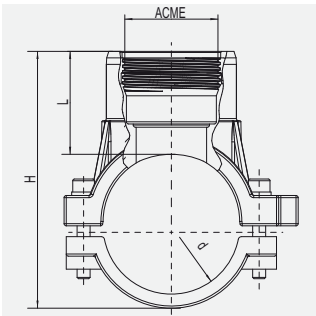
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Rp	Order Ref.	Stock-status	BX	PU	L	Weight kg/each
250-315 (560)	2"	<b>615470</b>	1	8	144	90	1.505

## FRIALEN Valve Tapping Saddles

VAM P

### Valve Tapping Saddles for irrigation systems, female thread for adaption to PVC-U fittings



Compact saddle fitting with threaded outlet for the jointing of irrigation systems for green fields, e.g. playing fields or golf courses. HD-PE saddle with exposed heating element for optimal heat transfer. Integrated threaded brass sleeve for safe adaption of PVC-ACME fittings.

#### ACME - Thread

PE 100 SDR 11

Maximum working pressure 10 bar (water)

d	Thread	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	H	L	Weight kg/each
63	ACME 1"	616544①	3	20	360	20	117	48	0.430
63	ACME 1 1/4"	616543①	3	20	360	30	117	48	0.450
63	ACME 1 1/2"	616551①	3	20	360	30	117	48	0.460

① minimum order quantity = 1 packaging unit



#### BSP - Thread

PE 100 SDR 11

Maximum working pressure 10 bar (water)

d	Thread	Rp	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	H	L	Weight kg/each
63	BSP	1 1/4"	616463①	3	20	360	28	117	48	0.450

① minimum order quantity = 1 packaging unit

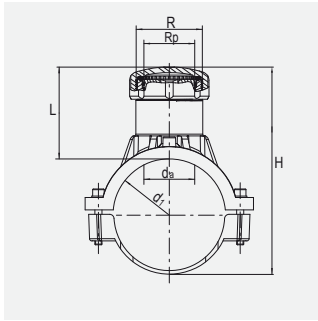




# FRIALEN Shut off Saddles

SPA

## Balloon Shut off Saddles



Compact fitting suitable for available balloon shut-off equipment. HD-PE saddle with exposed heating element for optimal heat transfer. Brass-guide thread permanently and immovably anchored in the HD-PE. Cannot be released or rotated. Includes brass plugs with square recess. Protection against access to the stack by fusing on a FRIALEN SPAK (when using d 63 through cap K order no. 612310).



### PE 100 SDR 11

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



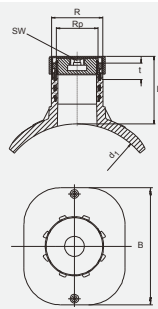
d <sub>1</sub>	R	R <sub>p</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	H	L	Weight kg/each
63	G 1 1/2	G 1 1/8	<b>612753</b> ①	1	20	360	31,0	151	80	0.610
90	G 2 1/2	G 2	<b>612677</b>	1	16	128	56,5	197	104	1.380
110	G 2 1/2	G 2	<b>612750</b>	1	12	96	56,5	217	104	1.540
125	G 2 1/2	G 2	<b>612751</b>	1	12	96	56,5	232	104	1.710
160	G 2 1/2	G 2	<b>612752</b>	1	8	64	56,5	267	104	1.860
180	G 2 1/2	G 2	<b>612754</b>	1	7	56	56,5	287	104	1.860
200	G 2 1/2	G 2	<b>612755</b>	1	6	48	56,5	307	104	1.830
225	G 2 1/2	G 2	<b>612756</b>	1	5	40	56,5	332	104	1.850

① Shut off Saddles d 63 may only be processed using pipes up to SDR 11.

## FRIALEN Shut off Saddles

### SPA TL

### Balloon Shut off Saddles Top-Loading



Suitable for all pipe diameters in the given range by means of the FRIATOP Clamping Unit (see application picture and product range FRIATOOLS Ref.-No. 613350).

Compact saddle fitting suitable for available balloon shut-off equipment. HD-PE saddle with exposed heating element for optimal heat transfer. Brass guide thread permanently anchored in the HD-PE. Cannot be released or rotated. Includes brass plugs with square recess. Protection against access to the stack by fusing on a FRIALEN SPAK.

Dimension range d 250 – d 560 fusible as standard using the top-loading method. Please note the maximum permissible wall thickness for tapping in the dimension range > d 315 - d 560.

If required, please contact the manufacturer of the tapping equipment. Please note manufacturer's instructions.



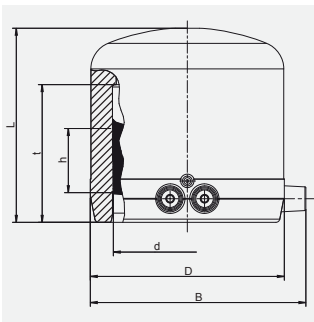
#### PE 100 SDR 11

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

d <sub>1</sub>	R	R <sub>p</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
250-315 (560)	G 2 1/2	G 2	615395	1	18	144	56,5	115	1.358

### SPAK

### Cap for Balloon Shut off Saddles



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



#### PE 100 SDR 11

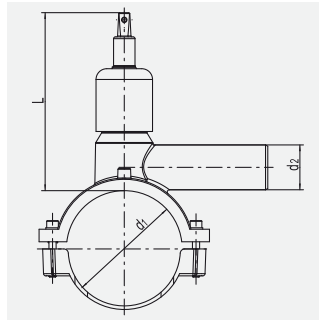
Maximum working pressure 16 bar (water)/10 bar (gas)

d	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
75	612311	1	20	640	99	99	0.280

## FRIALEN Pressure Tapping Valves

DAV

### Pressure Tapping Valves with extra long outlet spigot



Compact fitting in HD-PE with no threaded connections. Actuating spindle in stainless steel 1.4305. No re-insulating required. Leak free and swarfless tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper and lower stop, guided in a metal sleeve. Max. 10 turns to activate "OPEN/CLOSE". With exposed heating element for optimal heat transfer. Maintenance free, operating isolating valve actuated by a rod (e.g. FRIALEN EBS). Length of the outlet spigots dimensioned for 2 fusion operations. Four cornered shaft wrench size 14 mm.



PE 100 SDR 11

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

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
50	32	615955 <sup>⑤</sup>	1	16	288	20	164	1.310
63	32	615341 <sup>⑤</sup>	1	16	288	20	164	0.950
63	40	615342 <sup>⑤</sup>	1	16	288	20	164	0.970
75	32	615956 <sup>⑤</sup>	1	12	216	20	164	1.390
90	32	615344 <sup>④</sup>	1	12	96	30	200	1.750
90	40	615617 <sup>①④</sup>	1	12	96	30	200	1.970
90	50	615346 <sup>④</sup>	1	12	96	30	200	1.800
90	63	615347 <sup>④</sup>	1	12	96	30	200	1.870
125	32	615352 <sup>④</sup>	1	10	80	30	200	2.185
125	40	615625 <sup>①④</sup>	1	10	80	30	200	2.385
125	50	615354 <sup>④</sup>	1	10	80	30	200	2.245
125	63	615355 <sup>④</sup>	1	10	80	30	200	2.320
140	63	615930 <sup>④</sup>	1	10	80	30	200	2.290
160	32	615356 <sup>②</sup>	1	6	48	30	251	2.670
160	40	615629 <sup>①②</sup>	1	6	48	30	251	2.965
160	50	615358 <sup>②</sup>	1	6	48	30	251	2.750
160	63	615359 <sup>②</sup>	1	6	48	30	251	2.810
180	32	615361 <sup>③</sup>	1	5	40	30	251	2.680
180	40	615633 <sup>①③</sup>	1	5	40	30	251	2.975
180	50	615363 <sup>③</sup>	1	5	40	30	251	2.760
180	63	615364 <sup>③</sup>	1	5	40	30	251	2.820
200	32	615366 <sup>③</sup>	1	5	40	30	251	2.770
200	50	615368 <sup>③</sup>	1	5	40	30	251	2.830
200	63	615369 <sup>③</sup>	1	5	40	30	251	2.900
225	32	615374 <sup>②</sup>	1	5	40	30	251	2.790
225	40	615641 <sup>①②</sup>	1	5	40	30	251	3.070
225	50	615376 <sup>②</sup>	1	5	40	30	251	2.850
225	63	615377 <sup>②</sup>	1	5	40	30	251	2.920

① with electrofusion reducers MR d 50/40.

② Discontinued articles until the end of Q2 2021

③ Discontinued articles until the end of Q3 2021

④ Discontinued articles until the end of Q4 2021

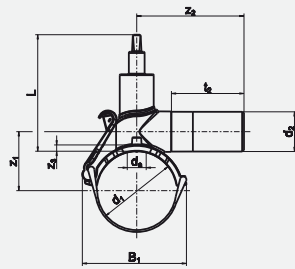
⑤ Discontinued articles until the end of Q1 2022

## FRIALEN Pressure Tapping Valves

DAV

### Pressure Tapping Valves with extra long outlet spigot and fast clamping lever RED SNAP

NEW



Compact fitting in HD-PE with no threaded connection. Actuating spindle in stainless steel 1.4305. No re-insulating required. Leak free and swarf-less tapping up to 10 bar (gas) or 16 bar (water). Integral drill with upper and lower stop, guided in a metal sleeve. Max. 9 turns to activate "OPEN/CLOSE".

A complete tool-free mounting of the saddle by innovative fast clamping system (RED SNAP). By new design, 50 % of total installation time can be saved.

With exposed heating element for optional heat transfer. Maintenance free, operating isolating valve actuated by a rod (e.g. FRIALEN EBS). Length of the outlet spigots dimensioned for 2 fusion operations. Four cornered shaft wrench size 14 mm.



PE 100 SDR 11

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

	d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
NEW	50	32	617024 <sup>⑤</sup>	1	16	288	30	177	1.060
NEW	63	32	617025 <sup>⑤</sup>	1	16	288	30	177	1.100
NEW	63	40	617026 <sup>①⑤</sup>	1	12	216	30	177	1.430
NEW	63	63	616952 <sup>⑤</sup>	1	12	216	30	177	1.210
NEW	75	32	617027 <sup>⑤</sup>	1	12	216	30	177	1.120
NEW	90	32	616960 <sup>④</sup>	1	12	96	30	183	1.230
NEW	90	40	616961 <sup>④</sup>	1	12	96	30	183	1.240
NEW	90	50	616962 <sup>④</sup>	1	12	96	30	183	1.280
NEW	90	63	616963 <sup>④</sup>	1	12	96	30	183	1.350
NEW	110	32	616964	1	12	96	30	183	1.229
NEW	110	40	616965	1	12	96	30	183	1.239
NEW	110	50	616966	1	12	96	30	183	1.284
NEW	110	63	616967	1	12	96	30	183	1.356
NEW	125	32	616968 <sup>④</sup>	1	10	80	30	183	1.270
NEW	125	40	616969 <sup>④</sup>	1	10	80	30	183	1.280
NEW	125	50	616970 <sup>④</sup>	1	10	80	30	183	1.330
NEW	125	63	616971 <sup>④</sup>	1	10	80	30	183	1.400
NEW	140	32	616972 <sup>④</sup>	1	10	80	30	183	1.300
NEW	140	63	616973 <sup>④</sup>	1	10	80	30	183	1.430
NEW	160	32	616974 <sup>②</sup>	1	6	48	30	208	1.440
NEW	160	40	616975 <sup>②</sup>	1	6	48	30	208	1.450
NEW	160	50	616976 <sup>②</sup>	1	6	48	30	208	1.490
NEW	160	63	616977 <sup>②</sup>	1	6	48	30	208	1.570
NEW	180	32	616978 <sup>③</sup>	1	5	40	30	208	1.440
NEW	180	40	616979 <sup>③</sup>	1	5	40	30	208	1.450
NEW	180	50	616980 <sup>③</sup>	1	5	40	30	208	1.500
NEW	180	63	616981 <sup>③</sup>	1	5	40	30	208	1.570
NEW	200	32	616982 <sup>③</sup>	1	5	40	30	208	1.450
NEW	200	63	616984 <sup>③</sup>	1	5	40	30	208	1.590
NEW	225	32	616985 <sup>②</sup>	1	5	40	30	208	1.470
NEW	225	40	616986 <sup>②</sup>	1	5	40	30	208	1.490
NEW	225	50	616987 <sup>②</sup>	1	5	40	30	208	1.540
NEW	225	63	616988 <sup>②</sup>	1	5	40	30	208	1.620

① with electrofusion reducers MR d 63/40.

② New product design available from Q4 2020.

③ New product design available from Q1 2021.

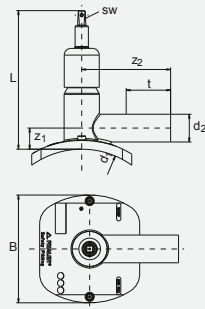
④ New product design available from Q2 2021.

⑤ New product design available from Q3 2021.

## FRIALEN Pressure Tapping Valves

### DAV TL

### Pressure Tapping Valve Top-Loading with extra long outlet spigot



For flexible adaptation to all pipe diameters in indicated range by means of the FRIATOP Clamping device (see application picture and product range FRIATOOLS Ref.-No. 613350). Stainless steel activating spindle 1.4305. No further insulation necessary.

Leak and swarf free tapping up to 10 bar (gas) and 16 bar (water). Integrated drill with upper and lower stop, guided in a metal sleeve. With exposed heating coils for optimal heat transfer. Maintenance free, operating shut-off valve actuated by a rod (e.g. FRIALEN EBS). Length of the outlet spigot dimensioned for 2 fusion operations. Four cornered shaft wrench size 14mm



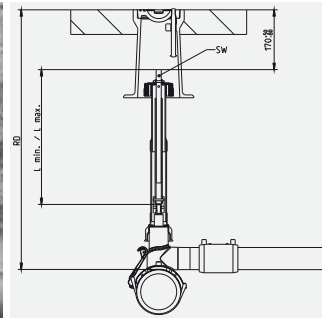
#### PE 100 SDR 11

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

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	L	Weight kg/each
250-315	63	<b>616464</b>	1	7	56	30	251	2.455
355-400	63	<b>616465</b>	1	7	56	30	251	2.459

### DBS (EBS)

### Installation kit for Pressure Tapping Valves with KlickFix® system



New telescopic actuating rod DBS (EBS) for operation of the new DAV from the street cap. Stepless adjustment in the stated range (RD) without the use of tools, even in the installed state. Self supporting in any extended position.

- New with a snap-in function at the DAV and a removable sponge rubber ring.
- With KlickFix coupler for easy installation.
- The older version of the EBS actuating linkage can also be locked on the new DAV with the individually available adapter set „WD336“.
- It is also possible to mount the new DBS actuating linkage on the older version of the DAV.

Self supporting in any extended position. Corrosion protected.

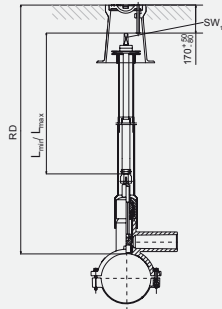
For DAV d<sub>1</sub> < 90 please deduct 50 mm and for d<sub>1</sub> > 125 please add 50 mm. (See also dimension L of the DAV)

RD in m	Order Ref.	Stock-status	BX	PU	SW <sub>1</sub>	Weight kg/each
0,45-0,7	<b>616998</b>	1	1	42	14	1.740
0,7-1,0	<b>616999</b>	1	1	42	14	2.150
0,9-1,3	<b>617000</b>	1	1	42	14	2.650
1,2-1,8	<b>617001</b>	1	1	42	14	3.600
1,8-2,7	<b>617002</b>	3	1	42	14	3.600
2,6-3,5	<b>617003</b>	3	1	42	14	4.500

## FRIALEN Pressure Tapping Valves

### EBS

### Installation kit for Pressure Tapping Valves



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

Dimension RD valid for DAV  $d_1 = 90 - 125$ .

For DAV  $d_1 < 90$  please deduct 50 mm and for  $d_1 > 125$  please add 50 mm. (See also dimension L of the DAV)

RD in m	Order Ref.	Stock-status	BX	PU	SW <sub>1</sub>	Weight kg/each
0,45-0,7	<b>615866</b> ①	1	1	42	14	1.500
0,7-1,0	<b>615867</b> ①	1	1	42	14	1.950
0,9-1,3	<b>615335</b> ①	1	1	42	14	2.450
1,2-1,8	<b>615325</b> ①	1	1	42	14	3.350
1,8-2,7	<b>616327</b> ①	3	1		14	3.600
2,6-3,5	<b>616328</b> ①	3	1		14	4.500

① Discontinued items, while stocks last

## FRIALEN Purge stack

### GAB

### Purge stack GAB for venting PE-HD gas pipes



The FRIALEN purge stack GAB is used for venting pressurized gas pipes during filling or in operation for use as a measuring point fitting for verification of the odorization content.

The FRIALEN purge stack GAB is available in two versions:

- with blow-out 1" and purge stack plate available in square design,
- with blow-out 2" and purge stack plate available in diagonal design.

The venting pipe of the FRIALEN purge stack GAB is one metre long as standard and can be adapted to the respective cover height on site. Longer venting pipes are available on request, please note when ordering. The actuating rods (installation set EBS) can be infinitely adjusted within the specified range without additional tools.

### PE 100 SDR 11

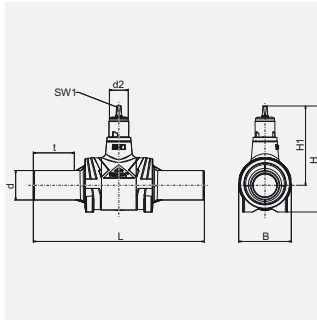
### Maximum working pressure 10 bar (gas)

$d_1$	R	RD in m	Order Ref.	Stock-status	BX	PU	Weight kg/each
63	1"	0,7 - 1,0	<b>2006380</b>	3	1	1	4.440
63	2"	0,7 - 1,0	<b>2006383</b>	3	1	1	6.710
90	1"	0,7 - 1,0	<b>2009080</b>	3	1	1	5.240
90	2"	0,7 - 1,0	<b>2009083</b>	3	1	1	7.400
110	1"	0,7 - 1,0	<b>2011080</b>	3	1	1	5.500
110	2"	0,7 - 1,0	<b>2011083</b>	3	1	1	7.650
125	1"	0,7 - 1,0	<b>2012580</b>	3	1	1	5.700
125	2"	0,7 - 1,0	<b>2012583</b>	3	1	1	7.850
160	1"	0,7 - 1,0	<b>2016080</b>	3	1	1	6.200
160	2"	0,7 - 1,0	<b>2016083</b>	3	1	1	8.330
180	1"	0,7 - 1,0	<b>2018080</b>	3	1	1	6.200
180	2"	0,7 - 1,0	<b>2018083</b>	3	1	1	8.340
225	1"	0,7 - 1,0	<b>2022580</b>	3	1	1	6.300
225	2"	0,7 - 1,0	<b>2022583</b>	3	1	1	8.440

## FRIALEN Shut-Off Valve

### FRIALOC

### Shut-Off Valve with shut-off mechanism suitable for plastics Application: Water



Facilitates the completely fused and homogeneous PE piping. Thanks to the innovative mechanism, a reliable shut-off can be achieved with only 9 or 14 turns and without major force. Very low-wear drive. A forced flushing prevents dead spaces and stagnation. The small sealing area minimises biological growth. The free passage corresponds up to d180 mm to the connecting pipe SDR 11. Each individual FRIALOC PE shut-off valve is subjected to comprehensive tests at the factory. The valve is operated using the installation kit FBS. Four cornered shaft wrench size 19 mm.



#### PE 100 SDR 11

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

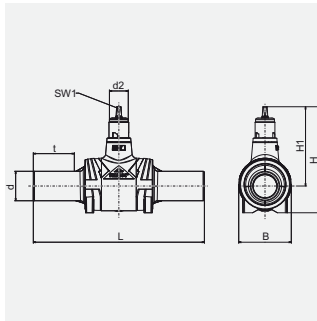
d	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	H	L	SW <sub>1</sub>	Weight kg/each
90	80	<b>616293</b>	1	1	8	450	720	19	13.900
110	80	<b>616294</b>	1	1	8	450	720	19	14.200
125	80	<b>616295</b>	1	1	8	450	720	19	14.500
160	80	<b>616296</b>	1	1	2	608	1010	19	44.000
180	80	<b>616297</b>	1	1	2	608	1030	19	39.000
200	80	<b>616453</b> ①②	3		2	608	1030	19	40.500
225	80	<b>616298</b> ①	1	1	2	608	1030	19	40.500
250	80	<b>616438</b> ①②	3		2	608	1030	19	41.940

① maximum clearance diameter d 180

② minimum order quantity = 1 pallet unit

### FRIALOC ACW

### PE-Shut-Off Valve with plastic compatible shut-off mechanism (counterclockwise closing). Application area: Water



Facilitates the completely fused and homogeneous PE piping. Thanks to the innovative mechanism, a reliable shut-off can be achieved with only 9 or 14 turns and without major force. Very low-wear drive. A forced flushing prevents dead spaces and stagnation. The small sealing area minimises biological growth. The free passage corresponds up to d180 mm to the connecting pipe SDR 11. Each individual FRIALOC PE shut-off valve is subjected to comprehensive tests at the factory. The valve is operated using the installation kit FBS. Four cornered shaft wrench size 19 mm.



#### PE 100 SDR 11

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

d	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	H	L	SW <sub>1</sub>	Weight kg/each
90	80	<b>616991</b>	1	1	8	450	720	19	13.900
110	80	<b>616992</b>	1	1	8	450	720	19	14.200
125	80	<b>616993</b>	1	1	8	450	720	19	14.500
160	80	<b>616994</b>	1	1	2	608	1010	19	44.000
180	80	<b>616995</b>	1	1	2	608	1030	19	39.000
200	80	<b>616996</b> ①	3	1	2	608	1030	19	40.500
225	80	<b>616997</b> ①	1	1	2	608	1030	19	40.500

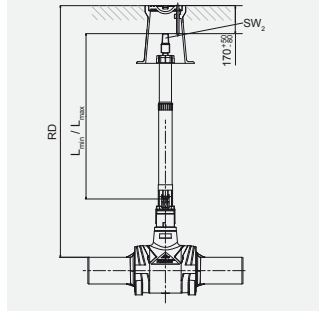
① maximum clearance diameter d 180



## FRIALEN Shut-Off Valve

**FBS**

**Installation kits FBS for FRIALOC® PE shut-off valves with KlickFix® system.**



To operate the FRIALOC PE shut-off valve from the surface box. Optimally matched, can be individually extended to the required covering height. With KlickFix coupler for easy installation. Made of galvanised steel or stainless steel.

### bars of hot zinc dipped steel

RD in m	Order Ref.	Stock-status	BX	PU	SW <sub>2</sub>	Weight kg/each
0,75 - 1,0	<b>616308</b>	1	1	42	30	2.500
0,9 - 1,3	<b>616309</b>	1	1	42	30	2.950
1,2 - 1,8	<b>616310</b>	1	1	42	30	3.850
1,5 - 2,3	<b>616318</b>	1	1	42	30	4.400

### bars of stainless steel

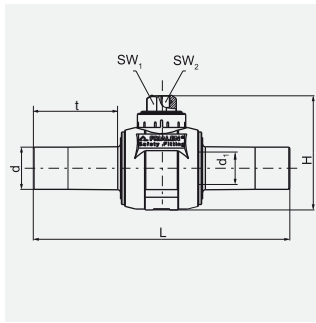
RD in m	Order Ref.	Stock-status	BX	PU	SW <sub>2</sub>	Weight kg/each
0,75 - 1,0	<b>616315</b>	3	1	42	30	2.400
0,9 - 1,3	<b>616316</b>	1	1	42	30	2.800
1,2 - 1,8	<b>616317</b>	1	1	42	30	3.450
1,5 - 2,3	<b>616319</b>	3	1	42	30	4.150
2,4 - 3,5	<b>616326</b>	3	1		30	6.350

Other lengths on request.

## FRIALEN Ball Valves

### KHP

### Ball Valves in HD-PE with NBR-sealing, 1/4-Turn



Compact ball valve in HD-PE with spigots for use with FRIALEN couplers MB or UB. No corrosion proofing required. Open and closed position with definite stop. Maintenance free ball valve, operated by a rod (e.g. FRIALEN BS Installation kits for Ball Valves and Tapping Ball Valves). Maximum clearance diameter  $d_1$ .



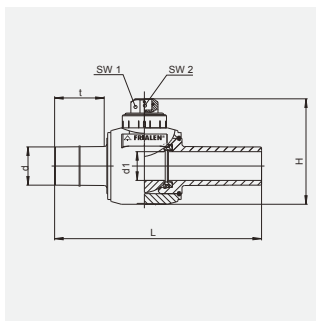
#### PE 100 SDR 11

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

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

### KH

### Ball Valves in HD-PE with NBR-sealing, 1/4-Turn, full port passage



Compact ball valve made from HD-PE with spigots for processing with FRIALEN MB or UB couplers. Full port valve passage in line with internal diameter of pipe socket. No corrosion prevention measures necessary. Open and closed position at defined stop. Maintenance free shut-off valve activated by a rod (e.g. FRIALEN BS Installation kits for Ball Valves and Tapping Ball Valves).



#### PE 100 SDR 11

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

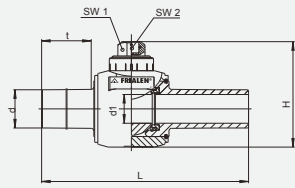
d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	H	L	SW <sub>1</sub>	SW <sub>2</sub>	Weight kg/each
20	24	616470	3	1	170	138	310	50 x 50	20	0.500
25	24	616471	1	1	170	138	310	50 x 50	20	0.550
32	34	616176	1	1	100	156	324	50 x 50	20	0.770
40	34	616177	1	1	100	156	324	50 x 50	20	0.800
50	43	616178 <sup>①</sup>	1	1	50	193	405	50 x 50	25	2.240
63	51	616179	1	1	50	206	410	50 x 50	25	2.420
90	98	616180	1	1	18	288	577	50 x 50	25	6.600
110	98	616181	1	1	18	288	577	50 x 50	25	6.750
125	98	616182	1	1	18	288	577	50 x 50	25	6.900

<sup>①</sup> Please choose the suitable installation kit d 63 - d 225

## FRIALEN Ball Valves

**KHW**

### Ball Valves in HD-PE suitable for drinking water, 1/4-Turn, full port passage



Compact ball valve made from HD-PE with spigots for processing with FRIALEN MB or UB couplers. Full port valve passage in line with internal diameter of pipe socket. No corrosion prevention measures necessary. Open and closed position at defined stop. Maintenance free shut-off valve activated by a rod (e.g. FRIALEN BS Installation kits for Ball Valves and Tapping Ball Valves).



**PE 100 SDR 11**

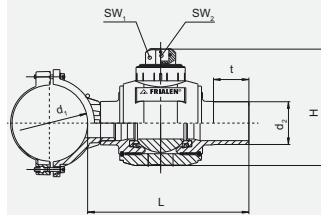
**Maximum working pressure 16 bar (water)**

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

① Please choose the suitable installation kit d 63 - d 225

**AKHP**

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



Compact tapping ball valve in HD-PE. Factory made combination of FRIALEN Saddle Moulding and FRIALEN Ball Valve with spigot for space and cost saving horizontal installation especially for integration of branches into mains under operating pressure. Leakage and swarf free tapping up to 10 bar (gas) and standard tapping equipment (we recommend Hütz & Baumgarten ([www.huetz-baumgarten.de](http://www.huetz-baumgarten.de))). With exposed heating element for optimal heat transfer.



**PE 100 SDR 11**

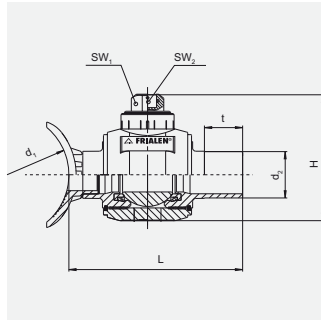
**Maximum working pressure 10 bar (gas)**

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	H	L	SW <sub>1</sub>	SW <sub>2</sub>	Weight kg/each
110	63	<b>615427</b>	1	6	48	42	180	330	50 x 50	25	3.070
110	90	<b>615428</b>	1	4	32	60	240	335	50 x 50	25	4.670
125	90	<b>615431</b>	1	4	32	60	240	335	50 x 50	25	4.790
160	63	<b>615433</b>	1	4	32	42	180	330	50 x 50	25	3.300
160	90	<b>615434</b>	1	4	32	60	240	335	50 x 50	25	5.000
180	90	<b>615437</b>	1	4	32	60	240	335	50 x 50	25	5.000
225	90	<b>615440</b>	1	4	32	60	240	335	50 x 50	25	5.000

## FRIALEN Ball Valves

### AKHP TL

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



Suitable for all pipe diameters in the given range by means of the FRIATOP Clamping Unit (see application picture and product range FRIATOOLS Ref.-No. 613350).

Compact tapping ball valve in HD-PE. Factory made combination of FRIALEN Saddle Moulding and FRIALEN Ball Valve with spigot for space and cost saving horizontal installation especially for integration of branches into mains under operating pressure. Leakage and swarf free tapping up to 10 bar (gas) and standard tapping equipment (we recommend Hütz & Baumgarten ([www.huetz-baumgarten.de](http://www.huetz-baumgarten.de))). With exposed heating element for optimal heat transfer. Please note the maximum permissible wall thickness for tapping.



#### PE 100 SDR 11

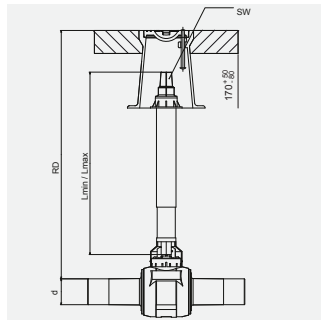
#### Maximum working pressure 10 bar (gas)

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Drilling Ø d <sub>a</sub>	H	L	SW <sub>1</sub>	SW <sub>2</sub>	Weight kg/each
250-450 (560)	90	<b>615526</b> ①	1	4	32	60	240	335	50 x 50	25	4.470

- ① d<sub>1</sub>: d 250 up to d 450 for pipes SDR 11 and 17;  
d<sub>1</sub>: > d 450 up to d 560 for pipes SDR 17

### BS

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



Telescopic actuating rod for operation of the FRIALEN KHP, KH, KHW, AKHP and AKHP TL from the valve cover. Stepless adjustment in the stated range (RD) without the use of tools, even in the installed state. Self supporting in any extended position. Corrosion proof. Please note that the wrench size is 14 mm.

d	RD in m	Order Ref.	Stock-status	BX	PU	SW <sub>1</sub>	Weight kg/each
20-50	0,45-0,70	<b>615741</b> ①	1	1	42	30	1.800
20-50	0,60-1,00	<b>615957</b> ①	1	1	42	14	2.700
20-50	0,60-1,00	<b>615328</b> ①	1	1	42	30	2.000
20-50	1,00-1,50	<b>616466</b> ①	1	1	42	14	3.400
20-50	1,00-1,50	<b>615330</b> ①	1	1	42	30	3.400
20-50	1,20-2,00	<b>616068</b> ①	1	1	42	14	3.450
20-50	1,20-2,00	<b>615329</b> ①	1	1	42	30	3.650
63-225	0,60-1,00	<b>615958</b>	1	1	42	14	2.050
63-225	0,60-1,00	<b>615310</b>	1	1	42	30	3.050
63-225	1,00-1,50	<b>616467</b>	1	1	42	14	4.150
63-225	1,00-1,50	<b>615331</b>	1	1	42	30	4.150
63-225	1,20-2,00	<b>616069</b>	1	1	42	14	3.600
63-225	1,20-2,00	<b>615311</b>	1	1	42	30	5.250

- ① Solid fit of the pipe sleeve socket due to the covered housing design.







FRIAFIT® Safety Fittings  
0160 UD PE100 SDR17 PN0.5

## **FRIAFIT® Sewage System**

Product range AF 25/21

The closed system of polyethylene for sewage, rainwater, and combined wastewater pipes.



## Things worth knowing about FRIAFIT® Sewage System and this product range

### Component traceability

Each component is provided with an additional barcode for its traceability.

### Norm Conformity

The FRIAFIT sewage system of PE 100 complies with EN 12666 and hence is deemed a regulated construction product. It therefore does not need general approval from the building authorities. A certificate of conformity issued by DIBt® of Berlin has been submitted.

The FRIAFIT connecting spigot ASA MULTI has been granted general approval from the building authorities. The approval certificate can be found at [www.aliaxis.de/en](http://www.aliaxis.de/en) in the download area.

Moreover, FRIAFIT couplers AM SDR 17 comply with the requirements under EN 12201 and ISO 4427.

FRIAFIT couplers AM SDR 17 have been certified under DVGW GW 335-B2 (certificates DV-8606BO6114 and DV-8611BO6115) and are subjected to regular monitoring by external agencies.

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



### Fusability

FRIAFIT safety fittings can be fused:

- generally to SDR 33 - SDR 11 pipes
- FRIAFIT couplers AM and sewage bends ABM/ABMS to SDR 33 - SDR 17 pipes

Please also note the details for each of the fusible SDR sizes given on the fitting's barcode label as well as all other binding codes affixed directly to the product. Please consult our application engineering department before processing thin walled pipes > SDR 33.

FRIAFIT safety fittings can be processed with pipes of PE 100 and PE 100-RC, PE 80 under EN 12666, DIN 8074/75, EN 1555-2, EN 12201-2, ISO 4437, and ISO 4427, PE-Xa under DIN 16892/93. For PE pipes, the melt flow rate 190/5 is 0.2 - 1.7 g / 10 min.

Components with an MFR < 0.20 require confirmation of suitability. FRIAFIT safety fittings can be processed with FRIAMAT fusion units at ambient temperatures from -10 °C to +45 °C.

Material transition fusions must comply in addition with the standards and assembly guidelines specific to these materials or this system.

On restrictions in certain cases affecting the installation and processing of FRIAFIT safety fittings in general, please read our assembly instructions. Also our inhouse customer advisers will be pleased to answer any questions you may have.

### Pressure bearing capacity

The FRIAFIT sewage system is designed for unpressurised pipes (open conduits). Under DIN EN 1610, the maximum test pressure is 0.5 bar.

FRIAFIT couplers AM SDR 17 are also approved for use in drinking water and PN 10 pressurised pipe systems.

FRIAFIT sewage bends ABM/ABMS and the sewage saddles ASA TL, ASA UNI and ASA VL are designed for pressurised pipe systems under a constant operating pressure of max 2.5 bar.

Details on pressure bearing capacities can be found in the product descriptions.

### Fusion process

FRIAFIT safety fittings can be processed with universal fusion units, e.g. the FRIAMAT series. The fusion parameters are transferred automatically from the fitting's barcode.

### Cooling times

FRIAFIT couplers, sewage insert sleeve, sewage bends, transition fittings and Fixbloc:

The cooling times (CT) given on the barcodes specify the times until the fused join can be moved.

FRIAFIT sewage saddles ASA TL, ASA UNI, ASA VL and transition saddle ASA TL KG:

The cooling time given on the saddle's barcode specifies the time until the tap.

Further details can be taken from our assembly instructions.

### Processing and additional information

Processing is described in our assembly instructions, which is also available for download on the internet at [www.aliaxis.de](http://www.aliaxis.de). This address also provides further details on the products and their processing, approvals, publications and contacts.

### Statics

The static calculations on the HD-PE sewer pipe must take into account the ambient conditions in each and every case provided by the pipe manufacturer or engineering office.

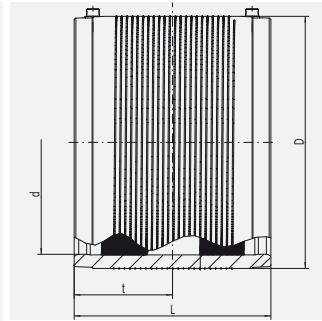
In all cases, the annular rigidity of the pipe join fused with FRIAFIT couplers is greater than the annular rigidity of the inserted pipe.

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AM

Slide-over Couplers SDR 17



For the jointing of HD-PE pipes in non-pressure and pressure systems for sewage, wastewater or drinking water pipes. With exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without holding devices. With pin indicator for visually checking fusion.

PE 100 SDR 17

Maximum working pressure 10 bar (water, sewage)

d	Order Ref.	Stock-status	BX	PU	D	L	t	Weight kg/each
110	680001	1	24	192	130	160	80	0.600
125	680013	1	22	176	146	160	80	0.650
160	680002	1	12	96	184	180	90	1.100
180	680003	1	8	64	207	180	90	1.450
200	680004	1	1	75	236	180	90	2.070
225	680005	1	1	52	263	200	100	2.723
250	680006	1	1	44	282	220	110	2.200
280	680007	1	1	32	316	220	110	3.800
315	680008	1	1	24	355	220	110	4.750
355	680009	1	1	24	400	220	110	5.900
400	680010	1	1	12	450	220	110	7.300
450	680011	1	1	6	506	270	135	11.200
500	680012①	1	1	4	562	270	135	14.450
560	680018①②	1	1	2	630	380	190	24.350
630	680019①②	1	1	2	710	420	210	35.000

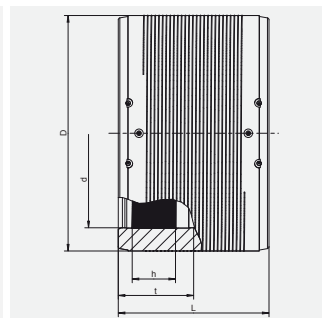
① separate fusion zones.

② with pre-heating barcode for compensation of a larger annular gap.

For assembly on close-fit-liner please contact our hotline +49 621 486-1896.

UB SDR 17

Slide-over Couplers, SDR 17



With exposed heating coils for optimal heat transfer, large insertion depth, wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material, for use without holding devices. UB d 1000 and above can only be fused with the FRIAMAT XL.

With pre-heating technology. Special sizes, pressure classes and designs on request.

PE 100 SDR 17

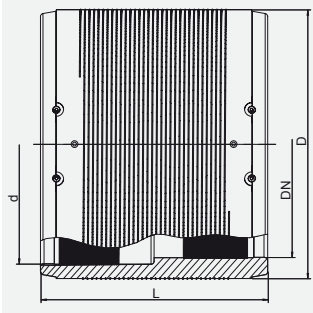
Maximum working pressure 10 bar (water, sewage)

d	Order Ref.	Stock-status	BX	PU	D	L	B	t	Weight kg/each
710	615994①	1	1	2	800	442	802	221	46.000
800	616290①	1	1	1	900	500	902	250	65.900
900	616345①	1	1	1	1024	500	1026	250	91.500
1000	616403①	3	1	1	1130	610	1132	305	128.000
1200	616416①	3	1	1	1356	670	1358	335	205.000

① separate fusion zones

REM

Relining Slide-over Couplers



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

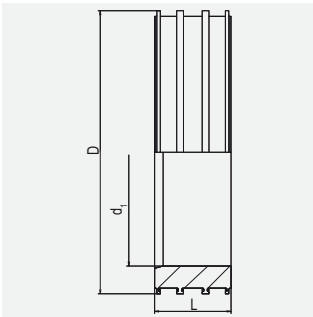
PE 100 SDR 17

Maximum working pressure 10 bar (water, sewage)

d/DN	Order Ref.	Stock-status	BX	PU	D	h1	L	B	t	Weight kg/each
110/100	615569	1	24	192	130	30	160	144	80	0.700
160/150	615571	1	12	96	190	38	180	199	90	1.600
315/300	615576	1	1	18	355	78	300	355	150	7.700

ASF

Sewage inspection chamber adapter



Connecting element between precast concrete manhole and the FRIAFIT sewage insert sleeve AEM. Anchoring webs (T section) around the entire width for a secure seat in the concrete. Defined inner surface for reliable system seal with AEM. Stable inside diameter due to large wall thickness. Flush connection (inside and outside) at bottom of concrete manhole (DIN 4034).

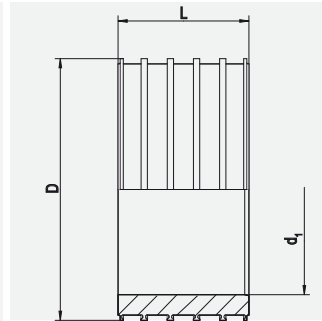
PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

Ø Pipe	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
110	134	680401	1	12	96	200	135	1.600
160	190	680402	1	8	64	250	135	1.900
180	218	680403	1	6	48	280	135	2.300
200	250	680404	1	4	32	315	135	2.700
225	280	680405	1	4	32	355	135	3.700
280	316	680407	1	4	32	400	135	4.800
315	357	680408	1	1	18	450	135	6.200
355	402	680409	1	1	18	500	135	7.400
400	452	680410	1	1	12	560	135	9.300
450	502	680411	1	3	6	630	135	12.700
500	562	680414	1	3	6	670	135	11.300
560	628	680412	1	3	6	710	135	8.800
630	713	680413	1	3	6	800	135	10.700

ASFL

Sewage inspection chamber adapter for masoned canals L = 250 mm



Connecting element between masonry manhole and the FRIAFIT sewage insert sleeve AEM. Anchoring webs (T section) around the entire width for firm and secure fit in manhole with retrospective installation. Defined inner surface for reliable system seal with AEM. Stable inside diameter due to large wall thickness.

PE 100

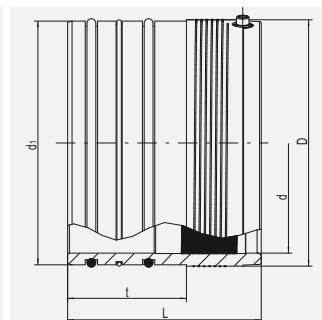
Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

Ø Pipe	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	D	L	Weight kg/each
225	280	<b>680505</b>	1	2	16	355	250	4.670
250	316	<b>680507</b>	1	2	16	400	250	6.650
280	357	<b>680508</b>	1	1	9	450	250	8.750
315	402	<b>680509</b>	1	1	6	500	250	11.050
355	502	<b>680511</b>	1	1	2	630	250	23.400
450	628	<b>680512</b>	1	1	2	710	250	16.400
630	713	<b>680513</b>	1	1	2	800	250	20.300

Note: When processing pipe dimensions ≥ d 710 please contact our hotline +49 621 486-1896

AEM

Sewage insert sleeve



For flexible integration of HD-PE pipes in concrete inspection manholes per DIN 4034 bzw. DWA-A 157 in conjunction with the FRIAFIT adapter ASF/ASFL. Connection side to ASF/ASFL has 2 elastomer sealing rings as sealant joint and for optimal press fit. For extra safety, the water absorbent Q sealing ring is included. The jointing side to the HD-PE pipe has exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end to prevent the flow of molten material, for use without holding devices.

PE 100

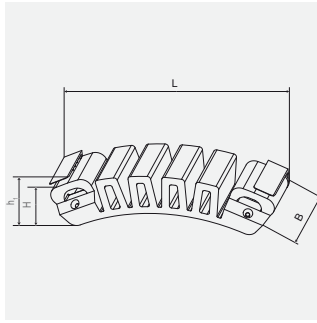
Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d	d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	D	L	t	Weight kg/each
110	131	<b>680201</b>	1	8	144	133	165	135	0.700
160	187	<b>680202</b>	1	8	64	193	225	135	1.900
180	215	<b>680203</b>	1	1	54	225	220	135	3.100
200	247	<b>680204</b>	1	1	56	250	220	135	3.500
225	277	<b>680205</b>	1	1	32	280	220	135	4.600
250	277	<b>680206</b>	1	1	32	280	220	135	2.500
280	313	<b>680207</b>	1	1	32	315	220	135	3.600
315	354	<b>680208</b>	1	1	24	355	220	135	4.350
355	399	<b>680209</b>	1	1	20	400	220	135	5.800
400	449	<b>680210</b>	1	1	12	450	220	135	8.300
450	499	<b>680211</b>	1	1	8	500	220	135	8.900
500	559	<b>680214</b>	1	1	8	562	220	135	11.050
560	624	<b>680212</b> ①	1	1	4	630	220	135	13.400
630	709	<b>680213</b> ①	1	1	3	710	270	135	22.400

① with pre-heating barcode for compensation of a larger annular gap

**FIXBLOC**

**Fixation for absorbing axial thrust and tensile forces**



The FIXBLOC is used on PE pipes for the creation of fixed point, as a pull-out protection, assembly aid or fixation to pipe bearing. Strength per fixed point up to 40 kN. Multiple applications possible around the pipe circumference. Processing is carried out with standard tensioning belts with belt width 50mm which are guided securely by two belt clips (easily removable). Minimum length approx. 3,5 x d pipe (longer for multiple applications). If the belt cannot be passed around the circumference of the pipe, the clamping device FIXBLOC FWFB (see application picture; order no. 613380 only for hire) can be used, e.g. in case of a PE-Liner, which must be anchored against the concrete wall of a manhole.



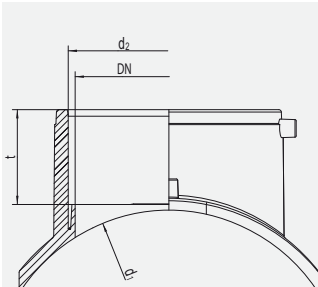
**PE 100**

**Maximum shear load per FIXBLOC: 40 kN**

d <sub>1</sub>	Order Ref.	Stock-status	BX	PU	H	h1	L	B	Weight kg/each
160 - 1600	<b>680600</b>	1	15	750	40	45	220	60	0.310

ASA TL

Sewage saddle top loading



The FRIAFIT sewage saddle ASA TL is a compact component consisting of a fusion saddle with an integral fusion coupler at its outlet (d 160). The FRIAFIT sewage saddle can be used to join sewer pipes to an existing main sewer system made of HD-PE. With exposed heating element for optimal heat transfer. Tapping area free of heating wires. The FRIAFIT sewage saddle is fixed onto the pipe using the FWFIT clamping and drilling unit (see application picture and product range FRIATOOLS order no. 613480) and tapping takes place after the specified cooling time.

When processing d 200 with pipes SDR 11 - 33 and d 225 - d 315 with pipes SDR 26 - 33 please take care of special assembly instructions.



PE 100

Maximum operating pressure 2,5 bar

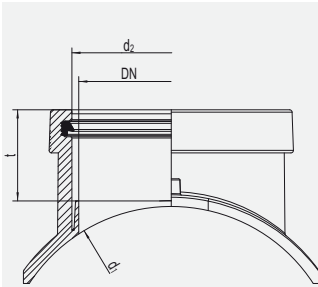
d <sub>1</sub>	d <sub>2</sub>	DN	Order Ref.	Stock-status	BX	PU	t	Weight kg/each
200	160	150	<b>682618</b>	1	8	64	76	1.000
225	160	150	<b>682613</b>	1	8	64	76	1.050
250	160	150	<b>682619</b>	1	10	80	76	0.990
280	160	150	<b>682614</b>	1	10	80	76	0.990
315	160	150	<b>682615</b>	1	10	80	76	0.990
355	160	150	<b>682620</b>	1	10	80	76	0.990
400	160	150	<b>682621</b>	1	10	80	76	0.890
450	160	150	<b>682616</b>	1	10	80	76	1.020
500/560/630	160	150	<b>682622</b>	1	10	80	76	1.020

For the assembly on close-fit-liner and d 560 and d 630 please contact our hotline +49 621 486-1896.



**ASA TL KG**

**Transition saddle top loading**



The FRIAFIT transition saddle ASA TL KG is a compact component consisting of a fusion saddle with an integral fusion coupler at its outlet (d 160). The FRIAFIT transition saddle is used to connect PVC/PP DN 150 sewer pipes to an existing HD-PE main sewer. With exposed heating element for optimal heat transfer. Tapping area free of heating wires. The FRIAFIT transition saddle is fixed onto the pipe using the FWFIT clamping and drilling unit (see application picture and product range FRIATOOLS order no. 613480) and tapping takes place after the specified cooling time.



**PE 100**

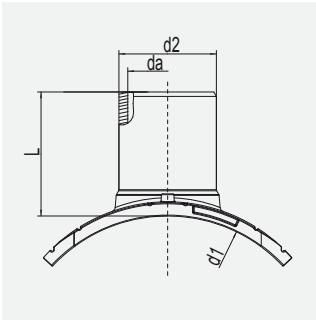
**Maximum testing pressure 0.5 bar in accordance to DIN EN 1610**

d <sub>1</sub>	d <sub>2</sub>	DN	Order Ref.	Stock-status	BX	PU	t	Weight kg/each
225	160	150	<b>682624</b>	1	8	64	76	1.192
280	160	150	<b>682625</b>	1	10	80	76	1.106
315	160	150	<b>682626</b>	1	10	80	76	1.106
355	160	150	<b>682627</b>	1	10	80	76	1.106
450	160	150	<b>682628</b>	1	10	80	76	1.136
500/560/630	160	150	<b>682629</b>	1	10	80	76	1.136

For the assembly on close-fit-liner and d 560 and d 630 please contact our hotline +49 621 486-1896.

ASA UNI

Spigot Saddles ASA UNI SDR 17



For integration of a branch line in PE pipelines – unpressurised or under operating pressure. Compact fitting made of HD-PE. Saddle with exposed heating element for optimal heat transfer. Outlet spigot for processing with FRIALEN couplers MB or UB. Suitable for all pipe diameters in the given range.

For variable adaptation to all pipe diameters in the specified range by means of clamping device UNITOP (Ref.-No. 613385) and clamping adapter for outlet SDR 17 (Ref.-No. 613839). Tapping in unpressurised condition using the FRIATOOLS drilling equipment FWAB XL 160 (see application picture and product range FRIATOOLS Ref.-No. 613838) for ASA UNI. With indicator for visually checking fusion.



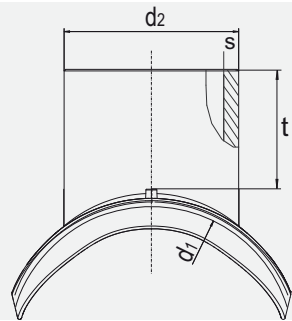
PE 100 SDR 11

Maximum working pressure 2,5 bar (sewage)

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	Weight kg/each
630-900	160	682639	1	5	40	1.650

ASA VL

Sewage Saddle Vacuum-Loading



For jointing of large branches at HD-PE main pipes with less effort, minimal underground work and without interrupting the operation. HD-PE saddles with exposed heating element for optimal heat transfer. Outlet spigot d 225 for use with FRIAFIT coupler AM or transition coupler AMKG d 225 on PVC/PP DN 200. Innovative vacuum clamping unit for safe bridging of even large pipe out-of-roundnesses and pipe shape deviations, which allows the additional possibility for a leak test before tapping. (see application pictures).



PE 100

Maximum working pressure 2,5 bar (sewage)

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	PU	t	s	Weight kg/each
355	225	682640	1	1	4	144	13,4	3.080
450	225	682641	1	1	6	144	13,4	2.900
560	225	682642	1	1	6	144	13,4	3.065
630	225	682643	1	1	6	144	13,4	3.080

Multi-dimensional

Ø Pipe	d2	Order Ref.
315 + 400	225	682640
500	225	682641
710	225	682643

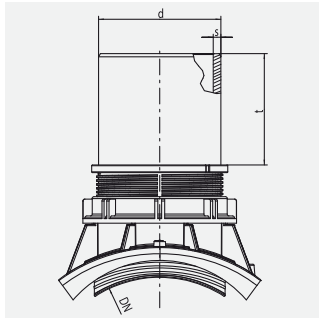
The assembly of the ASA VL is carried out using the FRIATOOLS vacuum pump (Order Ref. 613827) and the FRIATOOLS plunger (Order Ref. 613823).

A cross-dimensional processing requires additionally the ASA VL mounting aid (Order Ref. 613371).

Flush tapping with drilling equipment FWAB ASA 225 (Order Ref. 613835).

**ASA MULTI**

**Connecting Spigot to clay and concrete pipes**



For the connection of fused HD-PE service pipes or side branches to clay or concrete mains. For new installations as well as rehabilitation - without separating or completely exposing the main sewer. The outlet spigot d 160 offers a levelled passage when using pipes SDR17/17.6. Its bright inner surface facilitates an optimal view during camera inspection. Fusible with FRIAFIT coupler AM or FRIAFIT bends ABM/ABMS.

For the assembly of the FRIAFIT connecting spigot the assembly key ASA MULTI MS is required

**PE 100**

**Maximum testing pressure 0.5 bar in accordance to DIN EN 1610**

Pipe	d	Order Ref.	Stock-status	BX	PU	H	B	t	s	Weight kg/each
STZ DN 250	160	<b>682650</b> ①	1	5	40	250	265	146	9,5	2.700
STZ DN 300/350	160	<b>682651</b> ②	1	5	40	250	265	146	9,5	2.800
Concrete DN 250/300	160	<b>682651</b> ③	1	5	40	250	265	146	9,5	2.800

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

**ASA MULTI MS**

**Assembly key**

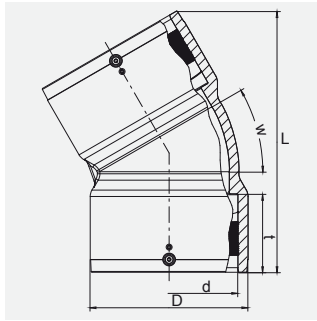


For the safe and quick installation of the FRIAFIT connecting spigot ASA MULTI.

Order Ref.	Stock-status	Weight kg/each
<b>682660</b>	1	0.150

**ABM**

**Sewage bends**



Little space required thanks to compact design as well as angle spacings of 15°, 30°, 45° facilitate a comfortable pipeline routing. Fusion couplers integrated on both ends to reduce the assembly time with exposed heating coils for an optimal heat transfer. The smooth, hydraulically optimised internal contour offers a level passage when pipes SDR 17/17.6 are used. The bright surface facilitates an optimal view during camera inspection. With pin indicator for visually checking fusion

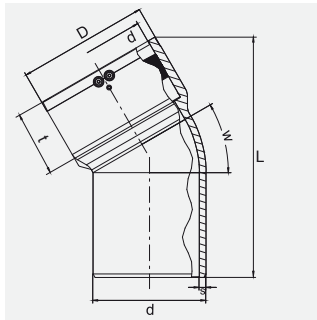
**PE 100**

**Maximum working pressure 2,5 bar**

d	w	Order Ref.	Stock-status	BX	PU	D	L	t	Weight kg/each
160	15°	<b>681100</b>	1	6	48	185	279	92	1.870
160	30°	<b>681101</b>	1	6	48	185	306	92	2.100
160	45°	<b>681102</b>	1	6	48	185	320	92	2.060

**ABMS**

**Sewage bends (one-side spigot end)**



Little space required thanks to compact design as well as angle spacings of 15°, 30°, 45° facilitate a comfortable pipeline routing. Coupler end with exposed heating coil for optimal heat transfer. Pipe spigots specifically suited for direct fusion into the FRIAFIT sewage saddle ASA TL. Angles of 60°, 90° etc. can be produced by using ABM repeatedly. The smooth, hydraulically optimised internal contour offers a level passage when pipes SDR 17/17.6 are used. The bright surface facilitates an optimal view during camera inspection. With pin indicator for visually checking fusion.

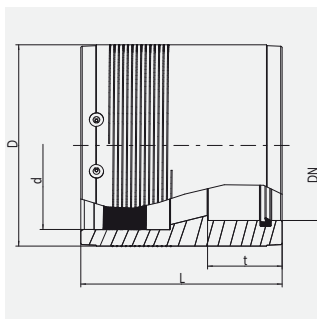
**PE 100**

**Maximum working pressure 2,5 bar**

d	w	Order Ref.	Stock-status	BX	PU	D	L	t	s	Weight kg/each
160	15°	<b>681103</b>	1	6	48	185	286	92	9,5	1.510
160	30°	<b>681104</b>	1	6	48	185	329	92	9,5	1.680
160	45°	<b>681105</b>	1	6	48	185	325	92	9,5	1.730

**AMKG**

**Transition coupler PE - PVC/PP**



Smooth material transition of HD-PE pipes (SDR 33 - SDR 17) to PVC/PP pipes in house service connections. HD-PE end with integrated coupler. PVC/PP end as slip-on coupler with SBR lip seal and a large insertion depth.

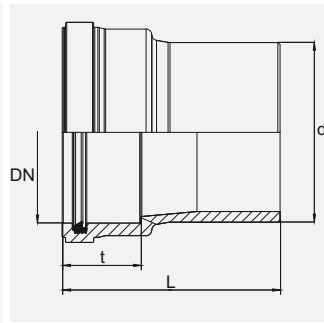
**PE 100**

**Maximum testing pressure 0.5 bar in accordance to DIN EN 1610**

d/DN	Order Ref.	Stock-status	BX	PU	D	L	t	Weight kg/each
160/150	<b>682630</b>	1	1	120	193	183.5	80	1.780
225/200	<b>682631</b>	1	1	32	270	270	100	5.820

**UKG**

**Transition piece PE – PVC/PP**



Smooth material transition in domestic range between HD-PE pipes (SDR 33 - SDR 17) and PVC/PP pipes. HD-PE side can be fused with FRIAFIT AM sewage coupler, bends ABM/ABMS or with the outlet of the FRIAFIT ASA TL sewage saddle. PVC/PP side as socket coupler with SBR lip seal gasket and large insertion depth.

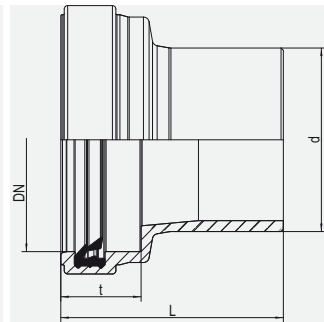
**PE 100**

**Maximum testing pressure 0.5 bar in accordance to DIN EN 1610**

d/DN	Order Ref.	Stock-status	BX	PU	L	t	Weight kg/each
160/150	<b>682617</b>	1	12	96	194	70	1.070

**USTZ**

**Transition piece PE - clay**



Smooth material transition in domestic range between HD-PE pipes (SDR 33 - SDR 17) and clay pipes (spigot ends). HD-PE side can be fused with FRIAFIT AM sewage coupler, ABM/ABMS bends, or with the outlet of the FRIAFIT ASA TL sewage saddle. Clay side as socket coupler with SBR lip seal gasket and large insertion depth.

**PE 100**

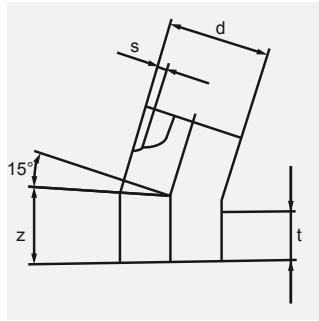
**Maximum testing pressure 0.5 bar in accordance to DIN EN 1610**

d/DN	Order Ref.	Stock-status	BX	PU	L	t	Weight kg/each
160/150	<b>682623</b>	1	2	36	194	70	1.250

## FRIAFIT additional fittings

### ABS 15

### Sewage bends 15° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability).

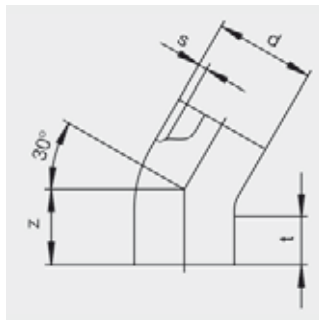
#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d	Order Ref.	Stock-status	BX	Z	t	s	Weight kg/each
110	<b>681004</b>	3	1	230	170	6,6	1.050
125	<b>681005</b>	3	1	250	170	7,4	1.450
160	<b>681006</b>	3	1	280	170	9,1	2.780
180	<b>681007</b>	3	1	315	250	10,2	3.770
225	<b>681008</b>	3	1	370	250	12,8	6.870
355	<b>681023</b>	3	1	438	300	15,9	12.500
355	<b>681020</b>	3	1	528	300	20,1	24.300

### ABS 30

### Sewage bends 30° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability).

#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

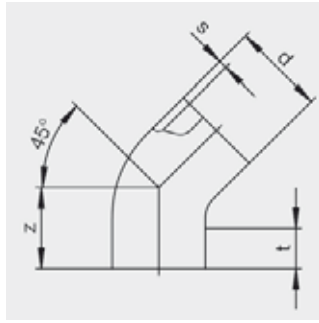
d	Order Ref.	Stock-status	BX	Z	t	s	Weight kg/each
110	<b>681009</b>	3	1	230	170	6,6	1.050
125	<b>681010</b>	3	1	250	170	7,4	1.450
160	<b>681001</b>	3	1	280	170	9,1	2.780
180	<b>681002</b>	3	1	317	250	10,2	3.770
225	<b>681003</b>	3	1	371	250	12,8	6.870
280	<b>681022</b>	3	1	440	300	15,9	12.500
315	<b>681021</b>	3	1	480	300	17,9	17.400
355	<b>681019</b>	3	1	520	300	20,1	22.100



## FRIAFIT additional fittings

### ABS 45

### Sewage bends 45° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability)

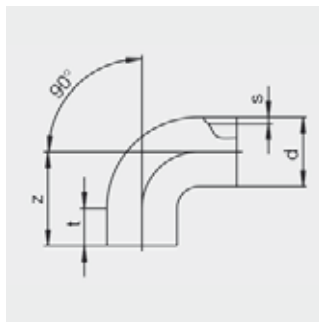
#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d	Order Ref.	Stock-status	BX	Z	t	s	Weight kg/each
110	681011	3	3	235	170	6,6	1.050
125	681012	3	3	250	170	7,4	1.450
160	681201	3	1	280	170	9,1	2.780
180	681202	3	1	320	250	10,2	3.770
200	681203	3	1	349	250	11,4	5.000
225	681204	3	1	380	250	12,8	6.870
250	681205	3	1	411	250	14,2	9.210
280	681206	3	1	448	300	15,9	12.500
315	681207	3	1	491	300	17,9	17.400
355	681208	3	1	541	300	20,1	24.300

### ABS 90

### Sewage bends 90° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability)

#### PE 80/PE 100

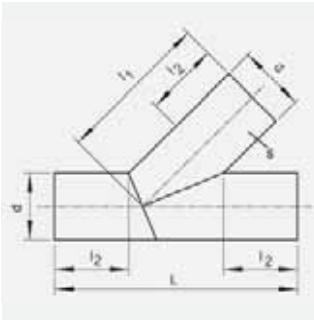
Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d	Order Ref.	Stock-status	BX	Z	t	s	Weight kg/each
160	681601	3	1	390	100	9,1	3.230
180	681602	3	1	420	150	10,2	4.370
225	681603	3	1	488	150	12,8	7.440

## FRIAFIT additional fittings

### ATS 45

### Equal branch 45° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability)

#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d	Order Ref.	Stock-status	BX	L	l1	l2	s	Weight kg/each
110	682001	3	1	556	333	200	6,6	1.700
125	681013	3	1	577	351	200	7,4	2.300
160	682002	1	1	626	393	200	9,5	4.100
180	682003	3	1	655	417	200	10,7	5.400
200	682004	3	1	783	491	250	11,9	8.000
225	682005	3	1	818	522	250	13,4	10.500
250	682006	3	1	954	602	300	14,8	15.100
280	682007	3	1	996	638	300	16,6	19.700
315	682008	3	1	1145	730	350	18,7	28.800
355	682009	3	1	1202	779	350	21,1	38.300

### ATSR 45

### Unequal branch 45° (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.  
Pipe colour black with bright inner surface (according to availability)

#### PE 80/PE 100

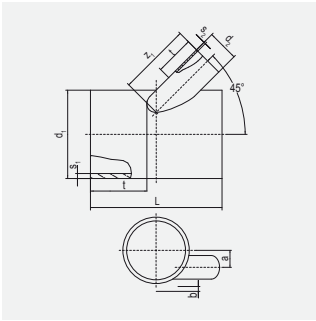
Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	L	l1	l2	s <sub>1</sub>	s <sub>2</sub>	Weight kg/each
160	110	682201	3	1	556	368	200	9,5	6,6	3.100
225	160	682203	3	1	726	489	250	13,4	9,5	8.000
280	160	682204	3	1	826	578	300	16,6	9,5	13.100
280	225	682205	3	1	918	610	300	16,6	13,4	16.300
315	160	682206	3	1	926	653	350	18,7	9,5	18.100
315	225	682207	3	1	1018	685	350	18,7	13,4	21.900
355	160	682208	3	1	926	681	350	21,1	9,5	22.400
355	225	682209	3	1	1018	714	350	21,1	13,4	26.700
450	160	682210	3	1	926	748	350	26,7	9,5	34.800

## FRIAFIT additional fittings

### ATSR5 45

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



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler. Pipe colour black with bright inner surface (according to availability)

Note: Please name the required outlet side (right/left) in flow direction when ordering

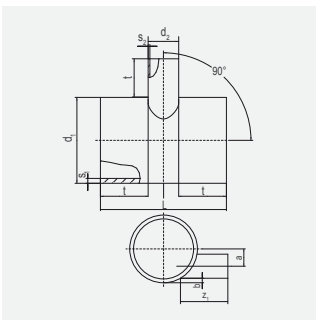
#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	L	t	z <sub>1</sub>	s <sub>1</sub>	s <sub>2</sub>	a	b	Weight kg/each
315	160	<b>682301</b>	3	1	630	200	320	17,9	9,1	50	30	13.400
315	225	<b>682302</b>	3	1	720	200	320	17,9	12,8	20	25	17.400
355	160	<b>682303</b>	3	1	630	200	335	20,1	9,1	68	30	16.600
355	225	<b>682304</b>	3	1	720	200	335	20,1	12,8	40	25	20.900
450	160	<b>682305</b>	3	1	670	200	370	25,5	9,1	115	30	26.600
450	225	<b>682306</b>	3	1	760	200	370	25,5	12,8	87	25	32.300
560	160	<b>682307</b>	3	1	670	200	410	31,7	9,1	170	30	39.900
560	225	<b>682308</b>	3	1	760	200	410	31,7	12,8	142	25	47.600
630	160	<b>682309</b>	3	1	670	200	440	35,7	9,1	205	30	49.900
630	225	<b>682310</b>	3	1	760	200	440	35,7	12,8	177	25	59.100

### ATSR5 90

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



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler. Pipe colour black with bright inner surface (according to availability)

#### PE 80/PE 100

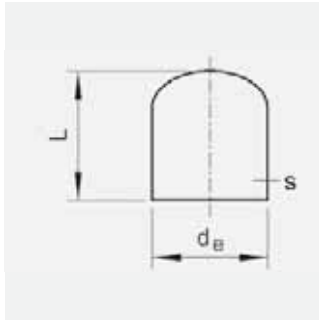
Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	L	t	z <sub>1</sub>	s <sub>1</sub>	s <sub>2</sub>	a	b	Weight kg/each
315	160	<b>682401</b>	3	1	565	200	280	17,9	9,1	50	30	12.100
315	225	<b>682402</b>	3	1	630	200	280	17,9	12,8	20	25	15.300
355	160	<b>682403</b>	3	1	660	200	290	20,1	9,1	68	30	17.000
355	225	<b>682404</b>	3	1	730	200	290	20,1	12,8	40	25	20.700
450	160	<b>682405</b>	3	1	660	200	315	25,5	9,1	115	30	25.600
450	225	<b>682406</b>	3	1	730	200	315	25,5	12,8	87	25	30.700
560	160	<b>682407</b>	3	1	660	200	340	31,7	9,1	170	30	39.000
560	225	<b>682408</b>	3	1	730	200	340	31,7	12,8	142	25	45.300
630	160	<b>682409</b>	3	1	660	200	360	35,7	9,1	205	30	48.800
630	225	<b>682410</b>	3	1	730	200	360	35,7	12,8	177	25	56.200

## FRIAFIT additional fittings

### CDE

### Sewage end cap (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.

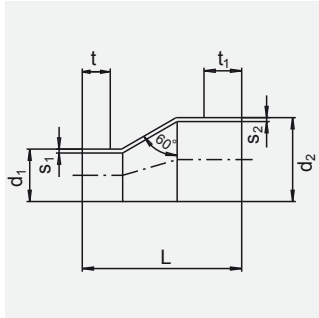
#### PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

de	Order Ref.	Stock-status	BX	L	s	Weight kg/each
110	734.096.36.110	1	18	121	6,6	0.270
125	734.096.36.125	1	18	127	7,4	0.360
160	734.096.36.160	1	6	155	9,5	0.740
180	734.096.36.180	3	12	166	10,7	0.980
225	734.096.36.225	1	6	203	13,4	1.810
280	734.096.36.280	1	6	238	16,6	3.290
315	734.096.36.315	1	2	258	18,7	4.560
355	734.096.36.355	3	2	281	21,1	6.610
400	734.096.36.400	1	2	310	23,7	9.190

### RES

### Reducers off-center (spigot fittings)



HD-PE long spigot fitting for installation with FRIAFIT electrofusion coupler.

#### PE 80/PE 100

Maximum testing pressure 0.5 bar in accordance to DIN EN 1610

d <sub>1</sub>	d <sub>2</sub>	Order Ref.	Stock-status	BX	L	t	t <sub>1</sub>	s <sub>1</sub>	s <sub>2</sub>	Weight kg/each
110	125	681018	3	1	264	85	85	6,6	7,4	1.000
110	160	681801	3	1	310	90	95	6,6	9,5	1.200
160	225	681802	3	1	404	100	150	9,5	13,4	2.530
225	280	681810	3	1	540	150	250	13,4	16,6	5.460





# FRIATOOLS<sup>®</sup> Technical Equipment

Product range EZ 34/21

Convenient, durable equipment for jointing pipes

## Things worth knowing about FRIATOOLS® Technical Equipment and this product range

### FRIAMAT area of application

FRIAMAT electrofusion welding 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 welded and the respective processing temperature. FRIATEC recommends for the processing of FRIALEN and FRIAFIT couplers over the temperature range from -20 °C up to +50 °C the use FRIAMAT Universal Fusion Units up to d 900 and of FRIAMAT XL up to d 1200.

The use of FRIAMAT fusion units for the processing of fittings from other manufacturers, also up to d 1200 and bigger, is basically possible. Please refer to the specific performance requirements of fittings from other manufacturers in consideration of the predominant processing temperature.

### Availability of FRIAMAT Bluetooth function and FRIAMAT APP

FRIAMAT 7 prime and FRIAMAT prime eco are equipped with a Bluetooth® interface. The availability of the Bluetooth function in the FRIAMAT fusion unit and thus the possibility of using the FRIAMAT APP is not given everywhere and depends on the country of use and the type of fusion unit. In which country the Bluetooth function and the FRIAMAT App can be used, please refer to the respective operating instructions or further comments on our homepage at [www.aliaxis.de/en/services/digital-apps](http://www.aliaxis.de/en/services/digital-apps).

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# The new FRIAMAT 7 Prime and FRIAMAT 7 Basic

## The new FRIAMAT 7 generation meets your needs even better

We have modernised our tried-and-tested FRIAMAT fusion units to the latest state of the art and made them “fit for the future” in order to simplify your work including the unit’s low weight, high performance easier, simpler operation and documentation.

**FRIAMAT Basic** is our successful basic model, which we have thoroughly revised: with flow-optimised active cooling, robust housing, high-quality graphic display, intuitive user interface and much more.

**FRIAMAT Prime** additionally opens up a wealth of digital functions for documentation and extended traceability, made possible by the new Bluetooth interface in combination with the FRIAMAT app. With the optional 1D/2D scanner, the new FRIAMAT is also ready to read and process 2D barcodes according to ISO 12176-5 Draft. This enables you to capture all information required for fusion including traceability data and extended product information with just one scan.



## FRIAMAT 7 prime

**NEW**



### FRIAMAT the 7th generation: Universal fusion unit with traceability and documentation function, Bluetooth

Powerful electrofusion unit with state-of-the-art converter technology and flow-optimized, active cooling. High-resolution, extremely bright 4.3" TFT color display. Documentation of fusion and traceability data. Memory space for up to 20,000 fusion logs. CSV or PDF file or FRIATRACE format output to standard USB stick.

Supervisor function for individualization of device functions and presetting of operating steps.

The user himself can install software updates via USB interface.

With mini-scanner, reader wand or new 1D/2D scanner for reading 2D barcodes according to ISO 12176-5 (draft version), Adapter bag, language selection, adjustable buzzer volume, manual emergency entry. Extra-long power cable (4 m) and extra-long fusion cable (5 m). Weight approx 12,8 kg.

Integrated Bluetooth function for communication with the FRIAMAT APP.

The tool is delivered in a transport box.

Version	Order Ref.	Stock-status
with reader wand	<b>613134</b>	1
with mini-scanner	<b>611134</b>	1
with 1D/2D-scanner	<b>614134</b>	1

## FRIAMAT prime eco



### Universal fusion unit with documentation and traceability function, and bluetooth

High performance due to innovative toroidal transformer technology with flow-optimized, active cooling.

High-resolution, extremely bright 4.3" TFT color display. Bluetooth interface. Documentation of fusion and traceability data. Memory space for up to 20,000 fusion logs. CSV or PDF file or FRIATRACE format output to standard USB stick.

With reader wand or mini-scanner, adapter bag, language selection, adjustable buzzer volume, manual emergency entry. Extra-long power cable (4 m) and extra-long fusion cable (5 m). Weight approx 18,0 kg.

Integrated Bluetooth function for communication with the FRIAMAT APP.

The tool is delivered in a transport box.

Version	Order Ref.	Stock-status
with reader wand	<b>613124</b>	1
with mini-scanner	<b>611124</b>	1

## FRIATOOLS Fusion Units

### FRIAMAT print eco

### Universal fusion unit with easy documentation function



High performance due to innovative toroidal transformer technology with flow-optimized, active cooling.

High-resolution, extremely bright 4.3 "TFT color display. Easy documentation of fusion data. Memory space for up to 1,000 fusion logs. PDF file output to standard USB stick.

With reader wand or mini-scanner, adapter bag, language selection, adjustable buzzer volume, manual emergency entry. Extra-long power cable (4 m) and extra-long fusion cable (5 m). Weight approx 18,0 kg.

The tool is delivered in a transport box.

Version	Order Ref.	Stock-status
with reader wand	<b>613122</b>	1
with mini-scanner	<b>611122</b>	1

### FRIAMAT 7 basic

### FRIAMAT the 7th generation: Universal fusion unit without documentation function



Powerful electrofusion unit with state-of-the-art converter technology and flow-optimized, active cooling.

High-resolution, extremely bright 4.3 "TFT color display.

The user himself can install software updates via USB interface.

With mini-scanner, reader wand or new 1D/2D scanner for reading 2D barcodes according to ISO 12176-5 (draft version), Adapter bag, language selection, adjustable buzzer volume, manual emergency entry. Extra-long power cable (4 m) and extra-long fusion cable (5 m). Weight approx 12,8 kg.

The tool is delivered in a transport box.

Version	Order Ref.	Stock-status
with reader wand	<b>613130</b>	1
with mini-scanner	<b>611130</b>	1
with 1D/2D-scanner	<b>614130</b>	1

### FRIAMAT basic eco

### Universal fusion unit without documentation function



High performance due to innovative toroidal transformer technology with flow-optimized, active cooling.

High-resolution, extremely bright 4.3 "TFT color display.

With reader wand or mini-scanner, adapter bag, language selection, adjustable buzzer volume, manual emergency entry. Extra-long power cable (4 m) and extra-long fusion cable (5 m). Weight approx 18,0 kg.

The tool is delivered in a transport box.

Version	Order Ref.	Stock-status
with reader wand	<b>613120</b>	1
with mini-scanner	<b>611120</b>	1

## FRIATOOLS Fusion Units - Accessories

### MINISCAN

#### Mini-scanner



Handy and robust FRIAMAT mini-scanner for reliable reading of fusion and traceability barcodes. With handy scanner bag for storage. Can be used for all current FRIAMAT electrofusion units in this product range, elderly units on request.

Order Ref.	Stock-status
624005	1

### FWLESST

#### Reader wand



FRIAMAT reader wand for reading of fusion- and traceability barcodes. Can be used for all FRIAMAT electrofusion units.

Order Ref.	Stock-status
623645	1

### 2DSCAN

#### 1D/2D-Scanner



Handy and robust 1D/2D scanner for reliable reading of 1D fusion and traceability barcodes as well as 2D codes according to ISO 12176-5 (draft). With handy scanner bag for storage. Can only be used for new FRIAMAT fusion boxes of the 7th generation.

Order Ref.	Stock-status
624006	1

### MEMSTICK

#### Memory-Stick



Memory-Stick for the storage of fusion data in FRIATRACE database, as pdf- or csv-data Transfer of fusion data from FRIAMAT electrofusion units (only documentation units) for processing to the PC.

Order Ref.	Stock-status
624023	1

## FRIATRACE

### Database software FRIATRACE



Software for processing of fusion data including traceability data from FRIAMAT fusion units with traceability- and documentation function. Suitable for operating systems Windows 2000/ XP / Windows 7. With database function (all fusion data in one database) for individual evaluation, copying, sorting, searching, formatting, editing etc.

Available as:

- FRIATRACE database software consisting of FRIATRACE CD-Rom, connecting cable PC – fusion unit and programme description or
- FRIATRACE combi-package consisting of FRIATRACE CD-Rom, Memory-Stick and programme description.

Article description	Order Ref.	Stock-status
FRIATRACE database software	<b>613280</b>	1
FRIATRACE combi-package	<b>624026</b>	1

## PA USB

### FRIAMAT Parallel-USB-Adapter



For the connection of a printer with USB Type-B port to FRIAMAT fusion units, manufactured from 2000 with parallel interface. It allows direct printing of fusion data to a USB printer (GDI printers are not supported). The power is supplied via the included power supply. Adapters included.

Order Ref.	Stock-status
<b>613263</b>	1

## SUPER P

### Supervisor-Pass

For individual adjustment of menu functions of FRIAMAT XL and FRIAMAT prime (e.g. blocking of functions, defaults for forced processes, etc.).

To order, please download the application form from [www.aliaxis.de](http://www.aliaxis.de) in the product catalogue under Supervisor Pass.



Order Ref.	Stock-status
<b>623101</b>	3

## SPASS

### Fusion-Pass

Serves the identification of the welder and the protection of the FRIAMAT electrofusion units (only documentation units) against unauthorised access. The data stored in the fusion pass (welder number or welder's name) are transmitted to the fusion record.

To order, please download the application form from [www.aliaxis.de](http://www.aliaxis.de) in the product catalogue under Welder's Pass.



Order Ref.	Stock-status
<b>623100</b>	3

## FRIATOOLS Fusion Units - Accessories

### FPASS

#### Remote Start/Stop Pass



For the remote start of all FRIAMAT fusion units from the trench using a reader wand or barcode scanner. Lanyard included.

Order Ref.	Stock-status
624003	1

### ALTK FMT

#### Transport boxes



For transport and storage of FRIAMAT fusion units. Transport boxes for older FRIAMAT types on request.

Version	Order Ref.	Stock-status
FRIAMAT prime / basic		
FRIAMAT prime / basic (7. Generation)	627600	1
FRIAMAT prime eco / basic eco (from 2018)		
FRIAMAT prime eco / basic eco / geo print (up to 2018)	627001	1

### CONTACT4

#### Socket contacts 4.0 mm



Socket contacts 4.0 mm. Can be used for all FRIAMAT fusion units.

Order Ref.	Stock-status
624529	1

### ADFL

#### Adapter for flat contacts



For sliding onto socket contacts of all FRIAMAT fusion units.

Order Ref.	Stock-status
613236	1

### ADBK

#### Adapter for 4.7 mm socket contacts



For sliding onto socket contacts of all FRIAMAT fusion units.

Order Ref.	Stock-status
613237	1

# We make your job easier.

## Good reasons for the new practical scraper tools:

Comfortable and durable equipment.

For professionals by professionals, to ease pipe preparation – for best and safest connections.

NEW: Universal scraping ranges, no size settings required

NEW: Exchangeable blades with second edge for double the service life

NEW: Fast adjustments for simple scraping length settings

Now available for you, the new generation:

### **FWSG 63 for pipes d 20–d 63**

- Universal scraping ranges, no size settings required
- Exchangeable blades with second edge for double the service life

### **FWSG 225 for pipes d 75–d 225**

- Exchangeable blades with second edge for double the service life
- Fast adjustments for simple scraping length settings

### **FWSG 400 for pipes d 75–d 400**

- Exchangeable blades with second edge for double the service life
- Fast adjustments for simple scraping length settings





## FRIATOOLS Scraper tools

### FWSG RA

### Compact scraper tool for pipes and outlets d 25 - d 63



Dimension-bound compact scraper tool for the reliable removal of the oxide layer of HDPE and PE-Xa pipes and at the outlets of FRIALEN safety fittings. Super long scraping length, in the diameter d 32 also for FRIALONG long couplers. Scraper blade made of carbide with 2 edges (twice the service life). Automatic compensation of pipe out-of-roundness and tolerances. Manual operation, with hand crank or cordless screwdriver.

Article description	Dimension	SDR	Order Ref.	Stock-status
FWSG RA 25	d 25	SDR 11	<b>613576</b>	1
FWSG RA 32	d 32	SDR 11	<b>613580</b>	1
FWSG RA 40	d 40	SDR 11	<b>613581</b>	1
FWSG RA 50	d 50	SDR 11	<b>613582</b>	1
FWSG RA 63	d 63	SDR 11	<b>613583</b>	1
Hand crank	all dimensions		<b>613579</b>	1
Transport box	d 32 - d 63		<b>613586</b>	1

### FWSG 63

### Scraper tools for pipes d 20 – d 63 (1/2" - 2" IPS)



For the reliable removal of the oxide layer of HDPE and PE-Xa pipes. Scraper blade made of carbide designed as reversible blades with 2 cutting edges (twice the service life). Universal scraping ranges, no dimension adjustment required. Even swarf removal thanks to a spring-loaded scraper blade and automatic feed. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 63	d 20 - d 63	<b>613408</b>	1

### FWSG 225

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



For the reliable removal of the oxide layer of HDPE and PE-Xa pipes. Scraper blade made of carbide with 2 edges (twice the service life). Consistent swarf removal due to spring mounted scraper blade and automatic feed. With quick adjustment of the scraping length and exchangeable clamping slide for the dimensions d 75 - d 225 and d 250 - d 400. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 225	d 75 - d 225	<b>613409</b>	1

### FWSG 400

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



For the reliable removal of the oxide layer of HDPE and PE-Xa pipes. Scraper blade made of carbide with 2 edges (twice the service life). Consistent swarf removal due to spring mounted scraper blade and automatic feed. With quick adjustment of the scraping length and exchangeable clamping slide for the dimensions d 75 - d 225 and d 250 - d 400. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 400	d 75 - d 400	<b>613410</b>	1



## FRIATOOLS Scraper tools

### FWSG 710 L

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



For the reliable removal of the oxide layer of HDPE and PE-Xa pipes for half or entire coupler length. Scraper blade made of carbide for a long life. Even swarf removal thanks to a spring-loaded scraper blade and automatic feed. Includes a replacement blade. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 700 L	d 250 - d 710	<b>613642</b>	1

### FWSG 710 S

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



For the reliable removal of the oxide layer on spigot fittings. Additionally it is also possible to scrape HDPE and PE-Xa-pipes (maximum along half length of couplers d 710). Scraper blade made of carbide for a long life. Even swarf removal thanks to a spring-loaded scraper blade and automatic feed. Includes a replacement blade. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 700 S	d 250 - d 710	<b>613639</b>	1

### FWSG 900 L

#### Scraper tool for pipes d 630 - d 900 (25" - 36" IPS)



For the reliable removal of the oxide layer of HDPE pipes for half or entire coupler length. Scraper blade made of carbide for a long life. Even swarf removal thanks to a spring-loaded scraper blade and automatic feed. Includes a replacement blade. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG 900	d 630 - d 900	<b>613644</b>	3

### FWSG XL

#### Large pipe scraper tool for pipes d 800 to d 1200



For the reliable removal of the oxide layer of large pipes made of HDPE in the diameter range d 800 to d 1200, SDR11-SDR33. Modular design for easy handling and quick assembly. Diameter adjustment through quick setting. Center-supported drive via hand crank. Automatic compensation of pipe out-of-roundness and tolerances through spring-supported adjustable blade unit. Scraper blade designed as turning blade with 2 cutting edges (twice the service life). The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG XL	d 800 - d 1200	<b>613645</b>	3

**FWSG SE**

**Scraper tools for pipe ends and saddle areas d 63 – d 315**



Dimension-bound scraper tool for the reliable removal of the oxide layer of HDPE and PE-Xa pipe ends and in the saddle area. Scraper blade designed as turning blade with 2 blades (twice the service life). Easy clamping thanks to the open design of the scraper tool. The tool is delivered in a transport box.

Article description	Dimension	Order Ref.	Stock-status
FWSG SE 63	d 63	<b>613562</b>	1
FWSG SE 75	d 75	<b>613563</b>	1
FWSG SE 90	d 90	<b>613564</b>	1
FWSG SE 110	d 110	<b>613565</b>	1
FWSG SE 125	d 125	<b>613566</b>	1
FWSG SE 140	d 140	<b>613567</b>	1
FWSG SE 160	d 160	<b>613568</b>	1
FWSG SE 180	d 180	<b>613569</b>	1
FWSG SE 200	d 200	<b>613570</b>	1
FWSG SE 225	d 225	<b>613571</b>	1
FWSG SE 250	d 250	<b>613572</b>	1
FWSG SE 280	d 280	<b>613573</b>	1
FWSG SE 315	d 315	<b>613574</b>	1

**FWSK**

**Scraper chain for pipe ends and saddle areas d 250 - d 1000**



Article description	Dimension	Order Ref.	Stock-status
FWSK	d 250 - 1000	<b>613383</b>	1

## FWSGE

### Replacement blades for scraper tools

Replacement blades made of carbide (long storage and service life).

**FWSGE 3, 4, 5:** consisting of 3 pieces replacement blades, 1 piece torx screw and 1 piece torx wrench.

**FWSGE 6:** consisting of 1 pieces replacement blades, 2 piece torx screw and 1 piece torx wrench.

(Fig. shows FWSGE 3)

Article description	Unit type	Marking	Order Ref.	Stock-status
FWSGE 4	FWSG 63 (up to 2018)	coloured green	<b>613323</b>	1
FWSGE 6	FWSGS 110 / FWSGS 180		<b>613325</b>	1
FWSGE 3	FWSG 225 (up to Q3/2019)	coloured red	<b>613322</b>	1
FWSGE 5	FWSG 710 L/S / FWSG 900 L	coloured blue	<b>613324</b>	1



Replacement blade, designed as cutting edge with 2 blades.

**FWSGE 14, 15:** consisting of 1 piece replacement blade with 2 blades, 1 piece torx screw and 1 piece torx wrench.

(Fig. shows FWSGE 15)

Article description	Unit type	Marking	Order Ref.	Stock-status
FWSGE 14	FWSG 225/FWSG 400 (from Q4/2019)	coloured white	<b>613335</b>	1
FWSGE 15	FWSG 63 (from 2019)	coloured orange	<b>613336</b>	1



Replacement blade, designed as cutting edge (with 2 blades).

**FWSGE 8:** consisting of 1 piece replacement blade, 1 piece allen screw and 1 piece allen wrench.

(Fig. shows FWSGE 8)

Article description	Unit type	Order Ref.	Stock-status
FWSGE 8	FWSG SE (all types)	<b>613327</b>	1



Replacement blade, designed as cutting edge (with 2 blades).

**FWSGE 10, 11, 13:** consisting of 1 piece replacement blade, 1 piece torx screw and 1 piece torx wrench.

(Fig. shows FWSGE 10)

Article description	Unit type	Order Ref.	Stock-status
FWSGE 13	FWSG RA 25	<b>613332</b>	1
FWSGE 10	FWSG RA 32 and 40	<b>613329</b>	1
FWSGE 11	FWSG RA 50 and 63	<b>613330</b>	1



Replacement blade and guide plate designed for large pipe processing; designed as cutting edge (twice the service life).

**FWSGE 12:** consisting of 1 piece replacement blade and guide plate, 2 pieces torx screws and 1 piece torx wrench.

(Fig. shows FWSGE 12)

Article description	Unit type	Order Ref.	Stock-status
FWSGE 12	FWSG XL	<b>613331</b>	1



## FRIATOOLS Scraper tools accessories

### FWSGE K

#### Replacement blades for scraper chain FWSK

Article description	Unit type	Order Ref.	Stock-status
FWSGE K	FWSK	613337	1

### ALTK FWSG

#### Transport boxes

For the transport and storage of scraper tools.



Unit type	Order Ref.	Stock-status
FWSG 63	613307	1
FWSG 225 and FWSG 63/225 (up to Q3/2019)	613309	1
FWSG 225 (from Q4/2019)	613406	1
FWSG 400 (from Q4/2019)	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

### FWZ

#### Hand scraper

To remove oxide layer on HD-PE pipes or fittings which are unable to treat using appropriate scraper tools. Also suitable for deburring cut edges.

Replacement blades: 5 pieces per package.



Article description	Order Ref.	Stock-status
Hand scraper	613300	1
Replacement blades	613270	1

### FWZ XL

#### Hand scraper for large pipes

For removing oxide layers on large HD-PE pipes which are unable to treat using appropriate scraper tools. Ideal for preparing surfaces for the processing of FRIALEN XL saddle fittings. Also suitable for deburring cut edges.



Article description	Order Ref.	Stock-status
Hand scraper for large pipes	613299	1

## FRIATOOLS Other tools and installation aids

### FRIATOP

#### Clamping unit (Top Loading)



For the assembly of FRIALEN XL Top Loading saddle parts without lower clamp for all pipe diameters in the appropriate range of dimensions with extra elastic pneumatic spring system and for the optimum build-up of jointing pressure during fusion process. The tool is delivered in a transport box.

Order Ref.	Stock-status
<b>613350</b>	1



### UNITOP

#### Clamping unit for FRIALEN 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. The tool is delivered in a transport box.

For the processing of FRIALEN spigot saddles SA UNI with UNITOP clamping unit but without using FRIAMAT fusion units ADWL angled fusion adapters for socket contacts 4,0 mm (Order Ref. 613241) may be required.

For the processing of FRIAFIT spigot saddles ASA UNI d 630 - 900 with outlet d 160 / SDR 17 an additional adapter (Order Ref. 613839) is required and has to be ordered separately.

Article description	Order Ref.	Stock-status
UNITOP clamping unit (d 250 - d 900)	<b>613385</b>	1
ADWL angled adapters for socket contacts 4,0 mm	<b>613241</b>	1
Clamping adapter for outlet spigot of ASA UNI d 160	<b>613839</b>	1

### VACUPUMP

#### Vacuum pump for building site operation



For the assembly of FRIALEN XL spigot saddles SA XL, FRIALEN repair saddles RS XL as well as FRIAFIT sewage saddles ASA VL. Consisting of vacuum pump (110V/230V), manometer, and hose connections. No additional construction site compressor required for operation The tool is delivered in a transport box .

For the assembly of FRIALEN XL spigot saddles SA XL and FRIAFIT sewage saddles ASA VL, plungers (PRESSKO) are required.

Article description	Order Ref.	Stock-status
Vacuum pump 230V	<b>613827</b>	1
Vacuum pump 110V	<b>613828</b>	3



### PRESSKO

### Plunger for VACUSET XL clamping unit



Nominal width-related plunger with stop plate and plug connection NW 7.2 for assembly on the FRIALEN XL spigot saddle SA XL with outlet d 160 - d 400 or the FRIAFIT sewage saddle ASA VL with outlet d 225 and for the connection of the Vacuum pump.

Version	Order Ref.	Stock-status
FRIALEN SA XL d 160	<b>613821</b>	1
FRIALEN SA XL d 225	<b>613822</b>	1
FRIALEN SA XL d 250 / FRIAFIT ASA VL d225	<b>613823</b>	1
FRIALEN SA XL d 280	<b>613853</b>	1
FRIALEN SA XL d 315	<b>613854</b>	1
FRIALEN SA XL d 355	<b>613855</b>	1
FRIALEN SA XL d 400	<b>613837</b>	1



### FWAB

### Drilling equipment



Drilling equipment FWAB for drilling HDPE pipes in unpressurised condition through the outlet spigot of FRIALEN XL spigot saddles SA XL, FRIALEN spigot saddles SA UNI as well as FRIAFIT sewage saddles ASA VL. Drive with drilling machine. Consisting of hole saw (nominal width-related), hole saw adapter SDS max, extension for hole saw adapter, centre drill with ejector and retaining shell, and 1 x hexagon wrench. The tool is delivered in a transport box.

(Fig. shows FWAB XL 160)

Article description	Outlet dimension	Order Ref.	Stock-status
FWAB XL 90 for SA UNI	d 90	<b>613832</b>	1
FWAB XL 110 for SA UNI	d 110	<b>613833</b>	1
FWAB XL 125 for SA UNI	d 125	<b>613834</b>	1
FWAB XL 160 for FRIALEN SA UNI	d 160	<b>613829</b>	1
FWAB XL 225 for FRIALEN SA XL	d 225	<b>613830</b>	1
FWAB XL 250 for FRIALEN SA XL	d 250	<b>613831</b>	3
FWAB XL 280 for FRIALEN SA XL	d 280	<b>613850</b>	3
FWAB XL 315 for FRIALEN SA XL	d 315	<b>613851</b>	1
FWAB XL 355 for FRIALEN SA XL	d 355	<b>613852</b>	1
FWAB XL 400 for FRIALEN SA XL	d 400	<b>613836</b>	3
FWAB XL 160 for FRIAFIT ASA UNI	d 160	<b>613838</b>	1
FWAB ASA 225 for FRIAFIT ASA VL	d 225	<b>613835</b>	1



**FWFIT**

**Clamping and drilling unit for FRIAFIT-Sewage saddles (ASA TL) and transition saddles (ASA TL KG)**



Combined clamping and drilling unit, universally designed for all FRIAFIT sewage saddles ASA TL and FRIAFIT transition saddles ASA TL KG. For clamping and creating the necessary joining pressure during fusion. For pressure free tapping through outlet socket on completion of prescribed cooling time. The tool is delivered in a transport box.

Order Ref.  
**613480**

Stock-  
status  
1



**ASATOP**

**Clamping unit for close-fit-liner DN 200 - DN 500 (ASA TL) and transition saddles (ASA TL KG)**



Clamping unit designed for FRIAFIT sewage saddles ASA TL and FRIAFIT transition saddles ASA TL KG, specifically for HDPE Close Fit Inliners DN 200 to DN 500 and for HDPE pipes d 630. For clamping and creating the necessary joining pressure during fusion. Comprising ASATOP clamping unit with toggle anchor, hole saw (Ø 95 mm) with hole saw adapter SDS, centre drill and extension, and compressed air pump. The tool is delivered in a transport box.

For drilling through the outlet fitting in unpressurised state, the FWFIT clamping and drilling unit (Order Ref. 613480) is required.

Order Ref.  
**613370**

Stock-  
status  
3





## FRIATOOLS Other tools and installation aids

### RPS

### Repair set



Repair kit for containing residual water during repair and installation work on d 90 - d 900 HDPE water pipes. Consisting of a universal repair set with pump, pressure gauge, drill, connecting hose, and additionally repair balloons for each pipe dimensions. Optional extension set for the connection of an additional repair balloon, consisting of additional connection hose of 3m and pressure gauge.

From pipe dimensions d 355 the drilling equipment FWAB XL 225 (Order-Nr. 613830) is required.

The repair set up to d 225 requires VVS repair and reinforcing saddles. Pipe dimensions from d 250 require VSC TL or RS XL repair saddles.

Prices and availability on request.



Article description	Dimension	Order Ref.	Stock-status
Repair set	all dimensions	<b>613701</b>	1
Extension set	all dimensions	<b>613715</b>	1
Repair balloon type 1	d 90 - d 180	<b>613702</b>	1
Repair balloon type 2	d 200 - d 315	<b>613703</b>	1
Repair balloon type 3	d 355 - d 450	<b>613704</b>	1
Repair balloon type 4	d 500 - d 560	<b>613705</b>	1
Repair balloon type 5	d 630	<b>613706</b>	1
Repair balloon type 6	d 710	<b>613707</b>	1
Repair balloon type 7	d 800	<b>613708</b>	1
Repair balloon type 8	d 900	<b>613709</b>	1
Transport box		<b>613700</b>	1

### CLAMP 63

### Alignment clamp d 20 – d 63



Universal alignment clamp with angle adjustment (45°/90°) for heating coil fusion couplers, reducers, 45° and 90° elbows, and outlets on saddle fittings d 20 - d 63.

Optional version CLAMP 63L also applicable for long couplers FRIALONG.

Article description	Order Ref.	Stock-status
CLAMP63	<b>613020</b>	1
CLAMP63L	<b>613034</b>	1

### CLAMP 180

### Alignment clamp d 63 – d 180



Alignment clamp with angle adjustment (45°/90°) and two clamping elements for heating coil fusion couplers, reducers, and 45° and 90° elbows d 63, d 90, d 125, and d 180. Reduction shells can be inserted for various sizes. Delivered in a practical carrier bag.

Alignment clamp can be expanded with additional clamping element modules for use as fourfold alignment clamp for d 63, d 90, d 125, and d 180. This needs two additional clamping elements.

T-piece extension kit for alignment clamp. Variant with one clamping element. Additional clamping elements can be attached for a twofold alignment clamp on the branching pipe.

Reduction shell set for d 110 and d 160. One reduction shell set is needed for each clamping element.

(Picture is exemplary)

Article description	Dimension	Order Ref.	Stock-status
Alignment clamp with two clamping elements	d 63, d 90, d 125 and d 180	<b>613021</b>	1
Additional clamping element	d 63, d 90, d 125 and d 180	<b>613022</b>	1
Reduction shell set d 110/d 160	d 110 and d 160	<b>613023</b>	1
T-piece extension kit	d 63, d 90, d 125 and d 180	<b>613024</b>	1



**SQM**

**Manual squeeze-off tool for pipes d 20 – d 125**



Manual squeeze-off tool for the temporary shutoff of HDPE and PE-Xa pipes d 63 - d 125 in SDR 11 and SDR 17.6.

Article description	Dimension	SDR	Order Ref.	Stock-status
SQM63	d 20 - d 63	SDR 11	<b>613025</b>	1
SQM125	d 63 - d 90, d 90 - d 125	SDR 11, SDR 17,6	<b>613026</b>	1

**SQH**

**Hydraulic squeeze-off tool**



Hydraulic squeeze-off tool for the temporary shutoff of HDPE and PE-Xa pipes d 63 - d 180 in SDR 11 and SDR 17.6.

Article description	Dimension	SDR	Order Ref.	Stock-status
SQH180	d 63 - d 180	SDR 11 / SDR 17,6	<b>613028</b>	1

**RRC**

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



For re-rounding squeezed-off HDPE and PE-Xa pipes d 63 - d 180.

RRC90 as universal re-rounding clamp for d 63, d 75, and d 90. Reduction shells can be inserted for various sizes. Key for activating the universal re-rounding clamps included.

RRC110 - RRC180 as re-rounding clamps for each nominal diameter of d 110, d 125, d 160, and d 180.

Fig. 1 shows RRC90, Fig. 2 shows RRC180



Article description	Dimension	Order Ref.	Stock-status
RRC90	d 63, d 75, d 90	<b>613029</b>	3
RRC110	d 110	<b>613030</b>	3
RRC125	d 125	<b>613031</b>	3
RRC160	d 160	<b>613032</b>	3
RRC180	d 180	<b>613033</b>	3

**FWXR**

**Manual rounding clamps for pipes d 63 - d 250**



For retrospective rounding of HDPE and PE-Xa-pipes. Covering several dimensions due to the use of reducer spherical shells.

(Fig. shows FWXR-S1)

Article description	Dimension	Order Ref.	Stock-status
FWXR-S1	d 32, d 40, d 50, d 63	<b>613416</b>	1
FWXR-S2	d 90, d 110	<b>613431</b>	1
FWXR-S3	d 125, d 160	<b>613439</b>	1
FWXR-S4	d 180, d 200	<b>613443</b>	3
FWXR-S5	d 225, d 250	<b>613444</b>	3

**FWXRH**

**Hydraulic rounding clamps for pipes d 280 - d 900**



For the retrospective rounding of HDPE pipes. These rounding clamps are also available for hire.

Prices and availability of dimensions on request.

(Fig. shows hydraulic rounding clamp d 800)

Dimension	Order Ref.	Stock-status
d 280	<b>613452</b>	3
d 315	<b>613461</b>	3
d 355	<b>613462</b>	3
d 400	<b>613463</b>	3
d 450	<b>613464</b>	3
d 500	<b>613465</b>	3
d 560	<b>613467</b>	3
d 630	<b>613466</b>	3
d 710	<b>613468</b>	3
d 800	<b>613460</b>	3
d 900	<b>613458</b>	3

**FWXRB**

**Manual rounding clamps for pipes d 800 - d 1200**



For the retrospective rounding of HDPE pipes. These rounding clamps are also available for hire.

Prices and availability on request.

Dimension	Order Ref.	Stock-status
d 800 - d 1200	<b>613457</b>	3

**PCUT**

**Pipe cutter for d 20 – d 140**



Pipe cutter with rapid adjustment for HDPE pipes d 20–d 140 in SDR 11.

Article description	Dimension	Order Ref.	Stock-status
Pipe cutter d 63	d 20 - d 63	<b>613040</b>	1
Pipe cutter d 140	d 50 - d 140	<b>613041</b>	1
Replacement cutting wheel d 63	d 20 - d 63	<b>613042</b>	1
Replacement cutting wheel d 140	d 50 - d 140	<b>613043</b>	1

## FRIATOOLS Other tools and installation aids

### PCUT S

#### Pipe shears for d 20 – d 63



Lever action pipe shears for HDPE pipes d 20–d 63 in SDR 11.

Article description	Dimension	Order Ref.	Stock-status
Pipe shears d 40	d 20 - d 40	<b>613044</b>	1
Pipe shears d 63	d 20 - d 63	<b>613046</b>	1

### FWPM

#### FRIALEN-/FRIAFIT-Marker (silver)



For the marking of HDPE and PE-Xa-pipes.  
Colour silver. 10 pieces per package.

Order Ref.	Stock-status
<b>613069</b>	1

### FWSS

#### Activating key for pressure tapping tees



For drill activation subject to diameter ( $d_1$ ) of the FRIALEN pressure tapping tees DAA, DAA TL and DAA TL RE. Wrench size 17 mm can also be used for drill activation of all dimensions of SAB.

$d_1$	WS [mm]	Order Ref.	Stock-status
40-225	17	<b>613246</b> ①	1
90-315	19	<b>613250</b> ②	1

- ① A handling key wrench size 17 mm for all DAA RED SNAP, SAB, DAA d 50 - 75 and DAP d 63.  
② Usable for DAA TL, DAA TL RE, DAA d 90 - d 225 old version and DAP d 90 - d 225.



## FRIATOOLS Other tools and installation aids

### FWSR T

### Ratchet for activating key for pressure tapping tees with fast clamping lever



For drill activation of FRIALEN pressure tapping tees DAA with fast clamping lever, consisting of telescopic ratchet including box spanner attachment SW 17 mm.  
In addition, the actuation key FWSS SW17 mm is required (Ref.-No. 613246).

Article description	Order Ref.	Stock-status
Ratchet 1/2" with socket SW 17 mm	<b>613615</b>	1



### FWSR

### Activating key for pressure tapping tees with parallel dome (DAP)



For drill activation of FRIALEN pressure tapping tees with parallel dome DAP, consisting of ratchet and box spanner attachment.

Article description	Order Ref.	Stock-status
Ratchet 1/2"	<b>613610</b>	1
Socket SW 19 mm	<b>613605</b>	1
Socket SW 17 mm	<b>613606</b>	1

### FWDPA

### Pressure test adapter



Pressure test adapter for the use on FRIALEN pressure tapping tees DAP, DAA TL, DAA TL/RE  $d_1 = 61-315$ .  
Connection measurements internal thread = R 1/4".

Article description	Order Ref.	Stock-status
FWDPA for FRIALEN DAP, DAA TL, DAA TL RE	<b>613595</b>	1
FWDPA for FRIALEN SA UNI	<b>613596</b>	1



### FRIATOOLS rental equipment service



Aliaxis Deutschland offers the right equipment for every processing situation. In addition to FRIAMAT fusion units and FRIATOOLS scraper tools, a comprehensive range of tools and installation equipment for processing FRIALEN safety fittings, FRIALEN XL large pipe technology and the FRIAFIT sewage system can be rented.

# Notes

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